

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |                     |                                   | Internal Yield |                    |                      |                   | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |       |       |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|---------------------|-----------------------------------|----------------|--------------------|----------------------|-------------------|--|----------------------------|--------------------------------|-------|-------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |                     |                                   | API Historical |                    |                      | Lame' - Von Mises |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |       |       |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC LTC BTC |                | Open<br>End<br>psi | Capped<br>End<br>psi |                   |  |                            |                                |       |       |
| 4 1/2                           | 9.50         | 9.41         | 0.205              | 4.090             | 3.965               | --                        | H40              | 2,760                         | 111                       | 77   | --                  | --                                | 3,180          | 3,180              | --                   | --                | 3,170                                      | 3,530                      | 3,470                          | 5.000 | --    |
| 4 1/2                           | 9.50         | 9.41         | 0.205              | 4.090             | 3.965               | --                        | J55              | 3,310                         | 152                       | 101  | --                  | --                                | 4,380          | 4,380              | --                   | --                | 4,360                                      | 4,850                      | 4,370                          | 5.000 | --    |
| 4 1/2                           | 9.50         | 9.41         | 0.205              | 4.090             | 3.965               | --                        | K55              | 3,310                         | 152                       | 112  | --                  | --                                | 4,380          | 4,380              | --                   | --                | 4,360                                      | 4,850                      | 5,540                          | 5.000 | --    |
| 4 1/2                           | 9.50         | 9.41         | 0.205              | 4.090             | 3.965               | --                        | USS FS80         | 4,920                         | 207                       | 135  | --                  | --                                | 5,970          | 5,970              | --                   | --                | 5,940                                      | 6,610                      | 6,760                          | 5.000 | 4.875 |
| 4 1/2                           | 10.50        | 10.24        | 0.224              | 4.052             | 3.927               | --                        | J55              | 4,010                         | 165                       | 132  | --                  | 203                               | 4,790          | 4,790              | --                   | 4,790             | 4,770                                      | 5,280                      | 4,810                          | 5.000 | 4.875 |
| 4 1/2                           | 10.50        | 10.24        | 0.224              | 4.052             | 3.927               | --                        | K55              | 4,010                         | 165                       | 146  | --                  | 249                               | 4,790          | 4,790              | --                   | 4,790             | 4,770                                      | 5,280                      | 6,090                          | 5.000 | 4.875 |
| 4 1/2                           | 10.50        | 10.24        | 0.224              | 4.052             | 3.927               | --                        | USS FS80         | 5,920                         | 226                       | 175  | --                  | 260                               | 6,530          | 6,530              | --                   | 6,530             | 6,500                                      | 7,200                      | 7,430                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | J55              | 4,960                         | 184                       | 154  | 162                 | 225                               | 5,350          | 5,350              | 5,350                | 5,350             | 5,320                                      | 5,860                      | 5,390                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | K55              | 4,960                         | 184                       | 170  | 180                 | 277                               | 5,350          | 5,350              | 5,350                | 5,350             | 5,320                                      | 5,860                      | 6,830                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | USS FS80         | 7,270                         | 250                       | --   | 212                 | 288                               | 7,300          | --                 | 7,300                | 7,300             | 7,260                                      | 7,990                      | 8,340                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | USS GT80S        | 6,350                         | 267                       | --   | 212                 | 291                               | 7,790          | --                 | 7,790                | 7,790             | 7,740                                      | 8,520                      | 8,360                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | L80              | 6,350                         | 267                       | --   | 212                 | 291                               | 7,790          | --                 | 7,790                | 7,790             | 7,740                                      | 8,520                      | 8,360                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | L80 HC           | 7,270                         | 267                       | --   | 212                 | 291                               | 7,790          | --                 | 7,790                | 7,790             | 7,740                                      | 8,520                      | 8,360                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | L80 HP           | 7,750                         | 284                       | --   | 212                 | 294                               | 8,270          | --                 | 8,270                | 8,270             | 8,220                                      | 9,060                      | 8,360                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | N80n             | 6,350                         | 267                       | --   | 223                 | 304                               | 7,790          | --                 | 7,790                | 7,790             | 7,740                                      | 8,520                      | 7,280                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | N80              | 6,350                         | 267                       | --   | 223                 | 304                               | 7,790          | --                 | 7,790                | 7,790             | 7,740                                      | 8,520                      | 8,800                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | N80 HC           | 7,540                         | 267                       | --   | 223                 | 304                               | 7,790          | --                 | 7,790                | 7,790             | 7,740                                      | 8,520                      | 8,800                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | N80 HP           | 8,190                         | 317                       | --   | 234                 | 325                               | 9,250          | --                 | 9,250                | 9,250             | 9,190                                      | 10,120                     | 9,310                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | C90              | 6,820                         | 300                       | --   | 223                 | 309                               | 8,760          | --                 | 8,760                | 8,760             | 8,710                                      | 9,590                      | 9,770                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | USS C90          | 6,820                         | 300                       | --   | 223                 | 309                               | 8,760          | --                 | 8,760                | 8,760             | 8,710                                      | 9,590                      | 9,770                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | C95              | 7,030                         | 317                       | --   | 234                 | 325                               | 9,250          | --                 | 9,250                | 9,250             | 9,190                                      | 10,120                     | 9,310                          | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | T95              | 7,030                         | 317                       | --   | 234                 | 325                               | 9,250          | --                 | 9,250                | 9,250             | 9,190                                      | 10,120                     | 10,280                         | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | USS C95          | 7,030                         | 317                       | --   | 234                 | 325                               | 9,250          | --                 | 9,250                | 9,250             | 9,190                                      | 10,120                     | 10,280                         | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | USS C100         | 7,220                         | 334                       | --   | 245                 | 341                               | 9,730          | --                 | 9,730                | 9,730             | 9,680                                      | 10,660                     | 10,800                         | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | C110             | 7,580                         | 367                       | --   | --                  | --                                | 10,710         | --                 | --                   | --                | 10,640                                     | 11,720                     | 12,330                         | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | P110 SR16        | 7,580                         | 367                       | --   | 279                 | 385                               | 10,710         | --                 | 10,710               | 10,710            | 10,640                                     | 11,720                     | 11,160                         | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | P110             | 7,580                         | 367                       | --   | 279                 | 385                               | 10,710         | --                 | 10,710               | 10,710            | 10,640                                     | 11,720                     | 12,330                         | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | P110 HC          | 8,830                         | 367                       | --   | 279                 | 385                               | 10,710         | --                 | 10,710               | 10,710            | 10,640                                     | 11,720                     | 12,330                         | 5.000 | 4.875 |
| 4 1/2                           | 11.60        | 11.36        | 0.250              | 4.000             | 3.875               | --                        | P110 HP          | 9,540                         | 417                       | --   | 290                 | 407                               | 12,170         | --                 | 12,170               | 12,170            | 12,090                                     | 13,320                     | 12,920                         | 5.000 | 4.875 |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | USS GT80S        | 8,540                         | 307                       | --   | 257                 | 334                               | 9,030          | --                 | 9,030                | 9,030             | 8,960                                      | 9,810                      | 9,760                          | 5.000 | 4.875 |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | L80              | 8,540                         | 307                       | --   | 257                 | 334                               | 9,030          | --                 | 9,030                | 9,030             | 8,960                                      | 9,810                      | 9,760                          | 5.000 | 4.875 |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | L80 HC           | 9,240                         | 307                       | --   | 257                 | 334                               | 9,030          | --                 | 9,030                | 9,030             | 8,960                                      | 9,810                      | 9,760                          | 5.000 | 4.875 |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | L80 HP           | 9,760                         | 326                       | --   | 257                 | 337                               | 9,600          | --                 | 9,600                | 9,600             | 9,520                                      | 10,420                     | 9,760                          | 5.000 | 4.875 |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | N80n             | 8,540                         | 307                       | --   | 270                 | 349                               | 9,030          | --                 | 9,030                | 9,030             | 8,960                                      | 9,810                      | 8,490                          | 5.000 | 4.875 |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | N80              | 8,540                         | 307                       | --   | 270                 | 349                               | 9,030          | --                 | 9,030                | 9,030             | 8,960                                      | 9,810                      | 10,270                         | 5.000 | 4.875 |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | N80 HC           | 9,650                         | 307                       | --   | 270                 | 349                               | 9,030          | --                 | 9,030                | 9,030             | 8,960                                      | 9,810                      | 10,270                         | 5.000 | 4.875 |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | N80 HP           | 10,490                        | 364                       | --   | 284                 | 374                               | 10,720         | --                 | 10,660               | 9,790             | 10,640                                     | 11,650                     | 10,870                         | 5.000 | 4.875 |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | C90              | 9,300                         | 345                       | --   | 270                 | 355                               | 10,160         | --                 | 10,160               | 10,160            | 10,080                                     | 11,030                     | 11,420                         | 5.000 | 4.875 |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | USS C90          | 9,300                         | 345                       | --   | 270                 | 355                               | 10,160         | --                 | 10,160               | 10,160            | 10,080                                     | 11,030                     | 11,420                         | 5.000 | 4.875 |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |     |     | Internal Yield      |                |            |            |                    | Ductile<br>Rupture<br>Capped | Outside Diameter |                            |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-----|-----|---------------------|----------------|------------|------------|--------------------|------------------------------|------------------|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |     |     | Pipe<br>Body<br>psi | API Historical |            |            | Lame' - Von Mises  |                              | End<br>psi       | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |     |     |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi | Capped<br>End<br>psi         |                  |                            |                                |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | C95              | 9,660                         | 364                       | --   | 284 | 374 | 10,720              | --             | 10,720     | 10,720     | 10,640             | 11,650                       | 10,870           | 5.000                      | 4.875                          |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | T95              | 9,660                         | 364                       | --   | 284 | 374 | 10,720              | --             | 10,720     | 10,720     | 10,640             | 11,650                       | 12,020           | 5.000                      | 4.875                          |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | USS C95          | 9,660                         | 364                       | --   | 284 | 374 | 10,720              | --             | 10,720     | 10,720     | 10,640             | 11,650                       | 12,020           | 5.000                      | 4.875                          |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | USS C100         | 10,010                        | 384                       | --   | 297 | 392 | 11,290              | --             | 11,290     | 11,290     | 11,200             | 12,260                       | 12,620           | 5.000                      | 4.875                          |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | C110             | 10,690                        | 422                       | --   | --  | --  | 12,420              | --             | --         | --         | 12,320             | 13,490                       | 14,410           | 5.000                      | 4.875                          |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | P110 SR16        | 10,690                        | 422                       | --   | 338 | 443 | 12,420              | --             | 12,420     | 12,420     | 12,320             | 13,490                       | 13,040           | 5.000                      | 4.875                          |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | P110             | 10,690                        | 422                       | --   | 338 | 443 | 12,420              | --             | 12,420     | 12,420     | 12,320             | 13,490                       | 14,410           | 5.000                      | 4.875                          |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | P110 HC          | 11,810                        | 422                       | --   | 338 | 443 | 12,420              | --             | 12,420     | 12,420     | 12,320             | 13,490                       | 14,410           | 5.000                      | 4.875                          |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | P110 HP          | 12,730                        | 480                       | --   | 351 | 467 | 14,110              | --             | 14,110     | 13,460     | 14,000             | 15,320                       | 15,100           | 5.000                      | 4.875                          |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | Q125             | 11,600                        | 480                       | --   | 365 | 482 | 14,110              | --             | 14,110     | 14,110     | 14,000             | 15,320                       | 15,680           | 5.000                      | --                             |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | Q125 HC          | 12,400                        | 480                       | --   | 365 | 482 | 14,110              | --             | 14,110     | 14,110     | 14,000             | 15,320                       | 15,680           | 5.000                      | --                             |
| 4 1/2                           | 13.50        | 13.05        | 0.290              | 3.920             | 3.795               | --                        | Q125 HP          | 13,360                        | 518                       | --   | 378 | 503 | 15,240              | --             | 15,240     | 15,240     | 15,120             | 16,550                       | 16,350           | 5.000                      | --                             |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | L80              | 11,090                        | 353                       | --   | 308 | 384 | 10,490              | --             | 10,490     | 9,790      | 10,370             | 11,290                       | 11,430           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | L80 HC           | 11,410                        | 353                       | --   | 308 | 384 | 10,490              | --             | 10,490     | 9,790      | 10,370             | 11,290                       | 11,430           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | L80 HP           | 11,990                        | 375                       | --   | 308 | 388 | 11,140              | --             | 10,660     | 9,790      | 11,020             | 11,990                       | 11,430           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | N80              | 11,090                        | 353                       | --   | 325 | 401 | 10,490              | --             | 10,490     | 9,790      | 10,370             | 11,290                       | 12,030           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | N80 HC           | 11,980                        | 353                       | --   | 325 | 401 | 10,490              | --             | 10,490     | 9,790      | 10,370             | 11,290                       | 12,030           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | N80 HP           | 13,030                        | 419                       | --   | 341 | 429 | 12,460              | --             | 10,660     | 9,790      | 12,320             | 13,400                       | 12,730           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | C90              | 12,230                        | 397                       | --   | 325 | 408 | 11,800              | --             | 11,800     | 11,020     | 11,670             | 12,700                       | 13,380           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | USS C90          | 12,230                        | 397                       | --   | 325 | 408 | 11,800              | --             | 11,800     | 11,020     | 11,670             | 12,700                       | 13,380           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | C95              | 12,770                        | 419                       | --   | 341 | 429 | 12,460              | --             | 12,460     | 11,630     | 12,320             | 13,400                       | 12,730           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | T95              | 12,770                        | 419                       | --   | 341 | 429 | 12,460              | --             | 12,460     | 11,630     | 12,320             | 13,400                       | 14,080           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | USS C95          | 12,770                        | 419                       | --   | 341 | 429 | 12,460              | --             | 12,460     | 11,630     | 12,320             | 13,400                       | 14,080           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | USS C100         | 13,300                        | 441                       | --   | 357 | 450 | 13,110              | --             | 13,110     | 12,240     | 12,970             | 14,110                       | 14,790           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | C110             | 14,340                        | 485                       | --   | --  | --  | 14,420              | --             | --         | --         | 14,270             | 15,520                       | 16,890           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | P110 SR16        | 14,340                        | 485                       | --   | 406 | 509 | 14,420              | --             | 14,420     | 13,460     | 14,270             | 15,520                       | 15,270           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | P110             | 14,340                        | 485                       | --   | 406 | 509 | 14,420              | --             | 14,420     | 13,460     | 14,270             | 15,520                       | 16,890           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | P110 HC          | 15,130                        | 485                       | --   | 406 | 509 | 14,420              | --             | 14,420     | 13,460     | 14,270             | 15,520                       | 16,890           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | P110 HP          | 16,290                        | 551                       | --   | 422 | 536 | 16,390              | --             | 14,650     | 13,460     | 16,210             | 17,640                       | 17,700           | 5.000                      | 4.875                          |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | Q125             | 15,830                        | 551                       | --   | 438 | 554 | 16,390              | --             | 16,390     | 15,300     | 16,210             | 17,640                       | 18,380           | 5.000                      | --                             |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | Q125 HC          | 16,070                        | 551                       | --   | 438 | 554 | 16,390              | --             | 16,390     | 15,300     | 16,210             | 17,640                       | 18,380           | 5.000                      | --                             |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | Q125 HP          | 17,270                        | 595                       | --   | 454 | 578 | 17,700              | --             | 16,650     | 15,300     | 17,510             | 19,050                       | 19,160           | 5.000                      | --                             |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | USS140           | 17,240                        | 617                       | --   | 487 | 616 | 18,360              | --             | 18,360     | 17,140     | 18,160             | 19,750                       | 20,580           | 5.000                      | --                             |
| 4 1/2                           | 15.10        | 15.00        | 0.337              | 3.826             | 3.701               | --                        | USS V150         | 18,110                        | 661                       | --   | 519 | 658 | 19,670              | --             | 19,670     | 18,360     | 19,450             | 21,160                       | 22,060           | 5.000                      | --                             |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | C90              | 13,750                        | 437                       | --   | 367 | 429 | 13,120              | --             | 11,990     | 11,020     | 12,940             | 14,020                       | 14,990           | 5.000                      | 4.875                          |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | USS C90          | 13,750                        | 437                       | --   | 367 | 429 | 13,120              | --             | 11,990     | 11,020     | 12,940             | 14,020                       | 14,990           | 5.000                      | 4.875                          |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | C95              | 14,510                        | 462                       | --   | 386 | 450 | 13,850              | --             | 12,650     | 11,630     | 13,660             | 14,800                       | 14,240           | 5.000                      | 4.875                          |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | T95              | 14,510                        | 462                       | --   | 386 | 450 | 13,850              | --             | 12,650     | 11,630     | 13,660             | 14,800                       | 15,770           | 5.000                      | 4.875                          |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | USS C95          | 14,510                        | 462                       | --   | 386 | 450 | 13,850              | --             | 12,650     | 11,630     | 13,660             | 14,800                       | 15,770           | 5.000                      | 4.875                          |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |     |     |                     | Internal Yield                                |        |                    |                      |        | Ductile<br>Rupture<br>Capped | Outside Diameter |                            |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-----|-----|---------------------|---|--------|--------------------|----------------------|--------|------------------------------|------------------|----------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |     |     |                     | API Historical                                |        |                    | Lame' - Von Mises    |        |                              | End<br>psi       | Regular<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |     |     | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC psi LTC psi BTC psi |        | Open<br>End<br>psi | Capped<br>End<br>psi |        |                              |                  |                            |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | USS C100         | 15,280                        | 486                       | --   | 404 | 472 | 14,580              | --  | 13,320 | 12,240             | 14,380               | 15,580 | 16,570                       | 5.000            | 4.875                      |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | C110             | 16,810                        | 535                       | --   | --  | --  | 16,040              | --  | --     | --                 | 15,820               | 17,130 | 18,920                       | 5.000            | 4.875                      |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | P110 SR16        | 16,810                        | 535                       | --   | 459 | 536 | 16,040              | --  | 14,650 | 13,460             | 15,820               | 17,130 | 17,080                       | 5.000            | 4.875                      |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | P110             | 16,810                        | 535                       | --   | 459 | 536 | 16,040              | --  | 14,650 | 13,460             | 15,820               | 17,130 | 18,920                       | 5.000            | 4.875                      |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | P110 HC          | 17,680                        | 535                       | --   | 459 | 536 | 16,040              | --  | 14,650 | 13,460             | 15,820               | 17,130 | 18,920                       | 5.000            | 4.875                      |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | P110 HP          | 19,010                        | 608                       | --   | 478 | 536 | 18,220              | --  | 14,650 | 13,460             | 17,980               | 19,470 | 19,830                       | 5.000            | 4.875                      |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | Q125             | 19,100                        | 608                       | --   | 496 | 579 | 18,220              | --  | 16,650 | 15,300             | 17,980               | 19,470 | 20,590                       | 5.000            | --                         |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | Q125 HC          | 18,890                        | 608                       | --   | 496 | 579 | 18,220              | --  | 16,650 | 15,300             | 17,980               | 19,470 | 20,590                       | 5.000            | --                         |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | Q125 HP          | 20,260                        | 656                       | --   | 514 | 579 | 19,680              | --  | 16,650 | 15,300             | 19,420               | 21,030 | 21,460                       | 5.000            | --                         |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | USS140           | 21,130                        | 680                       | --   | 551 | 643 | 20,410              | --  | 18,650 | 17,140             | 20,130               | 21,810 | 23,050                       | 5.000            | --                         |
| 4 1/2                           | 16.60        | 16.54        | 0.375              | 3.750             | 3.625               | --                        | USS V150         | 22,330                        | 729                       | --   | 588 | 686 | 21,870              | --  | 19,980 | 18,360             | 21,570               | 23,370 | 24,710                       | 5.000            | --                         |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | C90              | 15,780                        | 502                       | --   | 436 | 429 | 15,280              | --  | 11,990 | 11,020             | 15,000               | 16,130 | 17,670                       | 5.000            | 4.875                      |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | USS C90          | 15,780                        | 502                       | --   | 436 | 429 | 15,280              | --  | 11,990 | 11,020             | 15,000               | 16,130 | 17,670                       | 5.000            | 4.875                      |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | C95              | 16,660                        | 530                       | --   | 458 | 450 | 16,130              | --  | 12,650 | 11,630             | 15,840               | 17,020 | 16,770                       | 5.000            | 4.875                      |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | T95              | 16,660                        | 530                       | --   | 458 | 450 | 16,130              | --  | 12,650 | 11,630             | 15,840               | 17,020 | 18,600                       | 5.000            | 4.875                      |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | USS C95          | 16,660                        | 530                       | --   | 458 | 450 | 16,130              | --  | 12,650 | 11,630             | 15,840               | 17,020 | 18,600                       | 5.000            | 4.875                      |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | USS C100         | 17,530                        | 558                       | --   | 479 | 472 | 16,980              | --  | 13,320 | 12,240             | 16,670               | 17,920 | 19,530                       | 5.000            | 4.875                      |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | C110             | 19,290                        | 614                       | --   | --  | --  | 18,680              | --  | --     | --                 | 18,340               | 19,710 | 22,310                       | 5.000            | 4.875                      |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | P110 SR16        | 19,290                        | 614                       | --   | 545 | 536 | 18,680              | --  | 14,650 | 13,460             | 18,340               | 19,710 | 20,120                       | 5.000            | 4.875                      |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | P110             | 19,290                        | 614                       | --   | 545 | 536 | 18,680              | --  | 14,650 | 13,460             | 18,340               | 19,710 | 22,310                       | 5.000            | 4.875                      |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | P110 HC          | 21,660                        | 614                       | --   | 545 | 536 | 18,680              | --  | 14,650 | 13,460             | 18,340               | 19,710 | 22,310                       | 5.000            | 4.875                      |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | P110 HP          | 23,270                        | 697                       | --   | 566 | 536 | 21,220              | --  | 14,650 | 13,460             | 20,840               | 22,400 | 23,370                       | 5.000            | 4.875                      |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | Q125             | 21,920                        | 697                       | --   | 588 | 579 | 21,220              | --  | 16,650 | 15,300             | 20,840               | 22,400 | 24,270                       | 5.000            | --                         |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | Q125 HC          | 23,260                        | 697                       | --   | 588 | 579 | 21,220              | --  | 16,650 | 15,300             | 20,840               | 22,400 | 24,270                       | 5.000            | --                         |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | Q125 HP          | 24,920                        | 753                       | --   | 610 | 579 | 22,920              | --  | 16,650 | 15,300             | 22,500               | 24,190 | 25,300                       | 5.000            | --                         |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | USS140           | 24,550                        | 781                       | --   | 654 | 643 | 23,770              | --  | 18,650 | 17,140             | 23,340               | 25,080 | 27,170                       | 5.000            | --                         |
| 4 1/2                           | 19.10        | 18.98        | 0.437              | 3.626             | 3.501               | --                        | USS V150         | 26,300                        | 837                       | --   | 697 | 686 | 25,470              | --  | 19,980 | 18,360             | 25,000               | 26,880 | 29,130                       | 5.000            | --                         |
| 5                               | 11.50        | 11.24        | 0.220              | 4.560             | 4.435               | --                        | J55              | 3,060                         | 182                       | 133  | --  | --  | 4,250               | 4,250   | --     | --                 | 4,230                | 4,690  | 4,250                        | 5.563            | --                         |
| 5                               | 11.50        | 11.24        | 0.220              | 4.560             | 4.435               | --                        | K55              | 3,060                         | 182                       | 147  | --  | --  | 4,250               | 4,250   | --     | --                 | 4,230                | 4,690  | 5,380                        | 5.563            | --                         |
| 5                               | 11.50        | 11.24        | 0.220              | 4.560             | 4.435               | --                        | USS FS80         | 4,550                         | 248                       | 177  | --  | --  | 5,790               | 5,790   | --     | --                 | 5,770                | 6,400  | 6,550                        | 5.563            | 5.375                      |
| 5                               | 13.00        | 12.84        | 0.253              | 4.494             | 4.369               | --                        | J55              | 4,140                         | 208                       | 169  | 182 | 252 | 4,860               | 4,860   | 4,860  | 4,860              | 4,840                | 5,360  | 4,880                        | 5.563            | 5.375                      |
| 5                               | 13.00        | 12.84        | 0.253              | 4.494             | 4.369               | --                        | K55              | 4,140                         | 208                       | 186  | 201 | 309 | 4,860               | 4,860   | 4,860  | 4,860              | 4,840                | 5,360  | 6,180                        | 5.563            | 5.375                      |
| 5                               | 13.00        | 12.84        | 0.253              | 4.494             | 4.369               | --                        | USS FS80         | 6,110                         | 283                       | 224  | 241 | 323 | 6,630               | 6,630   | 6,630  | 6,630              | 6,600                | 7,310  | 7,540                        | 5.563            | 5.375                      |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | J55              | 5,560                         | 241                       | 207  | 223 | 293 | 5,700               | 5,700   | 5,700  | 5,700              | 5,660                | 6,220  | 5,750                        | 5.563            | 5.375                      |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | K55              | 5,560                         | 241                       | 228  | 246 | 359 | 5,700               | 5,700   | 5,700  | 5,700              | 5,660                | 6,220  | 7,280                        | 5.563            | 5.375                      |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | USS FS80         | 8,090                         | 328                       | 274  | 295 | 375 | 7,770               | 7,770   | 7,770  | 7,770              | 7,720                | 8,490  | 8,900                        | 5.563            | 5.375                      |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | USS GT80S        | 7,250                         | 350                       | --   | 295 | 379 | 8,290               | --  | 8,290  | 8,290              | 8,230                | 9,050  | 8,920                        | 5.563            | 5.375                      |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | L80              | 7,250                         | 350                       | --   | 295 | 379 | 8,290               | --  | 8,290  | 8,290              | 8,230                | 9,050  | 8,920                        | 5.563            | 5.375                      |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | L80 HC           | 8,090                         | 350                       | --   | 295 | 379 | 8,290               | --  | 8,290  | 8,290              | 8,230                | 9,050  | 8,920                        | 5.563            | 5.375                      |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |                     |   | Internal Yield |                    |                      |                   |        | Ductile<br>Rupture<br>Capped | Outside Diameter |                            |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|---------------------|---|----------------|--------------------|----------------------|-------------------|--------|------------------------------|------------------|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |                     |   | API Historical |                    |                      | Lame' - Von Mises |        |                              | End<br>psi       | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC psi LTC psi BTC psi |                | Open<br>End<br>psi | Capped<br>End<br>psi | End<br>psi        |        |                              |                  |                            |                                |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | L80 HP           | 8,590                         | 372                       | --   | 295                 | 383   | 8,810          | --                 | 8,810                | 8,810             | 8,750  | 9,620                        | 8,920            | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | N80n             | 7,250                         | 350                       | --   | 311                 | 396   | 8,290          | --                 | 8,290                | 8,290             | 8,230  | 9,050                        | 7,760            | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | N80              | 7,250                         | 350                       | --   | 311                 | 396   | 8,290          | --                 | 8,290                | 8,290             | 8,230  | 9,050                        | 9,390            | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | N80 HC           | 8,420                         | 350                       | --   | 311                 | 396   | 8,290          | --                 | 8,290                | 8,290             | 8,230  | 9,050                        | 9,390            | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | N80 HP           | 9,150                         | 416                       | --   | 326                 | 424   | 9,840          | --                 | 9,840                | 9,840             | 9,780  | 10,750                       | 9,930            | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | C90              | 7,830                         | 394                       | --   | 311                 | 404   | 9,320          | --                 | 9,320                | 9,320             | 9,260  | 10,190                       | 10,430           | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | USS C90          | 7,830                         | 394                       | --   | 311                 | 404   | 9,320          | --                 | 9,320                | 9,320             | 9,260  | 10,190                       | 10,430           | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | C95              | 8,110                         | 416                       | --   | 326                 | 424   | 9,840          | --                 | 9,840                | 9,840             | 9,780  | 10,750                       | 9,930            | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | T95              | 8,110                         | 416                       | --   | 326                 | 424   | 9,840          | --                 | 9,840                | 9,840             | 9,780  | 10,750                       | 10,980           | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | USS C95          | 8,110                         | 416                       | --   | 326                 | 424   | 9,840          | --                 | 9,840                | 9,840             | 9,780  | 10,750                       | 10,980           | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | USS C100         | 8,370                         | 437                       | --   | 342                 | 445   | 10,360         | --                 | 10,360               | 10,360            | 10,290 | 11,320                       | 11,530           | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | C110             | 8,850                         | 481                       | --   | --                  | --  | 11,400         | --                 | --                   | --                | 11,320 | 12,450                       | 12,640           | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | P110 SR16        | 8,850                         | 481                       | --   | 388                 | 503   | 11,400         | --                 | 11,400               | 11,400            | 11,320 | 12,450                       | 11,910           | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | P110             | 8,850                         | 481                       | --   | 388                 | 503   | 11,400         | --                 | 11,400               | 11,400            | 11,320 | 12,450                       | 13,170           | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | P110 HC          | 10,060                        | 481                       | --   | 388                 | 503   | 11,400         | --                 | 11,400               | 11,400            | 11,320 | 12,450                       | 13,170           | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | P110 HP          | 10,860                        | 547                       | --   | 404                 | 532   | 12,950         | --                 | 12,950               | 12,950            | 12,860 | 14,150                       | 13,790           | 5.563                      | 5.375                          |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | Q125             | 9,480                         | 547                       | --   | 420                 | 548   | 12,950         | --                 | 12,950               | 12,950            | 12,860 | 14,150                       | 14,330           | 5.563                      | --                             |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | Q125 HC          | 10,490                        | 547                       | --   | 420                 | 548   | 12,950         | --                 | 12,950               | 12,950            | 12,860 | 14,150                       | 14,330           | 5.563                      | --                             |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | Q125 HP          | 11,320                        | 590                       | --   | 435                 | 573   | 13,990         | --                 | 13,990               | 13,990            | 13,890 | 15,280                       | 14,930           | 5.563                      | --                             |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | USS140           | 9,990                         | 612                       | --   | 466                 | 610   | 14,500         | --                 | 14,500               | 14,500            | 14,410 | 15,840                       | 16,040           | 5.563                      | --                             |
| 5                               | 15.00        | 14.88        | 0.296              | 4.408             | 4.283               | --                        | USS V150         | 10,250                        | 656                       | --   | 497                 | 651   | 15,540         | --                 | 15,540               | 15,540            | 15,430 | 16,980                       | 17,190           | 5.563                      | --                             |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | USS GT80S        | 10,490                        | 422                       | --   | 376                 | 457   | 10,140         | --                 | 10,140               | 9,910             | 10,040 | 10,940                       | 11,030           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | L80              | 10,490                        | 422                       | --   | 376                 | 457   | 10,140         | --                 | 10,140               | 9,910             | 10,040 | 10,940                       | 11,030           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | L80 HC           | 10,900                        | 422                       | --   | 376                 | 457   | 10,140         | --                 | 10,140               | 9,910             | 10,040 | 10,940                       | 11,030           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | L80 HP           | 11,470                        | 448                       | --   | 376                 | 462   | 10,780         | --                 | 10,780               | 9,910             | 10,670 | 11,620                       | 11,030           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | N80n             | 10,490                        | 422                       | --   | 396                 | 477   | 10,140         | --                 | 10,140               | 9,910             | 10,040 | 10,940                       | 9,590            | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | N80              | 10,490                        | 422                       | --   | 396                 | 477   | 10,140         | --                 | 10,140               | 9,910             | 10,040 | 10,940                       | 11,610           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | N80 HC           | 11,440                        | 422                       | --   | 396                 | 477   | 10,140         | --                 | 10,140               | 9,910             | 10,040 | 10,940                       | 11,610           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | N80 HP           | 12,430                        | 501                       | --   | 416                 | 512   | 12,050         | --                 | 10,810               | 9,910             | 11,920 | 12,990                       | 12,290           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | C90              | 11,520                        | 475                       | --   | 396                 | 487   | 11,410         | --                 | 11,410               | 11,150            | 11,300 | 12,310                       | 12,910           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | USS C90          | 11,520                        | 475                       | --   | 396                 | 487   | 11,410         | --                 | 11,410               | 11,150            | 11,300 | 12,310                       | 12,910           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | C95              | 12,030                        | 501                       | --   | 416                 | 512   | 12,050         | --                 | 12,050               | 11,770            | 11,920 | 12,990                       | 12,290           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | T95              | 12,030                        | 501                       | --   | 416                 | 512   | 12,050         | --                 | 12,050               | 11,770            | 11,920 | 12,990                       | 13,590           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | USS C95          | 12,030                        | 501                       | --   | 416                 | 512   | 12,050         | --                 | 12,050               | 11,770            | 11,920 | 12,990                       | 13,590           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | USS C100         | 12,520                        | 528                       | --   | 436                 | 537   | 12,680         | --                 | 12,680               | 12,390            | 12,550 | 13,670                       | 14,270           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | C110             | 13,470                        | 580                       | --   | --                  | --  | 13,950         | --                 | --                   | --                | 13,810 | 15,040                       | 15,650           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | P110 SR16        | 13,470                        | 580                       | --   | 495                 | 606   | 13,950         | --                 | 13,950               | 13,620            | 13,810 | 15,040                       | 14,740           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | P110             | 13,470                        | 580                       | --   | 495                 | 606   | 13,950         | --                 | 13,950               | 13,620            | 13,810 | 15,040                       | 16,300           | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | P110 HC          | 14,360                        | 580                       | --   | 495                 | 606   | 13,950         | --                 | 13,950               | 13,620            | 13,810 | 15,040                       | 16,300           | 5.563                      | 5.375                          |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | TENSION                       |                           |  |            |            | Internal Yield      |                |                    |                      |                   | Ductile |                      | Outside Diameter           |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|------------|------------|---------------------|----------------|--------------------|----------------------|-------------------|---------|----------------------|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade | Collapse<br>Resistance<br>psi | Joint Strength, 1,000 lbs |  |            |            | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |         | Capped<br>End<br>psi | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC<br>psi | LTC<br>psi |                     | BTC<br>psi     | Open<br>End<br>psi | Capped<br>End<br>psi |                   |         |                      |                            |                                |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | P110 HP          | 15,460                        | 659                       | --   | 515        | 641        | 15,850              | --             | 14,870             | 13,620               | 15,690            | 17,090  | 17,080               | 5.563                      | 5.375                          |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | Q125             | 14,820                        | 659                       | --   | 535        | 661        | 15,850              | --             | 15,850             | 15,480               | 15,690            | 17,090  | 17,740               | 5.563                      | --                             |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | Q125 HC          | 15,220                        | 659                       | --   | 535        | 661        | 15,850              | --             | 15,850             | 15,480               | 15,690            | 17,090  | 17,740               | 5.563                      | --                             |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | Q125 HP          | 16,360                        | 712                       | --   | 555        | 691        | 17,120              | --             | 16,900             | 15,480               | 16,940            | 18,460  | 18,490               | 5.563                      | --                             |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | USS140           | 16,080                        | 739                       | --   | 594        | 735        | 17,750              | --             | 17,750             | 17,340               | 17,570            | 19,140  | 19,860               | 5.563                      | --                             |
| 5                               | 18.00        | 17.95        | 0.362              | 4.276             | 4.151               | --                        | USS V150         | 16,860                        | 791                       | --   | 634        | 785        | 19,020              | --             | 19,020             | 18,580               | 18,830            | 20,510  | 21,290               | 5.563                      | --                             |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | USS GT80S        | 12,760                        | 501                       | --   | 466        | 510        | 12,220              | --             | 10,810             | 9,910                | 12,040            | 13,020  | 13,450               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | L80              | 12,760                        | 501                       | --   | 466        | 510        | 12,220              | --             | 10,810             | 9,910                | 12,040            | 13,020  | 13,450               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | L80 HC           | 13,900                        | 501                       | --   | 466        | 510        | 12,220              | --             | 10,810             | 9,910                | 12,040            | 13,020  | 13,450               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | L80 HP           | 14,550                        | 532                       | --   | 466        | 510        | 12,990              | --             | 10,810             | 9,910                | 12,800            | 13,830  | 13,450               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | N80n             | 12,760                        | 501                       | --   | 490        | 537        | 12,220              | --             | 10,810             | 9,910                | 12,040            | 13,020  | 11,660               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | N80              | 12,760                        | 501                       | --   | 490        | 537        | 12,220              | --             | 10,810             | 9,910                | 12,040            | 13,020  | 14,160               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | N80 HC           | 14,640                        | 501                       | --   | 490        | 537        | 12,220              | --             | 10,810             | 9,910                | 12,040            | 13,020  | 14,160               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | N80 HP           | 15,920                        | 595                       | --   | 515        | 537        | 14,520              | --             | 10,810             | 9,910                | 14,300            | 15,460  | 14,980               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | C90              | 14,360                        | 564                       | --   | 490        | 537        | 13,750              | --             | 12,170             | 11,150               | 13,550            | 14,650  | 15,760               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | USS C90          | 14,360                        | 564                       | --   | 490        | 537        | 13,750              | --             | 12,170             | 11,150               | 13,550            | 14,650  | 15,760               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | C95              | 15,150                        | 595                       | --   | 515        | 563        | 14,520              | --             | 12,840             | 11,770               | 14,300            | 15,460  | 14,980               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | T95              | 15,150                        | 595                       | --   | 515        | 563        | 14,520              | --             | 12,840             | 11,770               | 14,300            | 15,460  | 16,590               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | USS C95          | 15,150                        | 595                       | --   | 515        | 563        | 14,520              | --             | 12,840             | 11,770               | 14,300            | 15,460  | 16,590               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | USS C100         | 15,950                        | 626                       | --   | 539        | 590        | 15,280              | --             | 13,520             | 12,390               | 15,050            | 16,270  | 17,430               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | C110             | 17,550                        | 689                       | --   | --         | --         | 16,810              | --             | --                 | --                   | 16,560            | 17,900  | 19,110               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | P110 SR16        | 17,550                        | 689                       | --   | 613        | 671        | 16,810              | --             | 14,870             | 13,620               | 16,560            | 17,900  | 17,960               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | P110             | 17,550                        | 689                       | --   | 613        | 671        | 16,810              | --             | 14,870             | 13,620               | 16,560            | 17,900  | 19,900               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | P110 HC          | 18,870                        | 689                       | --   | 613        | 671        | 16,810              | --             | 14,870             | 13,620               | 16,560            | 17,900  | 19,900               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | P110 HP          | 20,290                        | 783                       | --   | 637        | 671        | 19,100              | --             | 14,870             | 13,620               | 18,820            | 20,340  | 20,850               | 5.563                      | 5.375                          |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | Q125             | 19,940                        | 783                       | --   | 662        | 724        | 19,100              | --             | 16,900             | 15,480               | 18,820            | 20,340  | 21,660               | 5.563                      | --                             |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | Q125 HC          | 20,200                        | 783                       | --   | 662        | 724        | 19,100              | --             | 16,900             | 15,480               | 18,820            | 20,340  | 21,660               | 5.563                      | --                             |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | Q125 HP          | 21,660                        | 846                       | --   | 686        | 724        | 20,630              | --             | 16,900             | 15,480               | 20,320            | 21,970  | 22,570               | 5.563                      | --                             |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | USS140           | 22,340                        | 877                       | --   | 735        | 805        | 21,390              | --             | 18,930             | 17,340               | 21,080            | 22,780  | 24,240               | 5.563                      | --                             |
| 5                               | 21.40        | 21.32        | 0.437              | 4.126             | 4.001               | --                        | USS V150         | 23,930                        | 940                       | --   | 784        | 858        | 22,920              | --             | 20,280             | 18,580               | 22,580            | 24,410  | 25,990               | 5.563                      | --                             |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | USS GT80S        | 13,830                        | 543                       | --   | 513        | 510        | 13,380              | --             | 10,810             | 9,910                | 13,140            | 14,130  | 14,820               | 5.563                      | 5.375                          |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | L80              | 13,830                        | 543                       | --   | 513        | 510        | 13,380              | --             | 10,810             | 9,910                | 13,140            | 14,130  | 14,820               | 5.563                      | 5.375                          |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | L80 HC           | 15,500                        | 543                       | --   | 513        | 510        | 13,380              | --             | 10,810             | 9,910                | 13,140            | 14,130  | 14,820               | 5.563                      | 5.375                          |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | L80 HP           | 16,200                        | 577                       | --   | 513        | 510        | 14,210              | --             | 10,810             | 9,910                | 13,960            | 15,010  | 14,820               | 5.563                      | 5.375                          |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | N80n             | 13,830                        | 543                       | --   | 540        | 537        | 13,380              | --             | 10,810             | 9,910                | 13,140            | 14,130  | 12,830               | 5.563                      | 5.375                          |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | N80              | 13,830                        | 543                       | --   | 540        | 537        | 13,380              | --             | 10,810             | 9,910                | 13,140            | 14,130  | 15,600               | 5.563                      | 5.375                          |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | N80 HC           | 16,340                        | 543                       | --   | 540        | 537        | 13,380              | --             | 10,810             | 9,910                | 13,140            | 14,130  | 15,600               | 5.563                      | 5.375                          |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | N80 HP           | 17,760                        | 645                       | --   | 567        | 537        | 15,880              | --             | 10,810             | 9,910                | 15,600            | 16,780  | 16,500               | 5.563                      | 5.375                          |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | C90              | 15,560                        | 611                       | --   | 540        | 537        | 15,050              | --             | 12,170             | 11,150               | 14,780            | 15,900  | 17,380               | 5.563                      | 5.375                          |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |                     |   | Internal Yield |                    |                      |                   |                 | Ductile<br>Rupture<br>Capped | Outside Diameter |            |            |         |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|---------------------|---|----------------|--------------------|----------------------|-------------------|-----------------|------------------------------|------------------|------------|------------|---------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |                     |   | API Historical |                    |                      | Lame' - Von Mises |                 |                              | End<br>psi       | End<br>psi | End<br>psi | Regular |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC psi LTC psi BTC psi |                | Open<br>End<br>psi | Capped<br>End<br>psi | Coupling<br>in.   | Coupling<br>in. |                              |                  |            |            |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | USS C90          | 15,560                        | 611                       | --   | 540                 | 537   | 15,050         | --                 | 12,170               | 11,150            | 14,780          | 15,900                       | 17,380           | 5.563      | 5.375      |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | C95              | 16,430                        | 645                       | --   | 567                 | 563   | 15,880         | --                 | 12,840               | 11,770            | 15,600          | 16,780                       | 16,500           | 5.563      | 5.375      |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | T95              | 16,430                        | 645                       | --   | 567                 | 563   | 15,880         | --                 | 12,840               | 11,770            | 15,600          | 16,780                       | 18,290           | 5.563      | 5.375      |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | USS C95          | 16,430                        | 645                       | --   | 567                 | 563   | 15,880         | --                 | 12,840               | 11,770            | 15,600          | 16,780                       | 18,290           | 5.563      | 5.375      |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | USS C100         | 17,290                        | 679                       | --   | 594                 | 590   | 16,720         | --                 | 13,520               | 12,390            | 16,420          | 17,660                       | 19,210           | 5.563      | 5.375      |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | C110             | 19,020                        | 747                       | --   | --                  | --  | 18,390         | --                 | --                   | --                | 18,070          | 19,430                       | 21,060           | 5.563      | 5.375      |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | P110 SR16        | 19,020                        | 747                       | --   | 675                 | 671   | 18,390         | --                 | 14,870               | 13,620            | 18,070          | 19,430                       | 19,790           | 5.563      | 5.375      |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | P110             | 19,020                        | 747                       | --   | 675                 | 671   | 18,390         | --                 | 14,870               | 13,620            | 18,070          | 19,430                       | 21,940           | 5.563      | 5.375      |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | P110 HC          | 21,230                        | 747                       | --   | 675                 | 671   | 18,390         | --                 | 14,870               | 13,620            | 18,070          | 19,430                       | 21,940           | 5.563      | 5.375      |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | P110 HP          | 22,810                        | 849                       | --   | 702                 | 671   | 20,900         | --                 | 14,870               | 13,620            | 20,530          | 22,080                       | 22,990           | 5.563      | 5.375      |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | Q125             | 21,620                        | 849                       | --   | 729                 | 724   | 20,900         | --                 | 16,900               | 15,480            | 20,530          | 22,080                       | 23,870           | 5.563      | --         |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | Q125 HC          | 22,790                        | 849                       | --   | 729                 | 724   | 20,900         | --                 | 16,900               | 15,480            | 20,530          | 22,080                       | 23,870           | 5.563      | --         |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | Q125 HP          | 24,420                        | 917                       | --   | 756                 | 724   | 22,570         | --                 | 16,900               | 15,480            | 22,170          | 23,850                       | 24,880           | 5.563      | --         |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | USS140           | 24,210                        | 951                       | --   | 810                 | 805   | 23,410         | --                 | 18,930               | 17,340            | 22,990          | 24,730                       | 26,720           | 5.563      | --         |         |
| 5                               | 23.20        | 23.11        | 0.478              | 4.044             | 3.919               | --                        | USS V150         | 25,940                        | 1,019                     | --   | 864                 | 858   | 25,080         | --                 | 20,280               | 18,580            | 24,640          | 26,500                       | 28,650           | 5.563      | --         |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | USS GT80S        | 14,400                        | 566                       | --   | 538                 | 510   | 14,020         | --                 | 10,810               | 9,910             | 13,740          | 14,720                       | 15,590           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | L80              | 14,400                        | 566                       | --   | 538                 | 510   | 14,020         | --                 | 10,810               | 9,910             | 13,740          | 14,720                       | 15,590           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | L80 HC           | 16,350                        | 566                       | --   | 538                 | 510   | 14,020         | --                 | 10,810               | 9,910             | 13,740          | 14,720                       | 15,590           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | L80 HP           | 17,080                        | 601                       | --   | 538                 | 510   | 14,890         | --                 | 10,810               | 9,910             | 14,600          | 15,640                       | 15,590           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | N80n             | 14,400                        | 566                       | --   | 567                 | 537   | 14,020         | --                 | 10,810               | 9,910             | 13,740          | 14,720                       | 13,490           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | N80              | 14,400                        | 566                       | --   | 567                 | 537   | 14,020         | --                 | 10,810               | 9,910             | 13,740          | 14,720                       | 16,410           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | N80 HC           | 17,250                        | 566                       | --   | 567                 | 537   | 14,020         | --                 | 10,810               | 9,910             | 13,740          | 14,720                       | 16,410           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | N80 HP           | 18,740                        | 672                       | --   | 582                 | 537   | 16,640         | --                 | 10,810               | 9,910             | 16,320          | 17,480                       | 17,360           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | C90              | 16,200                        | 636                       | --   | 567                 | 537   | 15,770         | --                 | 12,170               | 11,150            | 15,460          | 16,560                       | 18,280           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | USS C90          | 16,200                        | 636                       | --   | 567                 | 537   | 15,770         | --                 | 12,170               | 11,150            | 15,460          | 16,560                       | 18,280           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | C95              | 17,100                        | 672                       | --   | 595                 | 563   | 16,640         | --                 | 12,840               | 11,770            | 16,320          | 17,480                       | 17,360           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | T95              | 17,100                        | 672                       | --   | 595                 | 563   | 16,640         | --                 | 12,840               | 11,770            | 16,320          | 17,480                       | 19,250           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | USS C95          | 17,100                        | 672                       | --   | 595                 | 563   | 16,640         | --                 | 12,840               | 11,770            | 16,320          | 17,480                       | 19,250           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | USS C100         | 18,000                        | 707                       | --   | 623                 | 590   | 17,520         | --                 | 13,520               | 12,390            | 17,180          | 18,400                       | 20,210           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | C110             | 19,800                        | 778                       | --   | --                  | --  | 19,270         | --                 | --                   | --                | 18,900          | 20,240                       | 22,160           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | P110 SR16        | 19,800                        | 778                       | --   | 708                 | 671   | 19,270         | --                 | 14,870               | 13,620            | 18,900          | 20,240                       | 20,820           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | P110             | 19,800                        | 778                       | --   | 708                 | 671   | 19,270         | --                 | 14,870               | 13,620            | 18,900          | 20,240                       | 23,080           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | P110 HC          | 22,480                        | 778                       | --   | 708                 | 671   | 19,270         | --                 | 14,870               | 13,620            | 18,900          | 20,240                       | 23,080           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | P110 HP          | 24,140                        | 884                       | --   | 728                 | 671   | 21,900         | --                 | 14,870               | 13,620            | 21,480          | 23,000                       | 24,190           | 5.563      | 5.375      |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | Q125             | 22,500                        | 884                       | --   | 765                 | 724   | 21,900         | --                 | 16,900               | 15,480            | 21,480          | 23,000                       | 25,120           | 5.563      | --         |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | Q125 HC          | 24,150                        | 884                       | --   | 765                 | 724   | 21,900         | --                 | 16,900               | 15,480            | 21,480          | 23,000                       | 25,120           | 5.563      | --         |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | Q125 HP          | 25,880                        | 954                       | --   | 786                 | 724   | 23,650         | --                 | 16,900               | 15,480            | 23,190          | 24,840                       | 26,180           | 5.563      | --         |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | USS140           | 25,200                        | 990                       | --   | 850                 | 805   | 24,530         | --                 | 18,930               | 17,340            | 24,050          | 25,760                       | 28,120           | 5.563      | --         |         |
| 5                               | 24.10        | 24.05        | 0.500              | 4.000             | 3.875               | --                        | USS V150         | 27,000                        | 1,060                     | --   | 907                 | 858   | 26,280         | --                 | 20,280               | 18,580            | 25,770          | 27,600                       | 30,150           | 5.563      | --         |         |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | TENSION                       |                           |  |            |            | Internal Yield      |                |                    |                      |                   | Ductile    |                      | Outside Diameter           |                         |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|------------|------------|---------------------|----------------|--------------------|----------------------|-------------------|------------|----------------------|----------------------------|-------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade | Collapse<br>Resistance<br>psi | Joint Strength, 1,000 lbs |  |            |            | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |            | Capped<br>End<br>psi | Regular<br>Coupling<br>in. | Special Clr<br>Coupling |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC<br>psi | LTC<br>psi |                     | BTC<br>psi     | Open<br>End<br>psi | Capped<br>End<br>psi | End<br>psi        | End<br>psi |                      |                            |                         |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | C90              | 17,950                        | 705                       | --   | 582        | 537        | 17,710              | --             | 12,170             | 11,150               | 17,280            | 18,390     | 20,770               | 5.563                      | 5.375                   |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | USS C90          | 17,950                        | 705                       | --   | 582        | 537        | 17,710              | --             | 12,170             | 11,150               | 17,280            | 18,390     | 20,770               | 5.563                      | 5.375                   |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | C95              | 18,950                        | 744                       | --   | 611        | 563        | 18,700              | --             | 12,840             | 11,770               | 18,240            | 19,420     | 19,690               | 5.563                      | 5.375                   |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | T95              | 18,950                        | 744                       | --   | 611        | 563        | 18,700              | --             | 12,840             | 11,770               | 18,240            | 19,420     | 21,860               | 5.563                      | 5.375                   |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | USS C95          | 18,950                        | 744                       | --   | 611        | 563        | 18,700              | --             | 12,840             | 11,770               | 18,240            | 19,420     | 21,860               | 5.563                      | 5.375                   |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | USS C100         | 19,950                        | 784                       | --   | 640        | 590        | 19,680              | --             | 13,520             | 12,390               | 19,200            | 20,440     | 22,960               | 5.563                      | 5.375                   |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | C110             | 21,940                        | 862                       | --   | --         | --         | 21,650              | --             | --                 | --                   | 21,120            | 22,480     | 25,170               | 5.563                      | 5.375                   |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | P110 SR16        | 21,940                        | 862                       | --   | 728        | 671        | 21,650              | --             | 14,870             | 13,620               | 21,120            | 22,480     | 23,620               | 5.563                      | 5.375                   |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | P110             | 21,940                        | 862                       | --   | 728        | 671        | 21,650              | --             | 14,870             | 13,620               | 21,120            | 22,480     | 26,220               | 5.563                      | 5.375                   |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | P110 HC          | 25,940                        | 862                       | --   | 728        | 671        | 21,650              | --             | 14,870             | 13,620               | 21,120            | 22,480     | 26,220               | 5.563                      | 5.375                   |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | P110 HP          | 27,850                        | 980                       | --   | 728        | 671        | 24,600              | --             | 14,870             | 13,620               | 24,000            | 25,550     | 27,470               | 5.563                      | 5.375                   |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | Q125             | 24,930                        | 980                       | --   | 786        | 724        | 24,600              | --             | 16,900             | 15,480               | 24,000            | 25,550     | 28,530               | 5.563                      | --                      |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | Q125 HC          | 27,940                        | 980                       | --   | 786        | 724        | 24,600              | --             | 16,900             | 15,480               | 24,000            | 25,550     | 28,530               | 5.563                      | --                      |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | Q125 HP          | 29,920                        | 1,058                     | --   | 786        | 724        | 26,570              | --             | 16,900             | 15,480               | 25,920            | 27,590     | 29,740               | 5.563                      | --                      |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | USS140           | 27,930                        | 1,097                     | --   | 873        | 805        | 27,550              | --             | 18,930             | 17,340               | 26,880            | 28,610     | 31,940               | 5.563                      | --                      |
| 5                               | 26.70        | 26.66        | 0.562              | 3.876             | 3.751               | --                        | USS V150         | 29,920                        | 1,175                     | --   | 931        | 858        | 29,520              | --             | 20,280             | 18,580               | 28,800            | 30,660     | 34,240               | 5.563                      | --                      |
| 5 1/2                           | 14.00        | 13.71        | 0.244              | 5.012             | 4.887               | --                        | H40              | 2,620                         | 161                       | 130  | --         | --         | 3,110               | 3,110          | --                 | --                   | 3,100             | 3,440      | 3,400                | 6.050                      | --                      |
| 5 1/2                           | 14.00        | 13.71        | 0.244              | 5.012             | 4.887               | --                        | J55              | 3,120                         | 222                       | 172  | --         | --         | 4,280               | 4,280          | --                 | --                   | 4,260             | 4,730      | 4,280                | 6.050                      | --                      |
| 5 1/2                           | 14.00        | 13.71        | 0.244              | 5.012             | 4.887               | --                        | K55              | 3,120                         | 222                       | 189  | --         | --         | 4,280               | 4,280          | --                 | --                   | 4,260             | 4,730      | 5,420                | 6.050                      | --                      |
| 5 1/2                           | 14.00        | 13.71        | 0.244              | 5.012             | 4.887               | --                        | USS FS80         | 4,640                         | 302                       | 228  | --         | --         | 5,840               | 5,840          | --                 | --                   | 5,810             | 6,450      | 6,610                | 6.050                      | 5.875                   |
| 5 1/2                           | 15.50        | 15.36        | 0.275              | 4.950             | 4.825               | --                        | J55              | 4,040                         | 248                       | 202  | 217        | 300        | 4,820               | 4,820          | 4,820              | 4,820                | 4,800             | 5,300      | 4,840                | 6.050                      | 5.875                   |
| 5 1/2                           | 15.50        | 15.36        | 0.275              | 4.950             | 4.825               | --                        | K55              | 4,040                         | 248                       | 222  | 239        | 366        | 4,820               | 4,820          | 4,820              | 4,820                | 4,800             | 5,300      | 6,130                | 6.050                      | 5.875                   |
| 5 1/2                           | 15.50        | 15.36        | 0.275              | 4.950             | 4.825               | --                        | USS FS80         | 5,970                         | 339                       | 268  | 288        | 385        | 6,570               | 6,570          | 6,570              | 6,570                | 6,540             | 7,230      | 7,470                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | J55              | 4,910                         | 273                       | 229  | 247        | 329        | 5,320               | 5,320          | 5,320              | 5,320                | 5,290             | 5,830      | 5,360                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | K55              | 4,910                         | 273                       | 252  | 272        | 402        | 5,320               | 5,320          | 5,320              | 5,320                | 5,290             | 5,830      | 6,780                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | USS FS80         | 7,200                         | 372                       | 304  | 327        | 423        | 7,250               | 7,250          | 7,250              | 7,250                | 7,210             | 7,950      | 8,280                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | USS GT80S        | 6,290                         | 397                       | --   | 338        | 428        | 7,740               | --             | 7,740              | 7,740                | 7,690             | 8,480      | 8,300                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | L80              | 6,290                         | 397                       | --   | 338        | 428        | 7,740               | --             | 7,740              | 7,740                | 7,690             | 8,480      | 8,300                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | L80 HC           | 7,200                         | 397                       | --   | 338        | 428        | 7,740               | --             | 7,740              | 7,740                | 7,690             | 8,480      | 8,300                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | L80 HP           | 7,680                         | 422                       | --   | 338        | 433        | 8,220               | --             | 8,220              | 8,220                | 8,170             | 9,010      | 8,300                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | N80n             | 6,290                         | 397                       | --   | 348        | 446        | 7,740               | --             | 7,740              | 7,740                | 7,690             | 8,480      | 7,230                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | N80              | 6,290                         | 397                       | --   | 348        | 446        | 7,740               | --             | 7,740              | 7,740                | 7,690             | 8,480      | 8,740                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | N80 HC           | 7,470                         | 397                       | --   | 348        | 446        | 7,740               | --             | 7,740              | 7,740                | 7,690             | 8,480      | 8,740                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | N80 HP           | 8,120                         | 471                       | --   | 374        | 480        | 9,190               | --             | 9,190              | 8,990                | 9,130             | 10,070     | 9,240                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | C90              | 6,740                         | 447                       | --   | 356        | 456        | 8,710               | --             | 8,710              | 8,710                | 8,650             | 9,540      | 9,700                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | USS C90          | 6,740                         | 447                       | --   | 356        | 456        | 8,710               | --             | 8,710              | 8,710                | 8,650             | 9,540      | 9,700                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | C95              | 6,940                         | 471                       | --   | 374        | 480        | 9,190               | --             | 9,190              | 9,190                | 9,130             | 10,070     | 9,240                | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | T95              | 6,940                         | 471                       | --   | 374        | 480        | 9,190               | --             | 9,190              | 9,190                | 9,130             | 10,070     | 10,210               | 6.050                      | 5.875                   |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | USS C95          | 6,940                         | 471                       | --   | 374        | 480        | 9,190               | --             | 9,190              | 9,190                | 9,130             | 10,070     | 10,210               | 6.050                      | 5.875                   |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse Resistance<br>psi | TENSION                   |  |            |            | Internal Yield      |                |                    |                      |                   | Ductile Rupture<br>Capped | Outside Diameter |            |            |                            |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|----------------------------|---------------------------|--|------------|------------|---------------------|----------------|--------------------|----------------------|-------------------|---------------------------|------------------|------------|------------|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                            | Joint Strength, 1,000 lbs |  |            |            | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |                           | End<br>psi       | End<br>psi | End<br>psi | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                            | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC<br>psi | LTC<br>psi |                     | BTC<br>psi     | Open<br>End<br>psi | Capped<br>End<br>psi |                   |                           |                  |            |            |                            |                                |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | USS C100         | 7,140                      | 496                       | --   | 392        | 503        | 9,670               | --             | 9,670              | 9,670                | 9,620             | 10,600                    | 10,730           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | C110             | 7,480                      | 546                       | --   | --         | --         | 10,640              | --             | --                 | --                   | 10,580            | 11,660                    | 11,760           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | P110 SR16        | 7,480                      | 546                       | --   | 445        | 568        | 10,640              | --             | 10,640             | 10,640               | 10,580            | 11,660                    | 11,090           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | P110             | 7,480                      | 546                       | --   | 445        | 568        | 10,640              | --             | 10,640             | 10,640               | 10,580            | 11,660                    | 12,250           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | P110 HC          | 8,730                      | 546                       | --   | 445        | 568        | 10,640              | --             | 10,640             | 10,640               | 10,580            | 11,660                    | 12,250           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | P110 HP          | 9,440                      | 620                       | --   | 463        | 601        | 12,090              | --             | 12,090             | 12,090               | 12,020            | 13,260                    | 12,840           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | Q125             | 7,890                      | 620                       | --   | 481        | 620        | 12,090              | --             | 12,090             | 12,090               | 12,020            | 13,260                    | 13,330           | 6.050      | --         |                            |                                |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | Q125 HC          | 9,050                      | 620                       | --   | 481        | 620        | 12,090              | --             | 12,090             | 12,090               | 12,020            | 13,260                    | 13,330           | 6.050      | --         |                            |                                |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | Q125 HP          | 9,780                      | 670                       | --   | 498        | 648        | 13,060              | --             | 13,060             | 13,060               | 12,980            | 14,320                    | 13,890           | 6.050      | --         |                            |                                |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | USS140           | 8,180                      | 695                       | --   | 534        | 690        | 13,540              | --             | 13,540             | 13,540               | 13,460            | 14,850                    | 14,920           | 6.050      | --         |                            |                                |
| 5 1/2                           | 17.00        | 16.89        | 0.304              | 4.892             | 4.767               | --                        | USS V150         | 8,290                      | 744                       | --   | 570        | 736        | 14,510              | --             | 14,510             | 14,510               | 14,420            | 15,910                    | 16,000           | 6.050      | --         |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | USS GT80S        | 8,830                      | 466                       | --   | 416        | 503        | 9,190               | --             | 9,190              | 8,990                | 9,120             | 9,980                     | 9,940            | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | L80              | 8,830                      | 466                       | --   | 416        | 503        | 9,190               | --             | 9,190              | 8,990                | 9,120             | 9,980                     | 9,940            | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | L80 HC           | 9,490                      | 466                       | --   | 416        | 503        | 9,190               | --             | 9,190              | 8,990                | 9,120             | 9,980                     | 9,940            | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | L80 HP           | 10,020                     | 495                       | --   | 416        | 509        | 9,770               | --             | 9,770              | 8,990                | 9,690             | 10,600                    | 9,940            | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | N80n             | 8,830                      | 466                       | --   | 428        | 524        | 9,190               | --             | 9,190              | 8,990                | 9,120             | 9,980                     | 8,650            | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | N80              | 8,830                      | 466                       | --   | 428        | 524        | 9,190               | --             | 9,190              | 8,990                | 9,120             | 9,980                     | 10,470           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | N80 HC           | 9,920                      | 466                       | --   | 428        | 524        | 9,190               | --             | 9,190              | 8,990                | 9,120             | 9,980                     | 10,470           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | N80 HP           | 10,790                     | 554                       | --   | 460        | 563        | 10,920              | --             | 9,880              | 8,990                | 10,830            | 11,850                    | 11,070           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | C90              | 9,630                      | 525                       | --   | 438        | 536        | 10,340              | --             | 10,340             | 10,120               | 10,260            | 11,230                    | 11,630           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | USS C90          | 9,630                      | 525                       | --   | 438        | 536        | 10,340              | --             | 10,340             | 10,120               | 10,260            | 11,230                    | 11,630           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | C95              | 10,020                     | 554                       | --   | 460        | 563        | 10,920              | --             | 10,920             | 10,680               | 10,830            | 11,850                    | 11,070           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | T95              | 10,020                     | 554                       | --   | 460        | 563        | 10,920              | --             | 10,920             | 10,680               | 10,830            | 11,850                    | 12,240           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | USS C95          | 10,020                     | 554                       | --   | 460        | 563        | 10,920              | --             | 10,920             | 10,680               | 10,830            | 11,850                    | 12,240           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | USS C100         | 10,390                     | 583                       | --   | 482        | 591        | 11,490              | --             | 11,490             | 11,240               | 11,390            | 12,470                    | 12,860           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | C110             | 11,100                     | 641                       | --   | --         | --         | 12,640              | --             | --                 | --                   | 12,530            | 13,720                    | 14,100           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | P110 SR16        | 11,100                     | 641                       | --   | 548        | 667        | 12,640              | --             | 12,640             | 12,360               | 12,530            | 13,720                    | 13,280           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | P110             | 11,100                     | 641                       | --   | 548        | 667        | 12,640              | --             | 12,640             | 12,360               | 12,530            | 13,720                    | 14,690           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | P110 HC          | 12,200                     | 641                       | --   | 548        | 667        | 12,640              | --             | 12,640             | 12,360               | 12,530            | 13,720                    | 14,690           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | P110 HP          | 13,150                     | 729                       | --   | 570        | 706        | 14,360              | --             | 13,580             | 12,360               | 14,240            | 15,590                    | 15,390           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | Q125             | 12,080                     | 729                       | --   | 592        | 728        | 14,360              | --             | 14,360             | 14,050               | 14,240            | 15,590                    | 15,980           | 6.050      | --         |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | Q125 HC          | 12,830                     | 729                       | --   | 592        | 728        | 14,360              | --             | 14,360             | 14,050               | 14,240            | 15,590                    | 15,980           | 6.050      | --         |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | Q125 HP          | 13,820                     | 787                       | --   | 614        | 761        | 15,510              | --             | 15,430             | 14,050               | 15,380            | 16,840                    | 16,650           | 6.050      | --         |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | USS140           | 12,950                     | 816                       | --   | 657        | 810        | 16,090              | --             | 16,090             | 15,740               | 15,950            | 17,460                    | 17,890           | 6.050      | --         |                            |                                |
| 5 1/2                           | 20.00        | 19.83        | 0.361              | 4.778             | 4.653               | --                        | USS V150         | 13,460                     | 874                       | --   | 701        | 865        | 17,240              | --             | 17,240             | 16,860               | 17,090            | 18,710                    | 19,180           | 6.050      | --         |                            |                                |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | USS GT80S        | 11,160                     | 530                       | --   | 489        | 550        | 10,560              | --             | 9,880              | 8,990                | 10,440            | 11,370                    | 11,510           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | L80              | 11,160                     | 530                       | --   | 489        | 550        | 10,560              | --             | 9,880              | 8,990                | 10,440            | 11,370                    | 11,510           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | L80 HC           | 11,530                     | 530                       | --   | 489        | 550        | 10,560              | --             | 9,880              | 8,990                | 10,440            | 11,370                    | 11,510           | 6.050      | 5.875      |                            |                                |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | L80 HP           | 12,110                     | 564                       | --   | 489        | 550        | 11,220              | --             | 9,880              | 8,990                | 11,100            | 12,080                    | 11,510           | 6.050      | 5.875      |                            |                                |



| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |       |     | Internal Yield      |   |        |                    |                      |            | Ductile<br>Rupture<br>Capped | Outside Diameter |            |                 |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-----|---------------------|---|--------|--------------------|----------------------|------------|------------------------------|------------------|------------|-----------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |       |     | API Historical      |   |        | Lame' - Von Mises  |                      | End<br>psi |                              | End<br>psi       | End<br>psi | Regular         |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |       |     | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC psi LTC psi BTC psi |        | Open<br>End<br>psi | Capped<br>End<br>psi |            | Coupling<br>in.              |                  |            | Coupling<br>in. |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | N80n             | 11,160                        | 530                       | --   | 502   | 579 | 10,560              | --  | 9,880  | 8,990              | 10,440               | 11,370     | 10,000                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | N80              | 11,160                        | 530                       | --   | 502   | 579 | 10,560              | --  | 9,880  | 8,990              | 10,440               | 11,370     | 12,120                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | N80 HC           | 12,110                        | 530                       | --   | 502   | 579 | 10,560              | --  | 9,880  | 8,990              | 10,440               | 11,370     | 12,120                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | N80 HP           | 13,160                        | 630                       | --   | 540   | 579 | 12,540              | --  | 9,880  | 8,990              | 12,400               | 13,500     | 12,820                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | C90              | 12,380                        | 597                       | --   | 514   | 579 | 11,880              | --  | 11,110 | 10,120             | 11,750               | 12,790     | 13,480                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | USS C90          | 12,380                        | 597                       | --   | 514   | 579 | 11,880              | --  | 11,110 | 10,120             | 11,750               | 12,790     | 13,480                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | C95              | 12,930                        | 630                       | --   | 540   | 608 | 12,540              | --  | 11,730 | 10,680             | 12,400               | 13,500     | 12,820                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | T95              | 12,930                        | 630                       | --   | 540   | 608 | 12,540              | --  | 11,730 | 10,680             | 12,400               | 13,500     | 14,180                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | USS C95          | 12,930                        | 630                       | --   | 540   | 608 | 12,540              | --  | 11,730 | 10,680             | 12,400               | 13,500     | 14,180                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | USS C100         | 13,480                        | 663                       | --   | 566   | 637 | 13,200              | --  | 12,350 | 11,240             | 13,050               | 14,210     | 14,900                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | C110             | 14,540                        | 729                       | --   | --    | --  | 14,520              | --  | --     | --                 | 14,360               | 15,630     | 16,330                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | P110 SR16        | 14,540                        | 729                       | --   | 643   | 724 | 14,520              | --  | 13,580 | 12,360             | 14,360               | 15,630     | 15,370                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | P110             | 14,540                        | 729                       | --   | 643   | 724 | 14,520              | --  | 13,580 | 12,360             | 14,360               | 15,630     | 17,010                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | P110 HC          | 15,310                        | 729                       | --   | 643   | 724 | 14,520              | --  | 13,580 | 12,360             | 14,360               | 15,630     | 17,010                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | P110 HP          | 16,470                        | 829                       | --   | 669   | 724 | 16,500              | --  | 13,580 | 12,360             | 16,320               | 17,760     | 17,830                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | Q125             | 16,060                        | 829                       | --   | 694   | 782 | 16,500              | --  | 15,430 | 14,050             | 16,320               | 17,760     | 18,510                       | 6.050            | --         |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | Q125 HC          | 16,270                        | 829                       | --   | 694   | 782 | 16,500              | --  | 15,430 | 14,050             | 16,320               | 17,760     | 18,510                       | 6.050            | --         |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | Q125 HP          | 17,470                        | 895                       | --   | 720   | 782 | 17,820              | --  | 15,430 | 14,050             | 17,620               | 19,180     | 19,290                       | 6.050            | --         |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | USS140           | 17,500                        | 928                       | --   | 771   | 869 | 18,480              | --  | 17,290 | 15,740             | 18,280               | 19,890     | 20,720                       | 6.050            | --         |                 |
| 5 1/2                           | 23.00        | 22.56        | 0.415              | 4.670             | 4.545               | --                        | USS V150         | 18,390                        | 995                       | --   | 823   | 927 | 19,800              | --  | 18,520 | 16,860             | 19,580               | 21,310     | 22,220                       | 6.050            | --         |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | C90              | 14,880                        | 707                       | --   | --    | --  | 14,330              | --  | --     | --                 | 14,100               | 15,190     | 16,490                       | --               | --         |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | USS C90          | 14,880                        | 707                       | --   | --    | --  | 14,330              | --  | --     | --                 | 14,100               | 15,190     | 16,490                       | --               | --         |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | T95              | 15,700                        | 746                       | --   | --    | --  | 15,130              | --  | --     | --                 | 14,890               | 16,030     | 17,350                       | --               | --         |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | USS C95          | 15,700                        | 746                       | --   | --    | --  | 15,130              | --  | --     | --                 | 14,890               | 16,030     | 17,350                       | --               | --         |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | USS C100         | 16,530                        | 785                       | --   | --    | --  | 15,930              | --  | --     | --                 | 15,670               | 16,870     | 18,230                       | --               | --         |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | C110             | 18,180                        | 864                       | --   | --    | --  | 17,520              | --  | --     | --                 | 17,240               | 18,560     | 19,980                       | --               | --         |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | P110 SR16        | 18,180                        | 864                       | --   | 788   | 724 | 17,520              | --  | 13,580 | 12,360             | 17,240               | 18,560     | 18,790                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | P110             | 18,180                        | 864                       | --   | 788   | 724 | 17,520              | --  | 13,580 | 12,360             | 17,240               | 18,560     | 20,820                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | P110 HC          | 19,890                        | 864                       | --   | 788   | 724 | 17,520              | --  | 13,580 | 12,360             | 17,240               | 18,560     | 20,820                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | P110 HP          | 21,370                        | 982                       | --   | 791   | 724 | 19,910              | --  | 13,580 | 12,360             | 19,590               | 21,090     | 21,810                       | 6.050            | 5.875      |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | Q125             | 20,660                        | 982                       | --   | 851   | 782 | 19,910              | --  | 15,430 | 14,050             | 19,590               | 21,090     | 22,650                       | 6.050            | --         |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | Q125 HC          | 21,320                        | 982                       | --   | 851   | 782 | 19,910              | --  | 15,430 | 14,050             | 19,590               | 21,090     | 22,650                       | 6.050            | --         |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | Q125 HP          | 22,850                        | 1,060                     | --   | 854   | 782 | 21,500              | --  | 15,430 | 14,050             | 21,160               | 22,780     | 23,610                       | 6.050            | --         |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | USS140           | 23,140                        | 1,100                     | --   | 946   | 869 | 22,300              | --  | 17,290 | 15,740             | 21,940               | 23,620     | 25,360                       | 6.050            | --         |                 |
| 5 1/2                           | 26.80        | 26.73        | 0.500              | 4.500             | 4.375               | --                        | USS V150         | 24,790                        | 1,178                     | --   | 1,009 | 927 | 23,890              | --  | 18,520 | 16,860             | 23,510               | 25,310     | 27,180                       | 6.050            | --         |                 |
| 5 1/2                           | 29.70        | 29.67        | 0.562              | 4.376             | 4.251               | --                        | C90              | 16,510                        | 785                       | --   | --    | --  | 16,100              | --  | --     | --                 | 15,780               | 16,890     | 18,710                       | --               | --         |                 |
| 5 1/2                           | 29.70        | 29.67        | 0.562              | 4.376             | 4.251               | --                        | USS C90          | 16,510                        | 785                       | --   | --    | --  | 16,100              | --  | --     | --                 | 15,780               | 16,890     | 18,710                       | --               | --         |                 |
| 5 1/2                           | 29.70        | 29.67        | 0.562              | 4.376             | 4.251               | --                        | T95              | 17,430                        | 828                       | --   | --    | --  | 17,000              | --  | --     | --                 | 16,650               | 17,820     | 19,690                       | --               | --         |                 |
| 5 1/2                           | 29.70        | 29.67        | 0.562              | 4.376             | 4.251               | --                        | USS C95          | 17,430                        | 828                       | --   | --    | --  | 17,000              | --  | --     | --                 | 16,650               | 17,820     | 19,690                       | --               | --         |                 |

| Dimensional & Grade Designators |        |       |       |       |       |           |                  | Collapse<br>Resistance<br>psi | TENSION                   |                      |       |                  |        | Internal Yield     |        |        |                   |        | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |
|---------------------------------|--------|-------|-------|-------|-------|-----------|------------------|-------------------------------|---------------------------|----------------------|-------|------------------|--------|--------------------|--------|--------|-------------------|--------|--|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight |       | NOM   | NOM   | API   | Alternate | Product<br>Grade |                               | Joint Strength, 1,000 lbs |                      |       |                  |        | API Historical     |        |        | Lame' - Von Mises |        |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C    | P E   | Wall  | ID    | Drift | Drift     |                  |                               | Yield                     | Threaded and Coupled |       |                  | Pipe   | Threaded & Coupled |        |        | Open              | Capped |  |                            |                                |
|                                 | lb/ft  | lb/ft | in.   | in.   | in.   | in.       |                  |                               | Pipe Body                 | STC                  | LTC   | BTC <sup>a</sup> | Body   | STC                | LTC    | BTC    | End               | End    | End  |                            |                                |
| 5 1/2                           | 29.70  | 29.67 | 0.562 | 4.376 | 4.251 | --        | USS C100         | 18,340                        | 872                       | --                   | --    | --               | 17,890 | --                 | --     | --     | 17,530            | 18,760 | 20,680                                     | --                         | --                             |
| 5 1/2                           | 29.70  | 29.67 | 0.562 | 4.376 | 4.251 | --        | C110             | 20,180                        | 959                       | --                   | --    | --               | 19,680 | --                 | --     | --     | 19,280            | 20,640 | 22,670                                     | --                         | --                             |
| 5 1/2                           | 29.70  | 29.67 | 0.562 | 4.376 | 4.251 | --        | P110 SR16        | 20,180                        | 959                       | --                   | 791   | 724              | 19,680 | --                 | 13,580 | 12,360 | 19,280            | 20,640 | 21,290                                     | 6.050                      | 5.875                          |
| 5 1/2                           | 29.70  | 29.67 | 0.562 | 4.376 | 4.251 | --        | P110             | 20,180                        | 959                       | --                   | 791   | 724              | 19,680 | --                 | 13,580 | 12,360 | 19,280            | 20,640 | 23,620                                     | 6.050                      | 5.875                          |
| 5 1/2                           | 29.70  | 29.67 | 0.562 | 4.376 | 4.251 | --        | P110 HC          | 23,090                        | 959                       | --                   | 791   | 724              | 19,680 | --                 | 13,580 | 12,360 | 19,280            | 20,640 | 23,620                                     | 6.050                      | 5.875                          |
| 5 1/2                           | 29.70  | 29.67 | 0.562 | 4.376 | 4.251 | --        | P110 HP          | 24,800                        | 1,090                     | --                   | 791   | 724              | 22,360 | --                 | 13,580 | 12,360 | 21,910            | 23,450 | 24,750                                     | 6.050                      | 5.875                          |
| 5 1/2                           | 29.70  | 29.67 | 0.562 | 4.376 | 4.251 | --        | Q125             | 22,930                        | 1,090                     | --                   | 854   | 782              | 22,360 | --                 | 15,430 | 14,050 | 21,910            | 23,450 | 25,700                                     | 6.050                      | --                             |
| 5 1/2                           | 29.70  | 29.67 | 0.562 | 4.376 | 4.251 | --        | Q125 HC          | 24,830                        | 1,090                     | --                   | 854   | 782              | 22,360 | --                 | 15,430 | 14,050 | 21,910            | 23,450 | 25,700                                     | 6.050                      | --                             |
| 5 1/2                           | 29.70  | 29.67 | 0.562 | 4.376 | 4.251 | --        | Q125 HP          | 26,600                        | 1,177                     | --                   | 854   | 782              | 24,150 | --                 | 15,430 | 14,050 | 23,660            | 25,330 | 26,780                                     | 6.050                      | --                             |
| 5 1/2                           | 29.70  | 29.67 | 0.562 | 4.376 | 4.251 | --        | USS140           | 25,680                        | 1,221                     | --                   | 949   | 869              | 25,050 | --                 | 17,290 | 15,740 | 24,540            | 26,270 | 28,770                                     | 6.050                      | --                             |
| 5 1/2                           | 29.70  | 29.67 | 0.562 | 4.376 | 4.251 | --        | USS V150         | 27,510                        | 1,308                     | --                   | 1,012 | 927              | 26,840 | --                 | 18,520 | 16,860 | 26,290            | 28,140 | 30,840                                     | 6.050                      | --                             |
| 5 1/2                           | 32.60  | 32.57 | 0.625 | 4.250 | 4.125 | --        | C90              | 18,130                        | 861                       | --                   | --    | --               | 17,900 | --                 | --     | --     | 17,460            | 18,570 | 21,010                                     | --                         | --                             |
| 5 1/2                           | 32.60  | 32.57 | 0.625 | 4.250 | 4.125 | --        | USS C90          | 18,130                        | 861                       | --                   | --    | --               | 17,900 | --                 | --     | --     | 17,460            | 18,570 | 21,010                                     | --                         | --                             |
| 5 1/2                           | 32.60  | 32.57 | 0.625 | 4.250 | 4.125 | --        | T95              | 19,140                        | 909                       | --                   | --    | --               | 18,900 | --                 | --     | --     | 18,430            | 19,610 | 22,120                                     | --                         | --                             |
| 5 1/2                           | 32.60  | 32.57 | 0.625 | 4.250 | 4.125 | --        | USS C95          | 19,140                        | 909                       | --                   | --    | --               | 18,900 | --                 | --     | --     | 18,430            | 19,610 | 22,120                                     | --                         | --                             |
| 5 1/2                           | 32.60  | 32.57 | 0.625 | 4.250 | 4.125 | --        | USS C100         | 20,140                        | 957                       | --                   | --    | --               | 19,890 | --                 | --     | --     | 19,400            | 20,640 | 23,230                                     | --                         | --                             |
| 5 1/2                           | 32.60  | 32.57 | 0.625 | 4.250 | 4.125 | --        | C110             | 22,160                        | 1,053                     | --                   | --    | --               | 21,880 | --                 | --     | --     | 21,330            | 22,700 | 25,470                                     | --                         | --                             |
| 5 1/2                           | 35.30  | 35.35 | 0.687 | 4.126 | 4.001 | --        | C90              | 19,680                        | 935                       | --                   | --    | --               | 19,670 | --                 | --     | --     | 19,080            | 20,190 | 23,330                                     | --                         | --                             |
| 5 1/2                           | 35.30  | 35.35 | 0.687 | 4.126 | 4.001 | --        | USS C90          | 19,680                        | 935                       | --                   | --    | --               | 19,670 | --                 | --     | --     | 19,080            | 20,190 | 23,330                                     | --                         | --                             |
| 5 1/2                           | 35.30  | 35.35 | 0.687 | 4.126 | 4.001 | --        | T95              | 20,770                        | 987                       | --                   | --    | --               | 20,760 | --                 | --     | --     | 20,140            | 21,320 | 24,550                                     | --                         | --                             |
| 5 1/2                           | 35.30  | 35.35 | 0.687 | 4.126 | 4.001 | --        | USS C95          | 20,770                        | 987                       | --                   | --    | --               | 20,760 | --                 | --     | --     | 20,140            | 21,320 | 24,550                                     | --                         | --                             |
| 5 1/2                           | 35.30  | 35.35 | 0.687 | 4.126 | 4.001 | --        | USS C100         | 21,850                        | 1,039                     | --                   | --    | --               | 21,850 | --                 | --     | --     | 21,200            | 22,440 | 25,790                                     | --                         | --                             |
| 5 1/2                           | 35.30  | 35.35 | 0.687 | 4.126 | 4.001 | --        | C110             | 24,040                        | 1,143                     | --                   | --    | --               | 24,040 | --                 | --     | --     | 23,320            | 24,680 | 28,270                                     | --                         | --                             |
| 5 1/2                           | 38.00  | 38.08 | 0.750 | 4.000 | 3.875 | --        | C90              | 21,200                        | 1,007                     | --                   | --    | --               | 21,470 | --                 | --     | --     | 20,700            | 21,800 | 25,730                                     | --                         | --                             |
| 5 1/2                           | 38.00  | 38.08 | 0.750 | 4.000 | 3.875 | --        | USS C90          | 21,200                        | 1,007                     | --                   | --    | --               | 21,470 | --                 | --     | --     | 20,700            | 21,800 | 25,730                                     | --                         | --                             |
| 5 1/2                           | 38.00  | 38.08 | 0.750 | 4.000 | 3.875 | --        | T95              | 22,380                        | 1,063                     | --                   | --    | --               | 22,660 | --                 | --     | --     | 21,850            | 23,010 | 27,080                                     | --                         | --                             |
| 5 1/2                           | 38.00  | 38.08 | 0.750 | 4.000 | 3.875 | --        | USS C95          | 22,380                        | 1,063                     | --                   | --    | --               | 22,660 | --                 | --     | --     | 21,850            | 23,010 | 27,080                                     | --                         | --                             |
| 5 1/2                           | 38.00  | 38.08 | 0.750 | 4.000 | 3.875 | --        | USS C100         | 23,560                        | 1,119                     | --                   | --    | --               | 23,850 | --                 | --     | --     | 23,000            | 24,220 | 28,440                                     | --                         | --                             |
| 5 1/2                           | 38.00  | 38.08 | 0.750 | 4.000 | 3.875 | --        | C110             | 25,920                        | 1,231                     | --                   | --    | --               | 26,240 | --                 | --     | --     | 25,310            | 26,640 | 31,190                                     | --                         | --                             |
| 5 1/2                           | 40.50  | 40.69 | 0.812 | 3.876 | 3.751 | --        | C90              | 22,650                        | 1,076                     | --                   | --    | --               | 23,270 | --                 | --     | --     | 22,300            | 23,340 | 28,190                                     | --                         | --                             |
| 5 1/2                           | 40.50  | 40.69 | 0.812 | 3.876 | 3.751 | --        | USS C90          | 22,650                        | 1,076                     | --                   | --    | --               | 23,270 | --                 | --     | --     | 22,300            | 23,340 | 28,190                                     | --                         | --                             |
| 5 1/2                           | 40.50  | 40.69 | 0.812 | 3.876 | 3.751 | --        | T95              | 23,910                        | 1,136                     | --                   | --    | --               | 24,560 | --                 | --     | --     | 23,540            | 24,630 | 29,670                                     | --                         | --                             |
| 5 1/2                           | 40.50  | 40.69 | 0.812 | 3.876 | 3.751 | --        | USS C95          | 23,910                        | 1,136                     | --                   | --    | --               | 24,560 | --                 | --     | --     | 23,540            | 24,630 | 29,670                                     | --                         | --                             |
| 5 1/2                           | 40.50  | 40.69 | 0.812 | 3.876 | 3.751 | --        | USS C100         | 25,180                        | 1,196                     | --                   | --    | --               | 25,850 | --                 | --     | --     | 24,780            | 25,930 | 31,160                                     | --                         | --                             |
| 5 1/2                           | 40.50  | 40.69 | 0.812 | 3.876 | 3.751 | --        | C110             | 27,700                        | 1,315                     | --                   | --    | --               | 28,440 | --                 | --     | --     | 27,250            | 28,520 | 34,170                                     | --                         | --                             |
| 5 1/2                           | 43.10  | 43.26 | 0.875 | 3.750 | 3.625 | --        | C90              | 24,080                        | 1,144                     | --                   | --    | --               | 25,070 | --                 | --     | --     | 23,860            | 24,860 | 30,700                                     | --                         | --                             |
| 5 1/2                           | 43.10  | 43.26 | 0.875 | 3.750 | 3.625 | --        | USS C90          | 24,080                        | 1,144                     | --                   | --    | --               | 25,070 | --                 | --     | --     | 23,860            | 24,860 | 30,700                                     | --                         | --                             |
| 5 1/2                           | 43.10  | 43.26 | 0.875 | 3.750 | 3.625 | --        | T95              | 25,420                        | 1,208                     | --                   | --    | --               | 26,460 | --                 | --     | --     | 25,190            | 26,240 | 32,310                                     | --                         | --                             |
| 5 1/2                           | 43.10  | 43.26 | 0.875 | 3.750 | 3.625 | --        | USS C95          | 25,420                        | 1,208                     | --                   | --    | --               | 26,460 | --                 | --     | --     | 25,190            | 26,240 | 32,310                                     | --                         | --                             |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |     |       | Internal Yield      |                |            |            |                    |                      | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-----|-------|---------------------|----------------|------------|------------|--------------------|----------------------|--|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |     |       | Pipe<br>Body<br>psi | API Historical |            |            | Lame' - Von Mises  |                      |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |     |       |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi | Capped<br>End<br>psi |  |                            |                                |
| 5 1/2                           | 43.10        | 43.26        | 0.875              | 3.750             | 3.625               | --                        | USS C100         | 26,740                        | 1,271                     | --   | --  | --    | 27,850              | --             | --         | --         | 26,510             | 27,620               | 33,940                                     | --                         | --                             |
| 5 1/2                           | 43.10        | 43.26        | 0.875              | 3.750             | 3.625               | --                        | C110             | 29,420                        | 1,399                     | --   | --  | --    | 30,640              | --             | --         | --         | 29,160             | 30,390               | 37,210                                     | --                         | --                             |
| 6 5/8                           | 20.00        | 19.51        | 0.288              | 6.049             | 5.924               | --                        | H40              | 2,520                         | 229                       | 184  | --  | --    | 3,040               | 3,040          | --         | --         | 3,030              | 3,370                | 3,320                                      | 7.390                      | --                             |
| 6 5/8                           | 20.00        | 19.51        | 0.288              | 6.049             | 5.924               | --                        | J55              | 2,970                         | 315                       | 245  | 266 | 374   | 4,180               | 4,180          | 4,180      | 4,180      | 4,170              | 4,640                | 4,180                                      | 7.390                      | 7                              |
| 6 5/8                           | 20.00        | 19.51        | 0.288              | 6.049             | 5.924               | --                        | K55              | 2,970                         | 315                       | 267  | 290 | 453   | 4,180               | 4,180          | 4,180      | 4,180      | 4,170              | 4,640                | 5,290                                      | 7.390                      | 7                              |
| 6 5/8                           | 20.00        | 19.51        | 0.288              | 6.049             | 5.924               | --                        | USS FS80         | 4,430                         | 430                       | 326  | 353 | 482   | 5,710               | 5,710          | 5,710      | 5,710      | 5,680              | 6,320                | 6,450                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | J55              | 4,560                         | 382                       | 314  | 340 | 453   | 5,110               | 5,110          | 5,110      | 5,110      | 5,090              | 5,620                | 5,140                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | K55              | 4,560                         | 382                       | 342  | 372 | 548   | 5,110               | 5,110          | 5,110      | 5,110      | 5,090              | 5,620                | 6,510                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | USS FS80         | 6,710                         | 520                       | 417  | 453 | 583   | 6,970               | 6,970          | 6,970      | 6,970      | 6,940              | 7,660                | 7,950                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | USS GT80S        | 5,760                         | 555                       | --   | 473 | 592   | 7,440               | --             | 7,440      | 7,440      | 7,400              | 8,170                | 7,970                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | L80              | 5,760                         | 555                       | --   | 473 | 592   | 7,440               | --             | 7,440      | 7,440      | 7,400              | 8,170                | 7,970                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | L80 HC           | 6,710                         | 555                       | --   | 473 | 592   | 7,440               | --             | 7,440      | 7,440      | 7,400              | 8,170                | 7,970                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | L80 HP           | 7,170                         | 590                       | --   | 493 | 600   | 7,900               | --             | 7,900      | 7,900      | 7,860              | 8,680                | 7,970                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | N80n             | 5,760                         | 555                       | --   | 481 | 615   | 7,440               | --             | 7,440      | 7,440      | 7,400              | 8,170                | 6,940                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | N80              | 5,760                         | 555                       | --   | 481 | 615   | 7,440               | --             | 7,440      | 7,440      | 7,400              | 8,170                | 8,390                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | N80 HC           | 6,940                         | 555                       | --   | 481 | 615   | 7,440               | --             | 7,440      | 7,440      | 7,400              | 8,170                | 8,390                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | N80 HP           | 7,540                         | 659                       | --   | 546 | 665   | 8,830               | --             | 8,830      | 8,830      | 8,780              | 9,700                | 8,870                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | C90              | 6,140                         | 624                       | --   | 520 | 633   | 8,370               | --             | 8,370      | 8,370      | 8,320              | 9,190                | 9,310                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | USS C90          | 6,140                         | 624                       | --   | 520 | 633   | 8,370               | --             | 8,370      | 8,370      | 8,320              | 9,190                | 9,310                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | C95              | 6,310                         | 659                       | --   | 546 | 665   | 8,830               | --             | 8,830      | 8,830      | 8,780              | 9,700                | 8,870                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | T95              | 6,310                         | 659                       | --   | 546 | 665   | 8,830               | --             | 8,830      | 8,830      | 8,780              | 9,700                | 9,800                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | USS C95          | 6,310                         | 659                       | --   | 546 | 665   | 8,830               | --             | 8,830      | 8,830      | 8,780              | 9,700                | 9,800                                      | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | USS C100         | 6,460                         | 694                       | --   | 572 | 698   | 9,300               | --             | 9,300      | 9,300      | 9,250              | 10,210               | 10,290                                     | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | C110             | 6,730                         | 763                       | --   | --  | --    | 10,230              | --             | --         | --         | 10,170             | 11,230               | 11,280                                     | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | P110 SR16        | 6,730                         | 763                       | --   | 641 | 786   | 10,230              | --             | 10,230     | 10,230     | 10,170             | 11,230               | 10,640                                     | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | P110             | 6,730                         | 763                       | --   | 641 | 786   | 10,230              | --             | 10,230     | 10,230     | 10,170             | 11,230               | 11,750                                     | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | P110 HC          | 8,010                         | 763                       | --   | 641 | 786   | 10,230              | --             | 10,230     | 10,230     | 10,170             | 11,230               | 11,750                                     | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | P110 HP          | 8,670                         | 867                       | --   | 676 | 836   | 11,620              | --             | 11,620     | 11,620     | 11,560             | 12,770               | 12,320                                     | 7.390                      | 7                              |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | Q125             | 7,020                         | 867                       | --   | 702 | 860   | 11,620              | --             | 11,620     | 11,620     | 11,560             | 12,770               | 12,790                                     | 7.390                      | --                             |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | Q125 HC          | 8,270                         | 867                       | --   | 702 | 860   | 11,620              | --             | 11,620     | 11,620     | 11,560             | 12,770               | 12,790                                     | 7.390                      | --                             |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | Q125 HP          | 8,950                         | 936                       | --   | 728 | 901   | 12,550              | --             | 12,550     | 12,550     | 12,480             | 13,790               | 13,330                                     | 7.390                      | --                             |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | USS140           | 7,190                         | 971                       | --   | 779 | 958   | 13,020              | --             | 13,020     | 13,020     | 12,950             | 14,300               | 14,320                                     | 7.390                      | --                             |
| 6 5/8                           | 24.00        | 23.60        | 0.352              | 5.921             | 5.796               | --                        | USS V150         | 7,340                         | 1,041                     | --   | 831 | 1,023 | 13,950              | --             | 13,950     | 13,950     | 13,870             | 15,320               | 15,350                                     | 7.390                      | --                             |
| 6 5/8                           | 28.00        | 27.67        | 0.417              | 5.791             | 5.666               | --                        | USS GT80S        | 8,170                         | 651                       | --   | 576 | 693   | 8,820               | --             | 8,820      | 8,820      | 8,750              | 9,590                | 9,510                                      | 7.390                      | 7                              |
| 6 5/8                           | 28.00        | 27.67        | 0.417              | 5.791             | 5.666               | --                        | L80              | 8,170                         | 651                       | --   | 576 | 693   | 8,820               | --             | 8,820      | 8,820      | 8,750              | 9,590                | 9,510                                      | 7.390                      | 7                              |
| 6 5/8                           | 28.00        | 27.67        | 0.417              | 5.791             | 5.666               | --                        | L80 HC           | 8,910                         | 651                       | --   | 576 | 693   | 8,820               | --             | 8,820      | 8,820      | 8,750              | 9,590                | 9,510                                      | 7.390                      | 7                              |
| 6 5/8                           | 28.00        | 27.67        | 0.417              | 5.791             | 5.666               | --                        | L80 HP           | 9,430                         | 691                       | --   | 601 | 704   | 9,370               | --             | 9,370      | 9,370      | 9,290              | 10,190               | 9,510                                      | 7.390                      | 7                              |
| 6 5/8                           | 28.00        | 27.67        | 0.417              | 5.791             | 5.666               | --                        | N80n             | 8,170                         | 651                       | --   | 586 | 721   | 8,820               | --             | 8,820      | 8,820      | 8,750              | 9,590                | 8,280                                      | 7.390                      | 7                              |
| 6 5/8                           | 28.00        | 27.67        | 0.417              | 5.791             | 5.666               | --                        | N80              | 8,170                         | 651                       | --   | 586 | 721   | 8,820               | --             | 8,820      | 8,820      | 8,750              | 9,590                | 10,020                                     | 7.390                      | 7                              |

| Dimensional & Grade Designators |        |       |       |       |       |           |                  | Collapse<br>Resistance<br>psi | TENSION                   |                      |       |                  | Internal Yield |                    |        |        |        | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter |                            |                                |
|---------------------------------|--------|-------|-------|-------|-------|-----------|------------------|-------------------------------|---------------------------|----------------------|-------|------------------|----------------|--------------------|--------|--------|--------|--|------------------|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight |       | NOM   | NOM   | API   | Alternate | Product<br>Grade |                               | Joint Strength, 1,000 lbs |                      |       |                  | Pipe           | Threaded & Coupled |        |        | Open   |  | Capped           | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C    | P E   | Wall  | I D   | Drift | Drift     |                  |                               | Yield                     | Threaded and Coupled |       |                  | Body           | STC                | LTC    | BTC    | End    | End  |                  |                            |                                |
|                                 | lb/ft  | lb/ft | in.   | in.   | in.   | in.       |                  |                               | Pipe Body                 | STC                  | LTC   | BTC <sup>a</sup> | psi            | psi                | psi    | psi    | psi    | psi  |                  |                            |                                |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | N80 HC           | 9,300                         | 651                       | --                   | 586   | 721              | 8,820          | --                 | 8,820  | 8,820  | 8,750  | 9,590                                      | 10,020           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | N80 HP           | 10,110                        | 773                       | --                   | 665   | 780              | 10,470         | --                 | 10,470 | 9,820  | 10,390 | 11,390                                     | 10,600           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | C90              | 8,880                         | 732                       | --                   | 633   | 742              | 9,920          | --                 | 9,920  | 9,920  | 9,840  | 10,790                                     | 11,130           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | USS C90          | 8,880                         | 732                       | --                   | 633   | 742              | 9,920          | --                 | 9,920  | 9,920  | 9,840  | 10,790                                     | 11,130           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | C95              | 9,220                         | 773                       | --                   | 665   | 780              | 10,470         | --                 | 10,470 | 10,470 | 10,390 | 11,390                                     | 10,600           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | T95              | 9,220                         | 773                       | --                   | 665   | 780              | 10,470         | --                 | 10,470 | 10,470 | 10,390 | 11,390                                     | 11,710           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | USS C95          | 9,220                         | 773                       | --                   | 665   | 780              | 10,470         | --                 | 10,470 | 10,470 | 10,390 | 11,390                                     | 11,710           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | USS C100         | 9,540                         | 813                       | --                   | 697   | 818              | 11,020         | --                 | 11,020 | 11,020 | 10,930 | 11,990                                     | 12,300           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | C110             | 10,160                        | 895                       | --                   | --    | --               | 12,120         | --                 | --     | --     | 12,030 | 13,190                                     | 13,490           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | P110 SR16        | 10,160                        | 895                       | --                   | 781   | 922              | 12,120         | --                 | 12,120 | 12,120 | 12,030 | 13,190                                     | 12,710           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | P110             | 10,160                        | 895                       | --                   | 781   | 922              | 12,120         | --                 | 12,120 | 12,120 | 12,030 | 13,190                                     | 14,050           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | P110 HC          | 11,310                        | 895                       | --                   | 781   | 922              | 12,120         | --                 | 12,120 | 12,120 | 12,030 | 13,190                                     | 14,050           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | P110 HP          | 12,200                        | 1,017                     | --                   | 823   | 980              | 13,770         | --                 | 13,770 | 13,500 | 13,670 | 14,990                                     | 14,720           | 7.390                      | 7                              |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | Q125             | 10,990                        | 1,017                     | --                   | 855   | 1,008            | 13,770         | --                 | 13,770 | 13,770 | 13,670 | 14,990                                     | 15,290           | 7.390                      | --                             |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | Q125 HC          | 11,860                        | 1,017                     | --                   | 855   | 1,008            | 13,770         | --                 | 13,770 | 13,770 | 13,670 | 14,990                                     | 15,290           | 7.390                      | --                             |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | Q125 HP          | 12,780                        | 1,098                     | --                   | 887   | 1,057            | 14,880         | --                 | 14,880 | 14,880 | 14,760 | 16,190                                     | 15,930           | 7.390                      | --                             |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | USS140           | 11,710                        | 1,139                     | --                   | 950   | 1,123            | 15,430         | --                 | 15,430 | 15,430 | 15,310 | 16,790                                     | 17,110           | 7.390                      | --                             |
| 6 5/8                           | 28.00  | 27.67 | 0.417 | 5.791 | 5.666 | --        | USS V150         | 12,120                        | 1,220                     | --                   | 1,013 | 1,199            | 16,530         | --                 | 16,530 | 16,530 | 16,400 | 17,990                                     | 18,350           | 7.390                      | --                             |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | USS GT80S        | 10,320                        | 734                       | --                   | 666   | 783              | 10,050         | --                 | 10,050 | 9,820  | 9,950  | 10,840                                     | 10,920           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | L80              | 10,320                        | 734                       | --                   | 666   | 783              | 10,050         | --                 | 10,050 | 9,820  | 9,950  | 10,840                                     | 10,920           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | L80 HC           | 10,760                        | 734                       | --                   | 666   | 783              | 10,050         | --                 | 10,050 | 9,820  | 9,950  | 10,840                                     | 10,920           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | L80 HP           | 11,320                        | 780                       | --                   | 695   | 794              | 10,670         | --                 | 10,670 | 9,820  | 10,570 | 11,520                                     | 10,920           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | N80n             | 10,320                        | 734                       | --                   | 677   | 814              | 10,050         | --                 | 10,050 | 9,820  | 9,950  | 10,840                                     | 9,490            | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | N80              | 10,320                        | 734                       | --                   | 677   | 814              | 10,050         | --                 | 10,050 | 9,820  | 9,950  | 10,840                                     | 11,500           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | N80 HC           | 11,280                        | 734                       | --                   | 677   | 814              | 10,050         | --                 | 10,050 | 9,820  | 9,950  | 10,840                                     | 11,500           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | N80 HP           | 12,270                        | 872                       | --                   | 769   | 880              | 11,930         | --                 | 10,670 | 9,820  | 11,810 | 12,870                                     | 12,160           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | C90              | 11,330                        | 826                       | --                   | 732   | 837              | 11,300         | --                 | 11,300 | 11,050 | 11,190 | 12,190                                     | 12,780           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | USS C90          | 11,330                        | 826                       | --                   | 732   | 837              | 11,300         | --                 | 11,300 | 11,050 | 11,190 | 12,190                                     | 12,780           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | C95              | 11,820                        | 872                       | --                   | 769   | 880              | 11,930         | --                 | 11,930 | 11,660 | 11,810 | 12,870                                     | 12,160           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | T95              | 11,820                        | 872                       | --                   | 769   | 880              | 11,930         | --                 | 11,930 | 11,660 | 11,810 | 12,870                                     | 13,450           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | USS C95          | 11,820                        | 872                       | --                   | 769   | 880              | 11,930         | --                 | 11,930 | 11,660 | 11,810 | 12,870                                     | 13,450           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | USS C100         | 12,290                        | 918                       | --                   | 806   | 923              | 12,560         | --                 | 12,560 | 12,270 | 12,430 | 13,550                                     | 14,130           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | C110             | 13,220                        | 1,009                     | --                   | --    | --               | 13,810         | --                 | --     | --     | 13,680 | 14,900                                     | 15,490           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | P110 SR16        | 13,220                        | 1,009                     | --                   | 904   | 1,040            | 13,810         | --                 | 13,810 | 13,500 | 13,680 | 14,900                                     | 14,590           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | P110             | 13,220                        | 1,009                     | --                   | 904   | 1,040            | 13,810         | --                 | 13,810 | 13,500 | 13,680 | 14,900                                     | 16,140           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | P110 HC          | 14,140                        | 1,009                     | --                   | 904   | 1,040            | 13,810         | --                 | 13,810 | 13,500 | 13,680 | 14,900                                     | 16,140           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | P110 HP          | 15,220                        | 1,147                     | --                   | 952   | 1,106            | 15,700         | --                 | 14,680 | 13,500 | 15,540 | 16,940                                     | 16,910           | 7.390                      | 7                              |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | Q125             | 14,540                        | 1,147                     | --                   | 989   | 1,138            | 15,700         | --                 | 15,700 | 15,340 | 15,540 | 16,940                                     | 17,560           | 7.390                      | --                             |
| 6 5/8                           | 32.00  | 31.23 | 0.475 | 5.675 | 5.550 | --        | Q125 HC          | 14,980                        | 1,147                     | --                   | 989   | 1,138            | 15,700         | --                 | 15,700 | 15,340 | 15,540 | 16,940                                     | 17,560           | 7.390                      | --                             |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |       |       | Internal Yield      |                                   |        |                   | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |                      |       |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|-----------------------------------|--------|-------------------|--|----------------------------|--------------------------------|----------------------|-------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |       |       | API Historical      |                                   |        | Lame' - Von Mises |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |                      |       |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |       |       | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC LTC BTC |        |                   | Open<br>End<br>psi                         |                            |                                | Capped<br>End<br>psi |       |
| 6 5/8                           | 32.00        | 31.23        | 0.475              | 5.675             | 5.550               | --                        | Q125 HP          | 16,100                        | 1,239                     | --   | 1,025 | 1,192 | 16,950              | --                                | 16,680 | 15,340            | 16,780                                     | 18,290                     | 18,300                         | 7.390                | --    |
| 6 5/8                           | 32.00        | 31.23        | 0.475              | 5.675             | 5.550               | --                        | USS140           | 14,540                        | 1,285                     | --   | 1,099 | 1,267 | 17,580              | --                                | 17,580 | 17,180            | 17,410                                     | 18,970                     | 19,660                         | 7.390                | --    |
| 6 5/8                           | 32.00        | 31.23        | 0.475              | 5.675             | 5.550               | --                        | USS V150         | 14,540                        | 1,377                     | --   | 1,172 | 1,353 | 18,840              | --                                | 18,840 | 18,410            | 18,650                                     | 20,320                     | 21,070                         | 7.390                | --    |
| 7                               | 17.00        | 16.72        | 0.231              | 6.538             | 6.413               | --                        | H40              | 1,420                         | 196                       | 122  | --    | --    | 2,310               | 2,310                             | --     | --                | 2,300                                      | 2,580                      | 2,500                          | 7.656                | --    |
| 7                               | 20.00        | 19.56        | 0.272              | 6.456             | 6.331               | --                        | H40              | 1,970                         | 230                       | 176  | --    | --    | 2,720               | 2,720                             | --     | --                | 2,710                                      | 3,030                      | 2,960                          | 7.656                | --    |
| 7                               | 20.00        | 19.56        | 0.272              | 6.456             | 6.331               | --                        | J55              | 2,270                         | 316                       | 234  | --    | --    | 3,740               | 3,740                             | --     | --                | 3,730                                      | 4,160                      | 3,730                          | 7.656                | --    |
| 7                               | 20.00        | 19.56        | 0.272              | 6.456             | 6.331               | --                        | K55              | 2,270                         | 316                       | 254  | --    | --    | 3,740               | 3,740                             | --     | --                | 3,730                                      | 4,160                      | 4,720                          | 7.656                | --    |
| 7                               | 20.00        | 19.56        | 0.272              | 6.456             | 6.331               | --                        | USS FS80         | 3,380                         | 431                       | 311  | --    | --    | 5,100               | 5,100                             | --     | --                | 5,090                                      | 5,680                      | 5,750                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | J55              | 3,270                         | 366                       | 284  | 313   | 432   | 4,350               | 4,350                             | 4,350  | 4,350             | 4,340                                      | 4,820                      | 4,350                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | K55              | 3,270                         | 366                       | 309  | 341   | 522   | 4,350               | 4,350                             | 4,350  | 4,350             | 4,340                                      | 4,820                      | 5,510                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | USS FS80         | 4,850                         | 499                       | 378  | 416   | 557   | 5,940               | 5,940                             | 5,940  | 5,940             | 5,910                                      | 6,580                      | 6,720                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | USS GT80S        | 3,830                         | 532                       | --   | 435   | 565   | 6,330               | --                                | 6,330  | 6,330             | 6,310                                      | 7,010                      | 6,740                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | L80              | 3,830                         | 532                       | --   | 435   | 565   | 6,330               | --                                | 6,330  | 6,330             | 6,310                                      | 7,010                      | 6,740                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | L80 HC           | 4,850                         | 532                       | --   | 435   | 565   | 6,330               | --                                | 6,330  | 6,330             | 6,310                                      | 7,010                      | 6,740                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | L80 HP           | 5,260                         | 566                       | --   | 453   | 574   | 6,730               | --                                | 6,730  | 6,730             | 6,700                                      | 7,450                      | 6,740                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | N80n             | 3,830                         | 532                       | --   | 442   | 588   | 6,330               | --                                | 6,330  | 6,330             | 6,310                                      | 7,010                      | 5,870                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | N80              | 3,830                         | 532                       | --   | 442   | 588   | 6,330               | --                                | 6,330  | 6,330             | 6,310                                      | 7,010                      | 7,090                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | N80 HC           | 4,970                         | 532                       | --   | 442   | 588   | 6,330               | --                                | 6,330  | 6,330             | 6,310                                      | 7,010                      | 7,090                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | N80 HP           | 5,410                         | 632                       | --   | 505   | 636   | 7,520               | --                                | 7,520  | 7,520             | 7,490                                      | 8,330                      | 7,500                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | C90              | 4,030                         | 599                       | --   | 479   | 605   | 7,120               | --                                | 7,120  | 7,120             | 7,090                                      | 7,890                      | 7,870                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | USS C90          | 4,030                         | 599                       | --   | 479   | 605   | 7,120               | --                                | 7,120  | 7,120             | 7,090                                      | 7,890                      | 7,870                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | C95              | 4,140                         | 632                       | --   | 505   | 636   | 7,520               | --                                | 7,520  | 7,520             | 7,490                                      | 8,330                      | 7,500                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | T95              | 4,140                         | 632                       | --   | 505   | 636   | 7,520               | --                                | 7,520  | 7,520             | 7,490                                      | 8,330                      | 8,280                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | USS C95          | 4,140                         | 632                       | --   | 505   | 636   | 7,520               | --                                | 7,520  | 7,520             | 7,490                                      | 8,330                      | 8,280                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | USS C100         | 4,250                         | 666                       | --   | 531   | 668   | 7,910               | --                                | 7,910  | 7,910             | 7,880                                      | 8,770                      | 8,700                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | C110             | 4,440                         | 732                       | --   | --    | --    | 8,710               | --                                | --     | --                | 8,670                                      | 9,640                      | 9,540                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | P110 SR16        | 4,440                         | 732                       | --   | 590   | 752   | 8,710               | --                                | 8,710  | 8,710             | 8,670                                      | 9,640                      | 9,000                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | P110             | 4,440                         | 732                       | --   | 590   | 752   | 8,710               | --                                | 8,710  | 8,710             | 8,670                                      | 9,640                      | 9,940                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | P110 HC          | 5,470                         | 732                       | --   | 590   | 752   | 8,710               | --                                | 8,710  | 8,710             | 8,670                                      | 9,640                      | 9,940                          | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | P110 HP          | 5,930                         | 832                       | --   | 630   | 801   | 9,890               | --                                | 9,890  | 9,890             | 9,850                                      | 10,960                     | 10,410                         | 7.656                | 7.375 |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | Q125             | 4,650                         | 832                       | --   | 655   | 823   | 9,890               | --                                | 9,890  | 9,890             | 9,850                                      | 10,960                     | 10,810                         | 7.656                | --    |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | Q125 HC          | 5,580                         | 832                       | --   | 655   | 823   | 9,890               | --                                | 9,890  | 9,890             | 9,850                                      | 10,960                     | 10,810                         | 7.656                | --    |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | Q125 HP          | 6,050                         | 899                       | --   | 679   | 863   | 10,680              | --                                | 10,680 | 10,680            | 10,640                                     | 11,840                     | 11,270                         | 7.656                | --    |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | USS140           | 4,760                         | 932                       | --   | 727   | 917   | 11,080              | --                                | 11,080 | 11,080            | 11,040                                     | 12,270                     | 12,100                         | 7.656                | --    |
| 7                               | 23.00        | 22.65        | 0.317              | 6.366             | 6.241               | 6.250                     | USS V150         | 4,790                         | 998                       | --   | 776   | 979   | 11,870              | --                                | 11,870 | 11,870            | 11,820                                     | 13,150                     | 12,970                         | 7.656                | --    |
| 7                               | 26.00        | 25.69        | 0.362              | 6.276             | 6.151               | --                        | J55              | 4,330                         | 415                       | 334  | 367   | 490   | 4,980               | 4,980                             | 4,980  | 4,980             | 4,960                                      | 5,470                      | 5,000                          | 7.656                | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362              | 6.276             | 6.151               | --                        | K55              | 4,330                         | 415                       | 364  | 401   | 592   | 4,980               | 4,980                             | 4,980  | 4,980             | 4,960                                      | 5,470                      | 6,340                          | 7.656                | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362              | 6.276             | 6.151               | --                        | USS FS80         | 6,370                         | 566                       | 445  | 489   | 631   | 6,790               | 6,790                             | 6,790  | 6,790             | 6,760                                      | 7,470                      | 7,730                          | 7.656                | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362              | 6.276             | 6.151               | --                        | USS GT80S        | 5,410                         | 604                       | --   | 511   | 641   | 7,250               | --                                | 7,250  | 7,250             | 7,210                                      | 7,960                      | 7,750                          | 7.656                | 7.375 |

| Dimensional & Grade Designators |              |              |             |            |              |              |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |                     |                                   | Internal Yield |    |                    |                      | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |       |       |
|---------------------------------|--------------|--------------|-------------|------------|--------------|--------------|------------------|-------------------------------|---------------------------|--|---------------------|-----------------------------------|----------------|----|--------------------|----------------------|--|----------------------------|--------------------------------|-------|-------|
| O D<br>Size<br>in.              | Weight       |              | NOM         | NOM        | API          | Alternate    | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |                     |                                   | API Historical |    |                    | Lame' - Von Mises    |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |       |       |
|                                 | T&C<br>lb/ft | P E<br>lb/ft | Wall<br>in. | I D<br>in. | Drift<br>in. | Drift<br>in. |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC LTC BTC |                |    | Open<br>End<br>psi | Capped<br>End<br>psi |  |                            |                                |       |       |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | L80              | 5,410                         | 604                       | --   | 511                 | 641                               | 7,250          | -- | 7,250              | 7,250                | 7,210                                      | 7,960                      | 7,750                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | L80 HC           | 6,370                         | 604                       | --   | 511                 | 641                               | 7,250          | -- | 7,250              | 7,250                | 7,210                                      | 7,960                      | 7,750                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | L80 HP           | 6,830                         | 642                       | --   | 533                 | 651                               | 7,700          | -- | 7,700              | 7,700                | 7,660                                      | 8,460                      | 7,750                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | N80n             | 5,410                         | 604                       | --   | 519                 | 667                               | 7,250          | -- | 7,250              | 7,250                | 7,210                                      | 7,960                      | 6,760                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | N80              | 5,410                         | 604                       | --   | 519                 | 667                               | 7,250          | -- | 7,250              | 7,250                | 7,210                                      | 7,960                      | 8,160                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | N80 HC           | 6,580                         | 604                       | --   | 519                 | 667                               | 7,250          | -- | 7,250              | 7,250                | 7,210                                      | 7,960                      | 8,160                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | N80 HP           | 7,160                         | 717                       | --   | 593                 | 722                               | 8,600          | -- | 8,600              | 8,460                | 8,560                                      | 9,460                      | 8,630                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | C90              | 5,740                         | 679                       | --   | 563                 | 687                               | 8,150          | -- | 8,150              | 8,150                | 8,110                                      | 8,960                      | 9,060                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | USS C90          | 5,740                         | 679                       | --   | 563                 | 687                               | 8,150          | -- | 8,150              | 8,150                | 8,110                                      | 8,960                      | 9,060                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | C95              | 5,890                         | 717                       | --   | 593                 | 722                               | 8,600          | -- | 8,600              | 8,600                | 8,560                                      | 9,460                      | 8,630                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | T95              | 5,890                         | 717                       | --   | 593                 | 722                               | 8,600          | -- | 8,600              | 8,600                | 8,560                                      | 9,460                      | 9,530                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | USS C95          | 5,890                         | 717                       | --   | 593                 | 722                               | 8,600          | -- | 8,600              | 8,600                | 8,560                                      | 9,460                      | 9,530                          | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | USS C100         | 6,010                         | 755                       | --   | 624                 | 757                               | 9,060          | -- | 9,060              | 9,060                | 9,010                                      | 9,950                      | 10,010                         | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | C110             | 6,230                         | 830                       | --   | --                  | --                                | 9,960          | -- | --                 | --                   | 9,910                                      | 10,950                     | 10,980                         | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | P110 SR16        | 6,230                         | 830                       | --   | 693                 | 853                               | 9,960          | -- | 9,960              | 9,960                | 9,910                                      | 10,950                     | 10,360                         | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | P110             | 6,230                         | 830                       | --   | 693                 | 853                               | 9,960          | -- | 9,960              | 9,960                | 9,910                                      | 10,950                     | 11,440                         | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | P110 HC          | 7,540                         | 830                       | --   | 693                 | 853                               | 9,960          | -- | 9,960              | 9,960                | 9,910                                      | 10,950                     | 11,440                         | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | P110 HP          | 8,160                         | 944                       | --   | 741                 | 908                               | 11,320         | -- | 11,320             | 11,320               | 11,260                                     | 12,440                     | 11,980                         | 7.656 | 7.375 |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | Q125             | 6,450                         | 944                       | --   | 769                 | 934                               | 11,320         | -- | 11,320             | 11,320               | 11,260                                     | 12,440                     | 12,440                         | 7.656 | --    |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | Q125 HC          | 7,770                         | 944                       | --   | 769                 | 934                               | 11,320         | -- | 11,320             | 11,320               | 11,260                                     | 12,440                     | 12,440                         | 7.656 | --    |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | Q125 HP          | 8,400                         | 1,019                     | --   | 798                 | 979                               | 12,230         | -- | 12,230             | 12,230               | 12,160                                     | 13,440                     | 12,970                         | 7.656 | --    |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | USS140           | 6,690                         | 1,057                     | --   | 855                 | 1,040                             | 12,680         | -- | 12,680             | 12,680               | 12,610                                     | 13,940                     | 13,930                         | 7.656 | --    |
| 7                               | 26.00        | 25.69        | 0.362       | 6.276      | 6.151        | --           | USS V150         | 6,880                         | 1,132                     | --   | 912                 | 1,110                             | 13,590         | -- | 13,590             | 13,590               | 13,520                                     | 14,930                     | 14,930                         | 7.656 | --    |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | USS GT80S        | 7,030                         | 676                       | --   | 587                 | 718                               | 8,160          | -- | 8,160              | 8,160                | 8,110                                      | 8,920                      | 8,770                          | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | L80              | 7,030                         | 676                       | --   | 587                 | 718                               | 8,160          | -- | 8,160              | 8,160                | 8,110                                      | 8,920                      | 8,770                          | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | L80 HC           | 7,880                         | 676                       | --   | 587                 | 718                               | 8,160          | -- | 8,160              | 8,160                | 8,110                                      | 8,920                      | 8,770                          | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | L80 HP           | 8,380                         | 718                       | --   | 613                 | 729                               | 8,670          | -- | 8,670              | 8,460                | 8,610                                      | 9,480                      | 8,770                          | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | N80n             | 7,030                         | 676                       | --   | 597                 | 746                               | 8,160          | -- | 8,160              | 8,160                | 8,110                                      | 8,920                      | 7,640                          | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | N80              | 7,030                         | 676                       | --   | 597                 | 746                               | 8,160          | -- | 8,160              | 8,160                | 8,110                                      | 8,920                      | 9,240                          | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | N80 HC           | 8,200                         | 676                       | --   | 597                 | 746                               | 8,160          | -- | 8,160              | 8,160                | 8,110                                      | 8,920                      | 9,240                          | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | N80 HP           | 8,910                         | 803                       | --   | 683                 | 808                               | 9,690          | -- | 9,240              | 8,460                | 9,630                                      | 10,590                     | 9,770                          | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | C90              | 7,580                         | 760                       | --   | 648                 | 768                               | 9,180          | -- | 9,180              | 9,180                | 9,120                                      | 10,040                     | 10,260                         | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | USS C90          | 7,580                         | 760                       | --   | 648                 | 768                               | 9,180          | -- | 9,180              | 9,180                | 9,120                                      | 10,040                     | 10,260                         | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | C95              | 7,840                         | 803                       | --   | 683                 | 808                               | 9,690          | -- | 9,690              | 9,690                | 9,630                                      | 10,590                     | 9,770                          | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | T95              | 7,840                         | 803                       | --   | 683                 | 808                               | 9,690          | -- | 9,690              | 9,690                | 9,630                                      | 10,590                     | 10,800                         | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | USS C95          | 7,840                         | 803                       | --   | 683                 | 808                               | 9,690          | -- | 9,690              | 9,690                | 9,630                                      | 10,590                     | 10,800                         | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | USS C100         | 8,080                         | 845                       | --   | 717                 | 847                               | 10,200         | -- | 10,200             | 10,200               | 10,130                                     | 11,150                     | 11,340                         | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | C110             | 8,530                         | 929                       | --   | --                  | --                                | 11,220         | -- | --                 | --                   | 11,150                                     | 12,270                     | 12,430                         | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408       | 6.184      | 6.059        | --           | P110 SR16        | 8,530                         | 929                       | --   | 797                 | 955                               | 11,220         | -- | 11,220             | 11,220               | 11,150                                     | 12,270                     | 11,720                         | 7.656 | 7.375 |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | TENSION                       |                           |  |                     |   | Internal Yield |                    |                      |                            |                                | Ductile                         |                  |       |       |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|---------------------|---|----------------|--------------------|----------------------|----------------------------|--------------------------------|---------------------------------|------------------|-------|-------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade | Collapse<br>Resistance<br>psi | Joint Strength, 1,000 lbs |  |                     |   | API Historical |                    |                      | Lame' - Von Mises          |                                | Rupture<br>Capped<br>End<br>psi | Outside Diameter |       |       |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC psi LTC psi BTC psi |                | Open<br>End<br>psi | Capped<br>End<br>psi | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |                                 |                  |       |       |
| 7                               | 29.00        | 28.75        | 0.408              | 6.184             | 6.059               | --                        | P110             | 8,530                         | 929                       | --   | 797                 | 955   | 11,220         | --                 | 11,220               | 11,220                     | 11,150                         | 12,270                          | 12,950           | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408              | 6.184             | 6.059               | --                        | P110 HC          | 9,750                         | 929                       | --   | 797                 | 955   | 11,220         | --                 | 11,220               | 11,220                     | 11,150                         | 12,270                          | 12,950           | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408              | 6.184             | 6.059               | --                        | P110 HP          | 10,530                        | 1,056                     | --   | 852                 | 1,017   | 12,750         | --                 | 12,700               | 11,640                     | 12,670                         | 13,940                          | 13,570           | 7.656 | 7.375 |
| 7                               | 29.00        | 28.75        | 0.408              | 6.184             | 6.059               | --                        | Q125             | 9,100                         | 1,056                     | --   | 885                 | 1,045   | 12,750         | --                 | 12,750               | 12,750                     | 12,670                         | 13,940                          | 14,090           | 7.656 | --    |
| 7                               | 29.00        | 28.75        | 0.408              | 6.184             | 6.059               | --                        | Q125 HC          | 10,150                        | 1,056                     | --   | 885                 | 1,045   | 12,750         | --                 | 12,750               | 12,750                     | 12,670                         | 13,940                          | 14,090           | 7.656 | --    |
| 7                               | 29.00        | 28.75        | 0.408              | 6.184             | 6.059               | --                        | Q125 HP          | 10,960                        | 1,141                     | --   | 918                 | 1,096   | 13,770         | --                 | 13,770               | 13,220                     | 13,680                         | 15,050                          | 14,690           | 7.656 | --    |
| 7                               | 29.00        | 28.75        | 0.408              | 6.184             | 6.059               | --                        | USS140           | 9,560                         | 1,183                     | --   | 983                 | 1,164   | 14,280         | --                 | 14,280               | 14,280                     | 14,190                         | 15,610                          | 15,780           | 7.656 | --    |
| 7                               | 29.00        | 28.75        | 0.408              | 6.184             | 6.059               | --                        | USS V150         | 9,790                         | 1,267                     | --   | 1,049               | 1,243   | 15,300         | --                 | 15,300               | 15,300                     | 15,200                         | 16,730                          | 16,910           | 7.656 | --    |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | USS GT80S        | 8,600                         | 745                       | --   | 661                 | 791   | 9,050          | --                 | 9,050                | 8,460                      | 8,980                          | 9,850                           | 9,780            | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | L80              | 8,600                         | 745                       | --   | 661                 | 791   | 9,050          | --                 | 9,050                | 8,460                      | 8,980                          | 9,850                           | 9,780            | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | L80 HC           | 9,290                         | 745                       | --   | 661                 | 791   | 9,050          | --                 | 9,050                | 8,460                      | 8,980                          | 9,850                           | 9,780            | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | L80 HP           | 9,820                         | 792                       | --   | 690                 | 804   | 9,620          | --                 | 9,240                | 8,460                      | 9,540                          | 10,460                          | 9,780            | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | N80n             | 8,600                         | 745                       | --   | 672                 | 823   | 9,050          | --                 | 9,050                | 8,460                      | 8,980                          | 9,850                           | 8,510            | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | N80              | 8,600                         | 745                       | --   | 672                 | 823   | 9,050          | --                 | 9,050                | 8,460                      | 8,980                          | 9,850                           | 10,300           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | N80 HC           | 9,710                         | 745                       | --   | 672                 | 823   | 9,050          | --                 | 9,050                | 8,460                      | 8,980                          | 9,850                           | 10,300           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | N80 HP           | 10,560                        | 885                       | --   | 768                 | 876   | 10,750         | --                 | 9,240                | 8,460                      | 10,660                         | 11,690                          | 10,890           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | C90              | 9,380                         | 839                       | --   | 729                 | 847   | 10,180         | --                 | 10,180               | 9,520                      | 10,100                         | 11,080                          | 11,440           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | USS C90          | 9,380                         | 839                       | --   | 729                 | 847   | 10,180         | --                 | 10,180               | 9,520                      | 10,100                         | 11,080                          | 11,440           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | C95              | 9,740                         | 885                       | --   | 768                 | 891   | 10,750         | --                 | 10,750               | 10,050                     | 10,660                         | 11,690                          | 10,890           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | T95              | 9,740                         | 885                       | --   | 768                 | 891   | 10,750         | --                 | 10,750               | 10,050                     | 10,660                         | 11,690                          | 12,040           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | USS C95          | 9,740                         | 885                       | --   | 768                 | 891   | 10,750         | --                 | 10,750               | 10,050                     | 10,660                         | 11,690                          | 12,040           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | USS C100         | 10,110                        | 932                       | --   | 808                 | 934   | 11,310         | --                 | 11,310               | 10,580                     | 11,220                         | 12,310                          | 12,650           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | C110             | 10,780                        | 1,025                     | --   | --                  | --  | 12,450         | --                 | --                   | --                         | 12,340                         | 13,540                          | 13,870           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | P110 SR16        | 10,780                        | 1,025                     | --   | 897                 | 1,053   | 12,450         | --                 | 12,450               | 11,640                     | 12,340                         | 13,540                          | 13,060           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | P110             | 10,780                        | 1,025                     | --   | 897                 | 1,053   | 12,450         | --                 | 12,450               | 11,640                     | 12,340                         | 13,540                          | 14,450           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | P110 HC          | 11,890                        | 1,025                     | --   | 897                 | 1,053   | 12,450         | --                 | 12,450               | 11,640                     | 12,340                         | 13,540                          | 14,450           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | P110 HP          | 12,830                        | 1,165                     | --   | 959                 | 1,096   | 14,140         | --                 | 12,700               | 11,640                     | 14,030                         | 15,390                          | 15,140           | 7.656 | 7.375 |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | Q125             | 11,720                        | 1,165                     | --   | 996                 | 1,152   | 14,140         | --                 | 14,140               | 13,220                     | 14,030                         | 15,390                          | 15,720           | 7.656 | --    |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | Q125 HC          | 12,500                        | 1,165                     | --   | 996                 | 1,152   | 14,140         | --                 | 14,140               | 13,220                     | 14,030                         | 15,390                          | 15,720           | 7.656 | --    |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | Q125 HP          | 13,460                        | 1,258                     | --   | 1,033               | 1,183   | 15,270         | --                 | 14,430               | 13,220                     | 15,150                         | 16,620                          | 16,380           | 7.656 | --    |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | USS140           | 12,540                        | 1,304                     | --   | 1,107               | 1,283   | 15,840         | --                 | 15,840               | 14,810                     | 15,710                         | 17,230                          | 17,600           | 7.656 | --    |
| 7                               | 32.00        | 31.70        | 0.453              | 6.094             | 5.969               | 6.000                     | USS V150         | 13,020                        | 1,398                     | --   | 1,180               | 1,370   | 16,970         | --                 | 16,970               | 15,870                     | 16,830                         | 18,460                          | 18,860           | 7.656 | --    |
| 7                               | 35.00        | 34.61        | 0.498              | 6.004             | 5.879               | --                        | USS GT80S        | 10,180                        | 814                       | --   | 734                 | 833   | 9,970          | --                 | 9,240                | 8,460                      | 9,870                          | 10,760                          | 10,830           | 7.656 | 7.375 |
| 7                               | 35.00        | 34.61        | 0.498              | 6.004             | 5.879               | --                        | L80              | 10,180                        | 814                       | --   | 734                 | 833   | 9,970          | --                 | 9,240                | 8,460                      | 9,870                          | 10,760                          | 10,830           | 7.656 | 7.375 |
| 7                               | 35.00        | 34.61        | 0.498              | 6.004             | 5.879               | --                        | L80 HC           | 10,650                        | 814                       | --   | 734                 | 833   | 9,970          | --                 | 9,240                | 8,460                      | 9,870                          | 10,760                          | 10,830           | 7.656 | 7.375 |
| 7                               | 35.00        | 34.61        | 0.498              | 6.004             | 5.879               | --                        | L80 HP           | 11,200                        | 865                       | --   | 766                 | 833   | 10,590         | --                 | 9,240                | 8,460                      | 10,480                         | 11,430                          | 10,830           | 7.656 | 7.375 |
| 7                               | 35.00        | 34.61        | 0.498              | 6.004             | 5.879               | --                        | N80n             | 10,180                        | 814                       | --   | 746                 | 876   | 9,970          | --                 | 9,240                | 8,460                      | 9,870                          | 10,760                          | 9,410            | 7.656 | 7.375 |
| 7                               | 35.00        | 34.61        | 0.498              | 6.004             | 5.879               | --                        | N80              | 10,180                        | 814                       | --   | 746                 | 876   | 9,970          | --                 | 9,240                | 8,460                      | 9,870                          | 10,760                          | 11,400           | 7.656 | 7.375 |
| 7                               | 35.00        | 34.61        | 0.498              | 6.004             | 5.879               | --                        | N80 HC           | 11,160                        | 814                       | --   | 746                 | 876   | 9,970          | --                 | 9,240                | 8,460                      | 9,870                          | 10,760                          | 11,400           | 7.656 | 7.375 |

| Dimensional & Grade Designators |              |              |             |            |              |              |                  | TENSION                       |                           |  |                                   |                    | Internal Yield      |                      |            |            |                   | Ductile |                      |                            |                                |
|---------------------------------|--------------|--------------|-------------|------------|--------------|--------------|------------------|-------------------------------|---------------------------|--|-----------------------------------|--------------------|---------------------|----------------------|------------|------------|-------------------|---------|----------------------|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM         | NOM        | API          | Alternate    | Product<br>Grade | Collapse<br>Resistance<br>psi | Joint Strength, 1,000 lbs |  |                                   |                    | Pipe<br>Body<br>psi | API Historical       |            |            | Lame' - Von Mises |         | Capped<br>End<br>psi | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft | Wall<br>in. | I D<br>in. | Drift<br>in. | Drift<br>in. |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | Threaded & Coupled<br>STC LTC BTC | Open<br>End<br>psi |                     | Capped<br>End<br>psi | End<br>psi | End<br>psi |                   |         |                      |                            |                                |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | N80 HP           | 12,130                        | 966                       | --   | 853                               | 876                | 11,830              | --                   | 9,240      | 8,460      | 11,720            | 12,780  | 12,060               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | C90              | 11,170                        | 915                       | --   | 809                               | 876                | 11,210              | --                   | 10,390     | 9,520      | 11,100            | 12,110  | 12,670               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | USS C90          | 11,170                        | 915                       | --   | 809                               | 876                | 11,210              | --                   | 10,390     | 9,520      | 11,100            | 12,110  | 12,670               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | C95              | 11,650                        | 966                       | --   | 853                               | 920                | 11,830              | --                   | 10,970     | 10,050     | 11,720            | 12,780  | 12,060               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | T95              | 11,650                        | 966                       | --   | 853                               | 920                | 11,830              | --                   | 10,970     | 10,050     | 11,720            | 12,780  | 13,340               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | USS C95          | 11,650                        | 966                       | --   | 853                               | 920                | 11,830              | --                   | 10,970     | 10,050     | 11,720            | 12,780  | 13,340               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | USS C100         | 12,120                        | 1,017                     | --   | 897                               | 964                | 12,460              | --                   | 11,550     | 10,580     | 12,330            | 13,450  | 14,010               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | C110             | 13,030                        | 1,119                     | --   | --                                | --                 | 13,700              | --                   | --         | --         | 13,570            | 14,800  | 15,360               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | P110 SR16        | 13,030                        | 1,119                     | --   | 996                               | 1,096              | 13,700              | --                   | 12,700     | 11,640     | 13,570            | 14,800  | 14,460               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | P110             | 13,030                        | 1,119                     | --   | 996                               | 1,096              | 13,700              | --                   | 12,700     | 11,640     | 13,570            | 14,800  | 16,000               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | P110 HC          | 13,960                        | 1,119                     | --   | 996                               | 1,096              | 13,700              | --                   | 12,700     | 11,640     | 13,570            | 14,800  | 16,000               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | P110 HP          | 15,040                        | 1,272                     | --   | 1,065                             | 1,096              | 15,570              | --                   | 12,700     | 11,640     | 15,420            | 16,810  | 16,760               | 7.656                      | 7.375                          |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | Q125             | 14,310                        | 1,272                     | --   | 1,106                             | 1,183              | 15,570              | --                   | 14,430     | 13,220     | 15,420            | 16,810  | 17,410               | 7.656                      | --                             |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | Q125 HC          | 14,780                        | 1,272                     | --   | 1,106                             | 1,183              | 15,570              | --                   | 14,430     | 13,220     | 15,420            | 16,810  | 17,410               | 7.656                      | --                             |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | Q125 HP          | 15,890                        | 1,373                     | --   | 1,147                             | 1,183              | 16,820              | --                   | 14,430     | 13,220     | 16,650            | 18,160  | 18,140               | 7.656                      | --                             |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | USS140           | 15,490                        | 1,424                     | --   | 1,229                             | 1,315              | 17,440              | --                   | 16,170     | 14,810     | 17,270            | 18,830  | 19,490               | 7.656                      | --                             |
| 7                               | 35.00        | 34.61        | 0.498       | 6.004      | 5.879        | --           | USS V150         | 16,220                        | 1,526                     | --   | 1,311                             | 1,402              | 18,690              | --                   | 17,320     | 15,870     | 18,500            | 20,180  | 20,890               | 7.656                      | --                             |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | USS GT80S        | 11,390                        | 877                       | --   | 801                               | 833                | 10,810              | --                   | 9,240      | 8,460      | 10,690            | 11,600  | 11,800               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | L80              | 11,390                        | 877                       | --   | 801                               | 833                | 10,810              | --                   | 9,240      | 8,460      | 10,690            | 11,600  | 11,800               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | L80 HC           | 11,870                        | 877                       | --   | 801                               | 833                | 10,810              | --                   | 9,240      | 8,460      | 10,690            | 11,600  | 11,800               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | L80 HP           | 12,460                        | 932                       | --   | 836                               | 833                | 11,490              | --                   | 9,240      | 8,460      | 11,350            | 12,330  | 11,800               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | N80n             | 11,390                        | 877                       | --   | 814                               | 876                | 10,810              | --                   | 9,240      | 8,460      | 10,690            | 11,600  | 10,250               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | N80              | 11,390                        | 877                       | --   | 814                               | 876                | 10,810              | --                   | 9,240      | 8,460      | 10,690            | 11,600  | 12,420               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | N80 HC           | 12,470                        | 877                       | --   | 814                               | 876                | 10,810              | --                   | 9,240      | 8,460      | 10,690            | 11,600  | 12,420               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | N80 HP           | 13,560                        | 1,041                     | --   | 931                               | 876                | 12,840              | --                   | 9,240      | 8,460      | 12,690            | 13,780  | 13,140               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | C90              | 12,810                        | 986                       | --   | 883                               | 876                | 12,160              | --                   | 10,390     | 9,520      | 12,020            | 13,050  | 13,820               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | USS C90          | 12,810                        | 986                       | --   | 883                               | 876                | 12,160              | --                   | 10,390     | 9,520      | 12,020            | 13,050  | 13,820               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | C95              | 13,430                        | 1,041                     | --   | 931                               | 920                | 12,840              | --                   | 10,970     | 10,050     | 12,690            | 13,780  | 13,140               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | T95              | 13,430                        | 1,041                     | --   | 931                               | 920                | 12,840              | --                   | 10,970     | 10,050     | 12,690            | 13,780  | 14,550               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | USS C95          | 13,430                        | 1,041                     | --   | 931                               | 920                | 12,840              | --                   | 10,970     | 10,050     | 12,690            | 13,780  | 14,550               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | USS C100         | 14,010                        | 1,096                     | --   | 978                               | 964                | 13,510              | --                   | 11,550     | 10,580     | 13,360            | 14,500  | 15,280               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | C110             | 15,130                        | 1,205                     | --   | --                                | --                 | 14,870              | --                   | --         | --         | 14,690            | 15,950  | 16,750               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | P110 SR16        | 15,130                        | 1,205                     | --   | 1,087                             | 1,096              | 14,870              | --                   | 12,700     | 11,640     | 14,690            | 15,950  | 15,770               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | P110             | 15,130                        | 1,205                     | --   | 1,087                             | 1,096              | 14,870              | --                   | 12,700     | 11,640     | 14,690            | 15,950  | 17,450               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | P110 HC          | 15,820                        | 1,205                     | --   | 1,087                             | 1,096              | 14,870              | --                   | 12,700     | 11,640     | 14,690            | 15,950  | 17,450               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | P110 HP          | 17,020                        | 1,370                     | --   | 1,162                             | 1,096              | 16,890              | --                   | 12,700     | 11,640     | 16,700            | 18,130  | 18,280               | 7.656                      | 7.375                          |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | Q125             | 16,740                        | 1,370                     | --   | 1,207                             | 1,183              | 16,890              | --                   | 14,430     | 13,220     | 16,700            | 18,130  | 18,990               | 7.656                      | --                             |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | Q125 HC          | 16,840                        | 1,370                     | --   | 1,207                             | 1,183              | 16,890              | --                   | 14,430     | 13,220     | 16,700            | 18,130  | 18,990               | 7.656                      | --                             |
| 7                               | 38.00        | 37.29        | 0.540       | 5.920      | 5.795        | --           | Q125 HP          | 18,080                        | 1,479                     | --   | 1,251                             | 1,183              | 18,240              | --                   | 14,430     | 13,220     | 18,030            | 19,580  | 19,790               | 7.656                      | --                             |



| Dimensional & Grade Designators |           |           |              |             |               |                     |               | TENSION                 |                           |                          |       |                  | Internal Yield |                |         |         |                   | Ductile Rupture |                | Outside Diameter     |                          |
|---------------------------------|-----------|-----------|--------------|-------------|---------------|---------------------|---------------|-------------------------|---------------------------|--------------------------|-------|------------------|----------------|----------------|---------|---------|-------------------|-----------------|----------------|----------------------|--------------------------|
| O D Size in.                    | Weight    |           | NOM Wall in. | NOM I D in. | API Drift in. | Alternate Drift in. | Product Grade | Collapse Resistance psi | Joint Strength, 1,000 lbs |                          |       |                  | Pipe Body psi  | API Historical |         |         | Lame' - Von Mises |                 | Capped End psi | Regular Coupling in. | Special Clr Coupling in. |
|                                 | T&C lb/ft | P E lb/ft |              |             |               |                     |               |                         | Yield Pipe Body           | Threaded and Coupled STC | LTC   | BTC <sup>a</sup> |                | STC psi        | LTC psi | BTC psi | Open End psi      | Capped End psi  |                |                      |                          |
| 7                               | 38.00     | 37.29     | 0.540        | 5.920       | 5.795         | --                  | USS140        | 18,280                  | 1,534                     | --                       | 1,341 | 1,315            | 18,920         | --             | 16,170  | 14,810  | 18,700            | 20,310          | 21,250         | 7.656                | --                       |
| 7                               | 38.00     | 37.29     | 0.540        | 5.920       | 5.795         | --                  | USS V150      | 19,240                  | 1,644                     | --                       | 1,430 | 1,402            | 20,270         | --             | 17,320  | 15,870  | 20,040            | 21,760          | 22,780         | 7.656                | --                       |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | C90           | 14,640                  | 1,127                     | --                       | --    | --               | 14,070         | --             | --      | --      | 13,850            | 14,940          | 16,150         | --                   | --                       |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | USS C90       | 14,640                  | 1,127                     | --                       | --    | --               | 14,070         | --             | --      | --      | 13,850            | 14,940          | 16,150         | --                   | --                       |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | T95           | 15,450                  | 1,189                     | --                       | --    | --               | 14,850         | --             | --      | --      | 14,620            | 15,770          | 17,000         | --                   | --                       |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | USS C95       | 15,450                  | 1,189                     | --                       | --    | --               | 14,850         | --             | --      | --      | 14,620            | 15,770          | 17,000         | --                   | --                       |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | USS C100      | 16,260                  | 1,252                     | --                       | --    | --               | 15,630         | --             | --      | --      | 15,390            | 16,600          | 17,860         | --                   | --                       |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | C110          | 17,890                  | 1,377                     | --                       | --    | --               | 17,190         | --             | --      | --      | 16,930            | 18,260          | 19,580         | --                   | --                       |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | P110 SR16     | 17,890                  | 1,377                     | --                       | 1,190 | 1,096            | 17,190         | --             | 12,700  | 11,640  | 16,930            | 18,260          | 18,410         | 7.656                | 7.375                    |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | P110          | 17,890                  | 1,377                     | --                       | 1,190 | 1,096            | 17,190         | --             | 12,700  | 11,640  | 16,930            | 18,260          | 20,390         | 7.656                | 7.375                    |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | P110 HC       | 19,420                  | 1,377                     | --                       | 1,190 | 1,096            | 17,190         | --             | 12,700  | 11,640  | 16,930            | 18,260          | 20,390         | 7.656                | 7.375                    |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | P110 HP       | 20,870                  | 1,565                     | --                       | 1,190 | 1,096            | 19,540         | --             | 12,700  | 11,640  | 19,230            | 20,750          | 21,370         | 7.656                | 7.375                    |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | Q125          | 20,330                  | 1,565                     | --                       | 1,285 | 1,183            | 19,540         | --             | 14,430  | 13,220  | 19,230            | 20,750          | 22,190         | 7.656                | --                       |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | Q125 HC       | 20,800                  | 1,565                     | --                       | 1,285 | 1,183            | 19,540         | --             | 14,430  | 13,220  | 19,230            | 20,750          | 22,190         | 7.656                | --                       |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | Q125 HP       | 22,300                  | 1,690                     | --                       | 1,285 | 1,183            | 21,100         | --             | 14,430  | 13,220  | 20,770            | 22,410          | 23,130         | 7.656                | --                       |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | USS140        | 22,770                  | 1,752                     | --                       | 1,427 | 1,315            | 21,880         | --             | 16,170  | 14,810  | 21,540            | 23,240          | 24,840         | 7.656                | --                       |
| 7                               | 42.70     | 42.59     | 0.625        | 5.750       | 5.625         | --                  | USS V150      | 24,390                  | 1,878                     | --                       | 1,523 | 1,402            | 23,440         | --             | 17,320  | 15,870  | 23,080            | 24,890          | 26,630         | 7.656                | --                       |
| 7                               | 46.40     | 46.36     | 0.687        | 5.626       | 5.501         | --                  | C90           | 15,930                  | 1,226                     | --                       | --    | --               | 15,450         | --             | --      | --      | 15,170            | 16,280          | 17,890         | --                   | --                       |
| 7                               | 46.40     | 46.36     | 0.687        | 5.626       | 5.501         | --                  | USS C90       | 15,930                  | 1,226                     | --                       | --    | --               | 15,450         | --             | --      | --      | 15,170            | 16,280          | 17,890         | --                   | --                       |
| 7                               | 46.40     | 46.36     | 0.687        | 5.626       | 5.501         | --                  | T95           | 16,820                  | 1,294                     | --                       | --    | --               | 16,310         | --             | --      | --      | 16,010            | 17,190          | 18,830         | --                   | --                       |
| 7                               | 46.40     | 46.36     | 0.687        | 5.626       | 5.501         | --                  | USS C95       | 16,820                  | 1,294                     | --                       | --    | --               | 16,310         | --             | --      | --      | 16,010            | 17,190          | 18,830         | --                   | --                       |
| 7                               | 46.40     | 46.36     | 0.687        | 5.626       | 5.501         | --                  | USS C100      | 17,700                  | 1,363                     | --                       | --    | --               | 17,170         | --             | --      | --      | 16,850            | 18,090          | 19,770         | --                   | --                       |
| 7                               | 46.40     | 46.36     | 0.687        | 5.626       | 5.501         | --                  | C110          | 19,470                  | 1,499                     | --                       | --    | --               | 18,890         | --             | --      | --      | 18,540            | 19,900          | 21,680         | --                   | --                       |
| 7                               | 50.10     | 50.11     | 0.750        | 5.500       | 5.375         | --                  | C90           | 17,220                  | 1,325                     | --                       | --    | --               | 16,870         | --             | --      | --      | 16,490            | 17,620          | 19,680         | --                   | --                       |
| 7                               | 50.10     | 50.11     | 0.750        | 5.500       | 5.375         | --                  | USS C90       | 17,220                  | 1,325                     | --                       | --    | --               | 16,870         | --             | --      | --      | 16,490            | 17,620          | 19,680         | --                   | --                       |
| 7                               | 50.10     | 50.11     | 0.750        | 5.500       | 5.375         | --                  | T95           | 18,180                  | 1,399                     | --                       | --    | --               | 17,810         | --             | --      | --      | 17,410            | 18,600          | 20,720         | --                   | --                       |
| 7                               | 50.10     | 50.11     | 0.750        | 5.500       | 5.375         | --                  | USS C95       | 18,180                  | 1,399                     | --                       | --    | --               | 17,810         | --             | --      | --      | 17,410            | 18,600          | 20,720         | --                   | --                       |
| 7                               | 50.10     | 50.11     | 0.750        | 5.500       | 5.375         | --                  | USS C100      | 19,140                  | 1,473                     | --                       | --    | --               | 18,740         | --             | --      | --      | 18,330            | 19,580          | 21,760         | --                   | --                       |
| 7                               | 50.10     | 50.11     | 0.750        | 5.500       | 5.375         | --                  | C110          | 21,050                  | 1,620                     | --                       | --    | --               | 20,620         | --             | --      | --      | 20,160            | 21,540          | 23,860         | --                   | --                       |
| 7                               | 53.60     | 53.71     | 0.812        | 5.376       | 5.251         | --                  | C90           | 18,460                  | 1,421                     | --                       | --    | --               | 18,280         | --             | --      | --      | 17,810            | 18,920          | 21,510         | --                   | --                       |
| 7                               | 53.60     | 53.71     | 0.812        | 5.376       | 5.251         | --                  | USS C90       | 18,460                  | 1,421                     | --                       | --    | --               | 18,280         | --             | --      | --      | 17,810            | 18,920          | 21,510         | --                   | --                       |
| 7                               | 53.60     | 53.71     | 0.812        | 5.376       | 5.251         | --                  | T95           | 19,480                  | 1,500                     | --                       | --    | --               | 19,300         | --             | --      | --      | 18,800            | 19,970          | 22,640         | --                   | --                       |
| 7                               | 53.60     | 53.71     | 0.812        | 5.376       | 5.251         | --                  | USS C95       | 19,480                  | 1,500                     | --                       | --    | --               | 19,300         | --             | --      | --      | 18,800            | 19,970          | 22,640         | --                   | --                       |
| 7                               | 53.60     | 53.71     | 0.812        | 5.376       | 5.251         | --                  | USS C100      | 20,510                  | 1,579                     | --                       | --    | --               | 20,310         | --             | --      | --      | 19,790            | 21,020          | 23,780         | --                   | --                       |
| 7                               | 53.60     | 53.71     | 0.812        | 5.376       | 5.251         | --                  | C110          | 22,560                  | 1,736                     | --                       | --    | --               | 22,350         | --             | --      | --      | 21,770            | 23,120          | 26,070         | --                   | --                       |
| 7                               | 57.10     | 57.29     | 0.875        | 5.250       | 5.125         | --                  | C90           | 19,690                  | 1,515                     | --                       | --    | --               | 19,700         | --             | --      | --      | 19,100            | 20,210          | 23,360         | --                   | --                       |
| 7                               | 57.10     | 57.29     | 0.875        | 5.250       | 5.125         | --                  | USS C90       | 19,690                  | 1,515                     | --                       | --    | --               | 19,700         | --             | --      | --      | 19,100            | 20,210          | 23,360         | --                   | --                       |
| 7                               | 57.10     | 57.29     | 0.875        | 5.250       | 5.125         | --                  | T95           | 20,780                  | 1,600                     | --                       | --    | --               | 20,790         | --             | --      | --      | 20,170            | 21,330          | 24,590         | --                   | --                       |
| 7                               | 57.10     | 57.29     | 0.875        | 5.250       | 5.125         | --                  | USS C95       | 20,780                  | 1,600                     | --                       | --    | --               | 20,790         | --             | --      | --      | 20,170            | 21,330          | 24,590         | --                   | --                       |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse Resistance<br>psi | TENSION                   |  |     |       | Internal Yield      |                |            |            |                    | Ductile Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |       |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|----------------------------|---------------------------|--|-----|-------|---------------------|----------------|------------|------------|--------------------|---|----------------------------|--------------------------------|-------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                            | Joint Strength, 1,000 lbs |  |     |       | Pipe<br>Body<br>psi | API Historical |            |            | Lame' - Von Mises  |   | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |       |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                            | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |     |       |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi | Capped<br>End<br>psi                    |                            |                                |       |
| 7                               | 57.10        | 57.29        | 0.875              | 5.250             | 5.125               | --                        | USS C100         | 21,880                     | 1,684                     | --   | --  | --    | 21,890              | --             | --         | --         | 21,230             | 22,450                                  | 25,830                     | --                             | --    |
| 7                               | 57.10        | 57.29        | 0.875              | 5.250             | 5.125               | --                        | C110             | 24,060                     | 1,852                     | --   | --  | --    | 24,070              | --             | --         | --         | 23,350             | 24,700                                  | 28,320                     | --                             | --    |
| 7 5/8                           | 20.00        | 19.71        | 0.250              | 7.125             | 7.000               | --                        | H40              | 1,410                      | 232                       | 166  | --  | --    | 2,300               | 2,300          | --         | --         | 2,290              | 2,570                                   | 2,490                      | 8.500                          | --    |
| 7 5/8                           | 24.00        | 23.49        | 0.300              | 7.025             | 6.900               | --                        | H40              | 2,030                      | 276                       | 212  | --  | --    | 2,760               | 2,760          | --         | --         | 2,750              | 3,060                                   | 3,000                      | 8.500                          | --    |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | J55              | 2,900                      | 414                       | 315  | 346 | 483   | 4,140               | 4,140          | 4,140      | 4,140      | 4,130              | 4,590                                   | 4,130                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | K55              | 2,900                      | 414                       | 342  | 377 | 581   | 4,140               | 4,140          | 4,140      | 4,140      | 4,130              | 4,590                                   | 5,240                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | USS FS80         | 4,320                      | 564                       | --   | 461 | 624   | 5,650               | --             | 5,650      | 5,650      | 5,630              | 6,260                                   | 6,380                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | USS GT80S        | 3,400                      | 602                       | --   | 482 | 635   | 6,020               | --             | 6,020      | 6,020      | 6,000              | 6,680                                   | 6,400                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | L80              | 3,400                      | 602                       | --   | 482 | 635   | 6,020               | --             | 6,020      | 6,020      | 6,000              | 6,680                                   | 6,400                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | L80 HC           | 4,320                      | 602                       | --   | 482 | 635   | 6,020               | --             | 6,020      | 6,020      | 6,000              | 6,680                                   | 6,400                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | L80 HP           | 4,710                      | 639                       | --   | 503 | 645   | 6,400               | --             | 6,400      | 6,400      | 6,380              | 7,090                                   | 6,400                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | N80n             | 3,400                      | 602                       | --   | 490 | 659   | 6,020               | --             | 6,020      | 6,020      | 6,000              | 6,680                                   | 5,580                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | N80              | 3,400                      | 602                       | --   | 490 | 659   | 6,020               | --             | 6,020      | 6,020      | 6,000              | 6,680                                   | 6,740                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | N80 HC           | 4,410                      | 602                       | --   | 490 | 659   | 6,020               | --             | 6,020      | 6,020      | 6,000              | 6,680                                   | 6,740                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | N80 HP           | 4,800                      | 714                       | --   | 560 | 716   | 7,150               | --             | 7,150      | 7,150      | 7,130              | 7,930                                   | 7,130                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | C90              | 3,610                      | 677                       | --   | 532 | 681   | 6,780               | --             | 6,780      | 6,780      | 6,750              | 7,510                                   | 7,470                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | USS C90          | 3,610                      | 677                       | --   | 532 | 681   | 6,780               | --             | 6,780      | 6,780      | 6,750              | 7,510                                   | 7,470                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | C95              | 3,710                      | 714                       | --   | 560 | 716   | 7,150               | --             | 7,150      | 7,150      | 7,130              | 7,930                                   | 7,130                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | T95              | 3,710                      | 714                       | --   | 560 | 716   | 7,150               | --             | 7,150      | 7,150      | 7,130              | 7,930                                   | 7,870                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | USS C95          | 3,710                      | 714                       | --   | 560 | 716   | 7,150               | --             | 7,150      | 7,150      | 7,130              | 7,930                                   | 7,870                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | USS C100         | 3,790                      | 752                       | --   | 589 | 751   | 7,530               | --             | 7,530      | 7,530      | 7,500              | 8,350                                   | 8,260                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | C110             | 3,920                      | 827                       | --   | --  | --    | 8,280               | --             | --         | --         | 8,250              | 9,180                                   | 9,060                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | P110 SR16        | 3,920                      | 827                       | --   | 654 | 845   | 8,280               | --             | 8,280      | 8,280      | 8,250              | 9,180                                   | 8,550                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | P110             | 3,920                      | 827                       | --   | 654 | 845   | 8,280               | --             | 8,280      | 8,280      | 8,250              | 9,180                                   | 9,430                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | P110 HC          | 4,790                      | 827                       | --   | 654 | 845   | 8,280               | --             | 8,280      | 8,280      | 8,250              | 9,180                                   | 9,430                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | P110 HP          | 5,200                      | 940                       | --   | 720 | 902   | 9,410               | --             | 9,410      | 9,410      | 9,380              | 10,430                                  | 9,880                      | 8.500                          | 8.125 |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | Q125             | 4,050                      | 940                       | --   | 733 | 926   | 9,410               | --             | 9,410      | 9,410      | 9,380              | 10,430                                  | 10,270                     | 8.500                          | --    |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | Q125 HC          | 4,880                      | 940                       | --   | 733 | 926   | 9,410               | --             | 9,410      | 9,410      | 9,380              | 10,430                                  | 10,270                     | 8.500                          | --    |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | Q125 HP          | 5,290                      | 1,015                     | --   | 775 | 972   | 10,160              | --             | 10,160     | 10,160     | 10,130             | 11,270                                  | 10,700                     | 8.500                          | --    |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | USS140           | 4,080                      | 1,053                     | --   | 819 | 1,032 | 10,540              | --             | 10,540     | 10,540     | 10,500             | 11,680                                  | 11,490                     | 8.500                          | --    |
| 7 5/8                           | 26.40        | 25.59        | 0.328              | 6.969             | 6.844               | --                        | USS V150         | 4,080                      | 1,128                     | --   | 876 | 1,102 | 11,290              | --             | 11,290     | 11,290     | 11,250             | 12,520                                  | 12,320                     | 8.500                          | --    |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | USS GT80S        | 4,790                      | 683                       | --   | 566 | 721   | 6,880               | --             | 6,880      | 6,880      | 6,850              | 7,590                                   | 7,350                      | 8.500                          | 8.125 |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | L80              | 4,790                      | 683                       | --   | 566 | 721   | 6,880               | --             | 6,880      | 6,880      | 6,850              | 7,590                                   | 7,350                      | 8.500                          | 8.125 |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | L80 HC           | 5,780                      | 683                       | --   | 566 | 721   | 6,880               | --             | 6,880      | 6,880      | 6,850              | 7,590                                   | 7,350                      | 8.500                          | 8.125 |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | L80 HP           | 6,220                      | 726                       | --   | 591 | 733   | 7,310               | --             | 7,310      | 7,310      | 7,280              | 8,060                                   | 7,350                      | 8.500                          | 8.125 |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | N80n             | 4,790                      | 683                       | --   | 575 | 749   | 6,880               | --             | 6,880      | 6,880      | 6,850              | 7,590                                   | 6,400                      | 8.500                          | 8.125 |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | N80              | 4,790                      | 683                       | --   | 575 | 749   | 6,880               | --             | 6,880      | 6,880      | 6,850              | 7,590                                   | 7,730                      | 8.500                          | 8.125 |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | N80 HC           | 5,950                      | 683                       | --   | 575 | 749   | 6,880               | --             | 6,880      | 6,880      | 6,850              | 7,590                                   | 7,730                      | 8.500                          | 8.125 |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | N80 HP           | 6,470                      | 811                       | --   | 659 | 813   | 8,170               | --             | 8,170      | 8,170      | 8,130              | 9,010                                   | 8,180                      | 8.500                          | 8.125 |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |            |            | Internal Yield      |                |                    |                      | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter  |        |                            |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|------------|------------|---------------------|----------------|--------------------|----------------------|--|-------------------|--------|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |            |            | Pipe<br>Body<br>psi | API Historical |                    |                      |  | Lame' - Von Mises |        | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC<br>psi | LTC<br>psi |                     | BTC<br>psi     | Open<br>End<br>psi | Capped<br>End<br>psi |  |                   |        |                            |                                |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | C90              | 5,030                         | 769                       | --   | 625        | 773        | 7,740               | --             | 7,740              | 7,740                | 7,710                                      | 8,540             | 8,580  | 8.500                      | 8.125                          |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | USS C90          | 5,030                         | 769                       | --   | 625        | 773        | 7,740               | --             | 7,740              | 7,740                | 7,710                                      | 8,540             | 8,580  | 8.500                      | 8.125                          |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | C95              | 5,130                         | 811                       | --   | 659        | 813        | 8,170               | --             | 8,170              | 8,170                | 8,130                                      | 9,010             | 8,180  | 8.500                      | 8.125                          |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | T95              | 5,130                         | 811                       | --   | 659        | 813        | 8,170               | --             | 8,170              | 8,170                | 8,130                                      | 9,010             | 9,040  | 8.500                      | 8.125                          |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | USS C95          | 5,130                         | 811                       | --   | 659        | 813        | 8,170               | --             | 8,170              | 8,170                | 8,130                                      | 9,010             | 9,040  | 8.500                      | 8.125                          |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | USS C100         | 5,220                         | 854                       | --   | 692        | 853        | 8,600               | --             | 8,600              | 8,600                | 8,560                                      | 9,490             | 9,490  | 8.500                      | 8.125                          |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | C110             | 5,350                         | 940                       | --   | --         | --         | 9,460               | --             | --                 | --                   | 9,420                                      | 10,440            | 10,400 | 8.500                      | 8.125                          |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | P110 SR16        | 5,350                         | 940                       | --   | 769        | 960        | 9,460               | --             | 9,460              | 9,460                | 9,420                                      | 10,440            | 9,810  | 8.500                      | 8.125                          |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | P110             | 5,350                         | 940                       | --   | 769        | 960        | 9,460               | --             | 9,460              | 9,460                | 9,420                                      | 10,440            | 10,840 | 8.500                      | 8.125                          |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | P110 HC          | 6,700                         | 940                       | --   | 769        | 960        | 9,460               | --             | 9,460              | 9,460                | 9,420                                      | 10,440            | 10,840 | 8.500                      | 8.125                          |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | P110 HP          | 7,260                         | 1,068                     | --   | 846        | 1,025      | 10,750              | --             | 10,750             | 10,750               | 10,700                                     | 11,860            | 11,360 | 8.500                      | 8.125                          |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | Q125             | 5,670                         | 1,068                     | --   | 861        | 1,052      | 10,750              | --             | 10,750             | 10,750               | 10,700                                     | 11,860            | 11,790 | 8.500                      | --                             |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | Q125 HC          | 6,880                         | 1,068                     | --   | 861        | 1,052      | 10,750              | --             | 10,750             | 10,750               | 10,700                                     | 11,860            | 11,790 | 8.500                      | --                             |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | Q125 HP          | 7,450                         | 1,153                     | --   | 911        | 1,104      | 11,610              | --             | 11,610             | 11,610               | 11,560                                     | 12,810            | 12,290 | 8.500                      | --                             |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | USS140           | 5,930                         | 1,196                     | --   | 962        | 1,172      | 12,040              | --             | 12,040             | 12,040               | 11,990                                     | 13,280            | 13,200 | 8.500                      | --                             |
| 7 5/8                           | 29.70        | 29.06        | 0.375              | 6.875             | 6.750               | --                        | USS V150         | 6,060                         | 1,281                     | --   | 1,030      | 1,252      | 12,900              | --             | 12,900             | 12,900               | 12,840                                     | 14,230            | 14,150 | 8.500                      | --                             |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | USS GT80S        | 6,560                         | 778                       | --   | 664        | 820        | 7,890               | --             | 7,890              | 7,890                | 7,840                                      | 8,650             | 8,470  | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | L80              | 6,560                         | 778                       | --   | 664        | 820        | 7,890               | --             | 7,890              | 7,890                | 7,840                                      | 8,650             | 8,470  | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | L80 HC           | 7,460                         | 778                       | --   | 664        | 820        | 7,890               | --             | 7,890              | 7,890                | 7,840                                      | 8,650             | 8,470  | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | L80 HP           | 7,940                         | 826                       | --   | 693        | 834        | 8,380               | --             | 8,380              | 8,380                | 8,330                                      | 9,190             | 8,470  | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | N80n             | 6,560                         | 778                       | --   | 674        | 852        | 7,890               | --             | 7,890              | 7,890                | 7,840                                      | 8,650             | 7,370  | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | N80              | 6,560                         | 778                       | --   | 674        | 852        | 7,890               | --             | 7,890              | 7,890                | 7,840                                      | 8,650             | 8,920  | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | N80 HC           | 7,740                         | 778                       | --   | 674        | 852        | 7,890               | --             | 7,890              | 7,890                | 7,840                                      | 8,650             | 8,920  | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | N80 HP           | 8,420                         | 923                       | --   | 772        | 925        | 9,370               | --             | 9,370              | 9,370                | 9,310                                      | 10,270            | 9,430  | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | C90              | 7,050                         | 875                       | --   | 733        | 880        | 8,880               | --             | 8,880              | 8,880                | 8,820                                      | 9,730             | 9,900  | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | USS C90          | 7,050                         | 875                       | --   | 733        | 880        | 8,880               | --             | 8,880              | 8,880                | 8,820                                      | 9,730             | 9,900  | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | C95              | 7,280                         | 923                       | --   | 772        | 925        | 9,370               | --             | 9,370              | 9,370                | 9,310                                      | 10,270            | 9,430  | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | T95              | 7,280                         | 923                       | --   | 772        | 925        | 9,370               | --             | 9,370              | 9,370                | 9,310                                      | 10,270            | 10,420 | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | USS C95          | 7,280                         | 923                       | --   | 772        | 925        | 9,370               | --             | 9,370              | 9,370                | 9,310                                      | 10,270            | 10,420 | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | USS C100         | 7,490                         | 972                       | --   | 812        | 971        | 9,860               | --             | 9,860              | 9,860                | 9,800                                      | 10,810            | 10,950 | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | C110             | 7,870                         | 1,069                     | --   | --         | --         | 10,850              | --             | --                 | --                   | 10,780                                     | 11,890            | 12,000 | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | P110 SR16        | 7,870                         | 1,069                     | --   | 901        | 1,093      | 10,850              | --             | 10,850             | 10,850               | 10,780                                     | 11,890            | 11,310 | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | P110             | 7,870                         | 1,069                     | --   | 901        | 1,093      | 10,850              | --             | 10,850             | 10,850               | 10,780                                     | 11,890            | 12,500 | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | P110 HC          | 9,110                         | 1,069                     | --   | 901        | 1,093      | 10,850              | --             | 10,850             | 10,850               | 10,780                                     | 11,890            | 12,500 | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | P110 HP          | 9,850                         | 1,215                     | --   | 992        | 1,166      | 12,330              | --             | 12,330             | 12,330               | 12,250                                     | 13,510            | 13,100 | 8.500                      | 8.125                          |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | Q125             | 8,350                         | 1,215                     | --   | 1,009      | 1,197      | 12,330              | --             | 12,330             | 12,330               | 12,250                                     | 13,510            | 13,600 | 8.500                      | --                             |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | Q125 HC          | 9,460                         | 1,215                     | --   | 1,009      | 1,197      | 12,330              | --             | 12,330             | 12,330               | 12,250                                     | 13,510            | 13,600 | 8.500                      | --                             |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | Q125 HP          | 10,220                        | 1,312                     | --   | 1,068      | 1,257      | 13,310              | --             | 13,310             | 13,310               | 13,230                                     | 14,590            | 14,180 | 8.500                      | --                             |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | USS140           | 8,690                         | 1,361                     | --   | 1,128      | 1,334      | 13,810              | --             | 13,810             | 13,810               | 13,720                                     | 15,130            | 15,230 | 8.500                      | --                             |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |       |       | Internal Yield      |                |            |            |                    | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |       |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|----------------|------------|------------|--------------------|--|----------------------------|--------------------------------|-------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |       |       | Pipe<br>Body<br>psi | API Historical |            |            | Lame' - Von Mises  |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |       |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |       |       |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi | Capped<br>End<br>psi                       |                            |                                |       |
|                                 |              |              |                    |                   |                     |                           |                  |                               |                           |  |       |       |                     |                |            |            |                    |  |                            |                                |       |
| 7 5/8                           | 33.70        | 33.07        | 0.430              | 6.765             | 6.640               | --                        | USS V150         | 8,850                         | 1,458                     | --   | 1,207 | 1,424 | 14,790              | --             | 14,790     | 14,790     | 14,700             | 16,210                                     | 16,320                     | 8.500                          | --    |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | USS GT80S        | 8,820                         | 895                       | --   | 786   | 945   | 9,190               | --             | 9,190      | 9,190      | 9,110              | 9,970                                      | 9,940                      | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | L80              | 8,820                         | 895                       | --   | 786   | 945   | 9,190               | --             | 9,190      | 9,190      | 9,110              | 9,970                                      | 9,940                      | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | L80 HC           | 9,480                         | 895                       | --   | 786   | 945   | 9,190               | --             | 9,190      | 9,190      | 9,110              | 9,970                                      | 9,940                      | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | L80 HP           | 10,010                        | 951                       | --   | 820   | 961   | 9,770               | --             | 9,770      | 9,770      | 9,680              | 10,590                                     | 9,940                      | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | N80n             | 8,820                         | 895                       | --   | 798   | 981   | 9,190               | --             | 9,190      | 9,190      | 9,110              | 9,970                                      | 8,650                      | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | N80              | 8,820                         | 895                       | --   | 798   | 981   | 9,190               | --             | 9,190      | 9,190      | 9,110              | 9,970                                      | 10,470                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | N80 HC           | 9,910                         | 895                       | --   | 798   | 981   | 9,190               | --             | 9,190      | 9,190      | 9,110              | 9,970                                      | 10,470                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | N80 HP           | 10,770                        | 1,063                     | --   | 914   | 1,065 | 10,910              | --             | 10,490     | 9,790      | 10,820             | 11,840                                     | 11,070                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | C90              | 9,620                         | 1,007                     | --   | 867   | 1,013 | 10,340              | --             | 10,340     | 10,340     | 10,250             | 11,220                                     | 11,630                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | USS C90          | 9,620                         | 1,007                     | --   | 867   | 1,013 | 10,340              | --             | 10,340     | 10,340     | 10,250             | 11,220                                     | 11,630                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | C95              | 10,000                        | 1,063                     | --   | 914   | 1,065 | 10,910              | --             | 10,910     | 10,910     | 10,820             | 11,840                                     | 11,070                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | T95              | 10,000                        | 1,063                     | --   | 914   | 1,065 | 10,910              | --             | 10,910     | 10,910     | 10,820             | 11,840                                     | 12,240                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | USS C95          | 10,000                        | 1,063                     | --   | 914   | 1,065 | 10,910              | --             | 10,910     | 10,910     | 10,820             | 11,840                                     | 12,240                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | USS C100         | 10,370                        | 1,119                     | --   | 960   | 1,118 | 11,490              | --             | 11,490     | 11,490     | 11,390             | 12,460                                     | 12,860                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | C110             | 11,080                        | 1,231                     | --   | --    | --    | 12,640              | --             | --         | --         | 12,530             | 13,710                                     | 14,100                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | P110 SR16        | 11,080                        | 1,231                     | --   | 1,066 | 1,258 | 12,640              | --             | 12,640     | 12,640     | 12,530             | 13,710                                     | 13,280                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | P110             | 11,080                        | 1,231                     | --   | 1,066 | 1,258 | 12,640              | --             | 12,640     | 12,640     | 12,530             | 13,710                                     | 14,680                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | P110 HC          | 12,180                        | 1,231                     | --   | 1,066 | 1,258 | 12,640              | --             | 12,640     | 12,640     | 12,530             | 13,710                                     | 14,680                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | P110 HP          | 13,130                        | 1,399                     | --   | 1,173 | 1,343 | 14,360              | --             | 14,360     | 13,460     | 14,240             | 15,580                                     | 15,380                     | 8.500                          | 8.125 |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | Q125             | 12,060                        | 1,399                     | --   | 1,194 | 1,379 | 14,360              | --             | 14,360     | 14,360     | 14,240             | 15,580                                     | 15,980                     | 8.500                          | --    |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | Q125 HC          | 12,810                        | 1,399                     | --   | 1,194 | 1,379 | 14,360              | --             | 14,360     | 14,360     | 14,240             | 15,580                                     | 15,980                     | 8.500                          | --    |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | Q125 HP          | 13,790                        | 1,511                     | --   | 1,264 | 1,447 | 15,510              | --             | 15,510     | 15,290     | 15,380             | 16,820                                     | 16,650                     | 8.500                          | --    |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | USS140           | 12,930                        | 1,567                     | --   | 1,335 | 1,536 | 16,080              | --             | 16,080     | 16,080     | 15,950             | 17,450                                     | 17,890                     | 8.500                          | --    |
| 7 5/8                           | 39.00        | 38.08        | 0.500              | 6.625             | 6.500               | --                        | USS V150         | 13,440                        | 1,679                     | --   | 1,428 | 1,640 | 17,230              | --             | 17,230     | 17,230     | 17,090             | 18,690                                     | 19,170                     | 8.500                          | --    |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | USS GT80S        | 10,810                        | 998                       | --   | 891   | 1,053 | 10,320              | --             | 10,320     | 9,790      | 10,220             | 11,120                                     | 11,240                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | L80              | 10,810                        | 998                       | --   | 891   | 1,053 | 10,320              | --             | 10,320     | 9,790      | 10,220             | 11,120                                     | 11,240                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | L80 HC           | 11,170                        | 998                       | --   | 891   | 1,053 | 10,320              | --             | 10,320     | 9,790      | 10,220             | 11,120                                     | 11,240                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | L80 HP           | 11,740                        | 1,060                     | --   | 930   | 1,070 | 10,970              | --             | 10,490     | 9,790      | 10,850             | 11,820                                     | 11,240                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | N80n             | 10,810                        | 998                       | --   | 905   | 1,093 | 10,320              | --             | 10,320     | 9,790      | 10,220             | 11,120                                     | 9,760                      | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | N80              | 10,810                        | 998                       | --   | 905   | 1,093 | 10,320              | --             | 10,320     | 9,790      | 10,220             | 11,120                                     | 11,830                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | N80 HC           | 11,730                        | 998                       | --   | 905   | 1,093 | 10,320              | --             | 10,320     | 9,790      | 10,220             | 11,120                                     | 11,830                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | N80 HP           | 12,750                        | 1,185                     | --   | 1,037 | 1,187 | 12,260              | --             | 10,490     | 9,790      | 12,130             | 13,210                                     | 12,520                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | C90              | 11,890                        | 1,122                     | --   | 983   | 1,129 | 11,610              | --             | 11,610     | 11,010     | 11,490             | 12,510                                     | 13,160                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | USS C90          | 11,890                        | 1,122                     | --   | 983   | 1,129 | 11,610              | --             | 11,610     | 11,010     | 11,490             | 12,510                                     | 13,160                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | C95              | 12,410                        | 1,185                     | --   | 1,037 | 1,187 | 12,260              | --             | 12,260     | 11,620     | 12,130             | 13,210                                     | 12,520                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | T95              | 12,410                        | 1,185                     | --   | 1,037 | 1,187 | 12,260              | --             | 12,260     | 11,620     | 12,130             | 13,210                                     | 13,850                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | USS C95          | 12,410                        | 1,185                     | --   | 1,037 | 1,187 | 12,260              | --             | 12,260     | 11,620     | 12,130             | 13,210                                     | 13,850                     | 8.500                          | 8.125 |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | USS C100         | 12,920                        | 1,247                     | --   | 1,090 | 1,245 | 12,910              | --             | 12,910     | 12,240     | 12,770             | 13,900                                     | 14,540                     | 8.500                          | 8.125 |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | TENSION                       |                           |  |       |       | Internal Yield      |                                   |        |        |                    | Ductile Rupture      |                      | Outside Diameter           |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|-----------------------------------|--------|--------|--------------------|----------------------|----------------------|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade | Collapse<br>Resistance<br>psi | Joint Strength, 1,000 lbs |  |       |       | Pipe<br>Body<br>psi | API Historical                    |        |        | Lame' - Von Mises  |                      | Capped<br>End<br>psi | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |       |       |                     | Threaded & Coupled<br>STC LTC BTC |        |        | Open<br>End<br>psi | Capped<br>End<br>psi |                      |                            |                                |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | C110             | 13,930                        | 1,372                     | --   | --    | --    | 14,200              | --                                | --     | --     | 14,050             | 15,290               | 15,940               | 8.500                      | 8.125                          |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | P110 SR16        | 13,930                        | 1,372                     | --   | 1,210 | 1,402 | 14,200              | --                                | 14,200 | 13,460 | 14,050             | 15,290               | 15,010               | 8.500                      | 8.125                          |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | P110             | 13,930                        | 1,372                     | --   | 1,210 | 1,402 | 14,200              | --                                | 14,200 | 13,460 | 14,050             | 15,290               | 16,610               | 8.500                      | 8.125                          |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | P110 HC          | 14,770                        | 1,372                     | --   | 1,210 | 1,402 | 14,200              | --                                | 14,200 | 13,460 | 14,050             | 15,290               | 16,610               | 8.500                      | 8.125                          |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | P110 HP          | 15,890                        | 1,559                     | --   | 1,331 | 1,496 | 16,130              | --                                | 14,430 | 13,460 | 15,960             | 17,380               | 17,400               | 8.500                      | 8.125                          |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | Q125             | 15,350                        | 1,559                     | --   | 1,355 | 1,536 | 16,130              | --                                | 16,130 | 15,290 | 15,960             | 17,380               | 18,070               | 8.500                      | --                             |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | Q125 HC          | 15,670                        | 1,559                     | --   | 1,355 | 1,536 | 16,130              | --                                | 16,130 | 15,290 | 15,960             | 17,380               | 18,070               | 8.500                      | --                             |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | Q125 HP          | 16,840                        | 1,683                     | --   | 1,434 | 1,612 | 17,420              | --                                | 16,400 | 15,290 | 17,240             | 18,770               | 18,840               | 8.500                      | --                             |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | USS140           | 16,680                        | 1,746                     | --   | 1,514 | 1,711 | 18,070              | --                                | 18,070 | 17,130 | 17,880             | 19,460               | 20,230               | 8.500                      | --                             |
| 7 5/8                           | 42.80        | 42.43        | 0.562              | 6.501             | 6.376               | --                        | USS V150         | 17,500                        | 1,871                     | --   | 1,620 | 1,827 | 19,360              | --                                | 19,360 | 18,350 | 19,150             | 20,850               | 21,690               | 8.500                      | --                             |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | USS GT80S        | 11,510                        | 1,051                     | --   | 947   | 1,109 | 10,930              | --                                | 10,490 | 9,790  | 10,800             | 11,730               | 11,940               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | L80              | 11,510                        | 1,051                     | --   | 947   | 1,109 | 10,930              | --                                | 10,490 | 9,790  | 10,800             | 11,730               | 11,940               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | L80 HC           | 12,050                        | 1,051                     | --   | 947   | 1,109 | 10,930              | --                                | 10,490 | 9,790  | 10,800             | 11,730               | 11,940               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | L80 HP           | 12,640                        | 1,117                     | --   | 988   | 1,128 | 11,620              | --                                | 10,490 | 9,790  | 11,480             | 12,460               | 11,940               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | N80n             | 11,510                        | 1,051                     | --   | 962   | 1,152 | 10,930              | --                                | 10,490 | 9,790  | 10,800             | 11,730               | 10,370               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | N80              | 11,510                        | 1,051                     | --   | 962   | 1,152 | 10,930              | --                                | 10,490 | 9,790  | 10,800             | 11,730               | 12,570               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | N80 HC           | 12,660                        | 1,051                     | --   | 962   | 1,152 | 10,930              | --                                | 10,490 | 9,790  | 10,800             | 11,730               | 12,570               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | N80 HP           | 13,760                        | 1,248                     | --   | 1,101 | 1,238 | 12,980              | --                                | 10,490 | 9,790  | 12,830             | 13,930               | 13,300               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | C90              | 12,950                        | 1,183                     | --   | 1,045 | 1,189 | 12,300              | --                                | 11,810 | 11,010 | 12,150             | 13,190               | 13,980               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | USS C90          | 12,950                        | 1,183                     | --   | 1,045 | 1,189 | 12,300              | --                                | 11,810 | 11,010 | 12,150             | 13,190               | 13,980               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | C95              | 13,670                        | 1,248                     | --   | 1,101 | 1,251 | 12,980              | --                                | 12,460 | 11,620 | 12,830             | 13,930               | 13,300               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | T95              | 13,670                        | 1,248                     | --   | 1,101 | 1,251 | 12,980              | --                                | 12,460 | 11,620 | 12,830             | 13,930               | 14,720               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | USS C95          | 13,670                        | 1,248                     | --   | 1,101 | 1,251 | 12,980              | --                                | 12,460 | 11,620 | 12,830             | 13,930               | 14,720               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | USS C100         | 14,280                        | 1,314                     | --   | 1,157 | 1,312 | 13,670              | --                                | 13,120 | 12,240 | 13,500             | 14,660               | 15,460               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | C110             | 15,440                        | 1,446                     | --   | --    | --    | 15,030              | --                                | --     | --     | 14,850             | 16,120               | 16,950               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | P110 SR16        | 15,440                        | 1,446                     | --   | 1,285 | 1,477 | 15,030              | --                                | 14,430 | 13,460 | 14,850             | 16,120               | 15,950               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | P110             | 15,440                        | 1,446                     | --   | 1,285 | 1,477 | 15,030              | --                                | 14,430 | 13,460 | 14,850             | 16,120               | 17,660               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | P110 HC          | 16,090                        | 1,446                     | --   | 1,285 | 1,477 | 15,030              | --                                | 14,430 | 13,460 | 14,850             | 16,120               | 17,660               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | P110 HP          | 17,310                        | 1,643                     | --   | 1,414 | 1,548 | 17,080              | --                                | 14,430 | 13,460 | 16,880             | 18,320               | 18,500               | 8.500                      | 8.125                          |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | Q125             | 17,100                        | 1,643                     | --   | 1,439 | 1,619 | 17,080              | --                                | 16,400 | 15,290 | 16,880             | 18,320               | 19,210               | 8.500                      | --                             |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | Q125 HC          | 17,140                        | 1,643                     | --   | 1,439 | 1,619 | 17,080              | --                                | 16,400 | 15,290 | 16,880             | 18,320               | 19,210               | 8.500                      | --                             |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | Q125 HP          | 18,400                        | 1,774                     | --   | 1,523 | 1,672 | 18,450              | --                                | 16,400 | 15,290 | 18,230             | 19,790               | 20,020               | 8.500                      | --                             |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | USS140           | 18,670                        | 1,840                     | --   | 1,608 | 1,803 | 19,130              | --                                | 18,360 | 17,130 | 18,910             | 20,520               | 21,510               | 8.500                      | --                             |
| 7 5/8                           | 45.30        | 44.71        | 0.595              | 6.435             | 6.310               | --                        | USS V150         | 19,660                        | 1,971                     | --   | 1,721 | 1,926 | 20,500              | --                                | 19,680 | 18,350 | 20,260             | 21,990               | 23,060               | 8.500                      | --                             |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | USS GT80S        | 12,040                        | 1,100                     | --   | 997   | 1,160 | 11,480              | --                                | 10,490 | 9,790  | 11,330             | 12,270               | 12,580               | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | L80              | 12,040                        | 1,100                     | --   | 997   | 1,160 | 11,480              | --                                | 10,490 | 9,790  | 11,330             | 12,270               | 12,580               | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | L80 HC           | 12,830                        | 1,100                     | --   | 997   | 1,160 | 11,480              | --                                | 10,490 | 9,790  | 11,330             | 12,270               | 12,580               | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | L80 HP           | 13,450                        | 1,168                     | --   | 1,040 | 1,176 | 12,200              | --                                | 10,490 | 9,790  | 12,040             | 13,040               | 12,580               | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | N80n             | 12,040                        | 1,100                     | --   | 1,013 | 1,205 | 11,480              | --                                | 10,490 | 9,790  | 11,330             | 12,270               | 10,910               | 8.500                      | 8.125                          |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |       |       | Internal Yield      |                |            |            |                    |                      | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|----------------|------------|------------|--------------------|----------------------|--|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |       |       | Pipe<br>Body<br>psi | API Historical |            |            | Lame' - Von Mises  |                      |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |       |       |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi | Capped<br>End<br>psi |  |                            |                                |
|                                 |              |              |                    |                   |                     |                           |                  |                               |                           |  |       |       |                     |                |            |            |                    |                      |  |                            |                                |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | N80              | 12,040                        | 1,100                     | --   | 1,013 | 1,205 | 11,480              | --             | 10,490     | 9,790      | 11,330             | 12,270               | 13,240                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | N80 HC           | 13,500                        | 1,100                     | --   | 1,013 | 1,205 | 11,480              | --             | 10,490     | 9,790      | 11,330             | 12,270               | 13,240                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | N80 HP           | 14,670                        | 1,306                     | --   | 1,159 | 1,238 | 13,630              | --             | 10,490     | 9,790      | 13,450             | 14,570               | 14,010                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | C90              | 13,540                        | 1,237                     | --   | 1,100 | 1,238 | 12,910              | --             | 11,810     | 11,010     | 12,740             | 13,810               | 14,730                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | USS C90          | 13,540                        | 1,237                     | --   | 1,100 | 1,238 | 12,910              | --             | 11,810     | 11,010     | 12,740             | 13,810               | 14,730                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | C95              | 14,300                        | 1,306                     | --   | 1,159 | 1,300 | 13,630              | --             | 12,460     | 11,620     | 13,450             | 14,570               | 14,010                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | T95              | 14,300                        | 1,306                     | --   | 1,159 | 1,300 | 13,630              | --             | 12,460     | 11,620     | 13,450             | 14,570               | 15,510                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | USS C95          | 14,300                        | 1,306                     | --   | 1,159 | 1,300 | 13,630              | --             | 12,460     | 11,620     | 13,450             | 14,570               | 15,510                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | USS C100         | 15,050                        | 1,374                     | --   | 1,219 | 1,362 | 14,350              | --             | 13,120     | 12,240     | 14,160             | 15,340               | 16,290                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | C110             | 16,550                        | 1,512                     | --   | --    | --    | 15,780              | --             | --         | --         | 15,580             | 16,880               | 17,860                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | P110 SR16        | 16,550                        | 1,512                     | --   | 1,353 | 1,545 | 15,780              | --             | 14,430     | 13,460     | 15,580             | 16,880               | 16,800                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | P110             | 16,550                        | 1,512                     | --   | 1,353 | 1,545 | 15,780              | --             | 14,430     | 13,460     | 15,580             | 16,880               | 18,600                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | P110 HC          | 17,280                        | 1,512                     | --   | 1,353 | 1,545 | 15,780              | --             | 14,430     | 13,460     | 15,580             | 16,880               | 18,600                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | P110 HP          | 18,580                        | 1,718                     | --   | 1,489 | 1,548 | 17,930              | --             | 14,430     | 13,460     | 17,700             | 19,180               | 19,490                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | Q125             | 18,700                        | 1,718                     | --   | 1,515 | 1,672 | 17,930              | --             | 16,400     | 15,290     | 17,700             | 19,180               | 20,240                                     | 8.500                      | --                             |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | Q125 HC          | 18,440                        | 1,718                     | --   | 1,515 | 1,672 | 17,930              | --             | 16,400     | 15,290     | 17,700             | 19,180               | 20,240                                     | 8.500                      | --                             |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | Q125 HP          | 19,790                        | 1,855                     | --   | 1,603 | 1,672 | 19,370              | --             | 16,400     | 15,290     | 19,120             | 20,710               | 21,090                                     | 8.500                      | --                             |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | USS140           | 20,500                        | 1,924                     | --   | 1,693 | 1,858 | 20,090              | --             | 18,360     | 17,130     | 19,830             | 21,480               | 22,660                                     | 8.500                      | --                             |
| 7 5/8                           | 47.10        | 46.77        | 0.625              | 6.375             | 6.250               | --                        | USS V150         | 21,650                        | 2,062                     | --   | 1,812 | 1,981 | 21,520              | --             | 19,680     | 18,350     | 21,240             | 23,010               | 24,290                                     | 8.500                      | --                             |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | C90              | 14,760                        | 1,348                     | --   | --    | --    | 14,190              | --             | --         | --         | 13,960             | 15,060               | 16,300                                     | --                         | --                             |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | USS C90          | 14,760                        | 1,348                     | --   | --    | --    | 14,190              | --             | --         | --         | 13,960             | 15,060               | 16,300                                     | --                         | --                             |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | T95              | 15,580                        | 1,423                     | --   | --    | --    | 14,980              | --             | --         | --         | 14,740             | 15,900               | 17,160                                     | --                         | --                             |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | USS C95          | 15,580                        | 1,423                     | --   | --    | --    | 14,980              | --             | --         | --         | 14,740             | 15,900               | 17,160                                     | --                         | --                             |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | USS C100         | 16,390                        | 1,497                     | --   | --    | --    | 15,760              | --             | --         | --         | 15,520             | 16,730               | 18,020                                     | --                         | --                             |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | C110             | 18,030                        | 1,647                     | --   | --    | --    | 17,340              | --             | --         | --         | 17,070             | 18,410               | 19,760                                     | --                         | --                             |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | P110 SR16        | 18,030                        | 1,647                     | --   | 1,491 | 1,548 | 17,340              | --             | 14,430     | 13,460     | 17,070             | 18,410               | 18,580                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | P110             | 18,030                        | 1,647                     | --   | 1,491 | 1,548 | 17,340              | --             | 14,430     | 13,460     | 17,070             | 18,410               | 20,580                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | P110 HC          | 19,660                        | 1,647                     | --   | 1,491 | 1,548 | 17,340              | --             | 14,430     | 13,460     | 17,070             | 18,410               | 20,580                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | P110 HP          | 21,120                        | 1,872                     | --   | 1,640 | 1,548 | 19,710              | --             | 14,430     | 13,460     | 19,400             | 20,920               | 21,570                                     | 8.500                      | 8.125                          |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | Q125             | 20,490                        | 1,872                     | --   | 1,670 | 1,672 | 19,710              | --             | 16,400     | 15,290     | 19,400             | 20,920               | 22,400                                     | 8.500                      | --                             |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | Q125 HC          | 21,060                        | 1,872                     | --   | 1,670 | 1,672 | 19,710              | --             | 16,400     | 15,290     | 19,400             | 20,920               | 22,400                                     | 8.500                      | --                             |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | Q125 HP          | 22,580                        | 2,021                     | --   | 1,767 | 1,672 | 21,280              | --             | 16,400     | 15,290     | 20,950             | 22,590               | 23,340                                     | 8.500                      | --                             |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | USS140           | 22,950                        | 2,096                     | --   | 1,866 | 1,858 | 22,070              | --             | 18,360     | 17,130     | 21,720             | 23,430               | 25,070                                     | 8.500                      | --                             |
| 7 5/8                           | 51.20        | 50.95        | 0.687              | 6.251             | 6.126               | --                        | USS V150         | 24,590                        | 2,246                     | --   | 1,997 | 1,981 | 23,650              | --             | 19,680     | 18,350     | 23,270             | 25,100               | 26,880                                     | 8.500                      | --                             |
| 7 5/8                           | 55.30        | 55.12        | 0.750              | 6.125             | 6.000               | --                        | C90              | 15,960                        | 1,458                     | --   | --    | --    | 15,490              | --             | --         | --         | 15,200             | 16,310               | 17,930                                     | --                         | --                             |
| 7 5/8                           | 55.30        | 55.12        | 0.750              | 6.125             | 6.000               | --                        | USS C90          | 15,960                        | 1,458                     | --   | --    | --    | 15,490              | --             | --         | --         | 15,200             | 16,310               | 17,930                                     | --                         | --                             |
| 7 5/8                           | 55.30        | 55.12        | 0.750              | 6.125             | 6.000               | --                        | T95              | 16,850                        | 1,539                     | --   | --    | --    | 16,350              | --             | --         | --         | 16,040             | 17,220               | 18,870                                     | --                         | --                             |
| 7 5/8                           | 55.30        | 55.12        | 0.750              | 6.125             | 6.000               | --                        | USS C95          | 16,850                        | 1,539                     | --   | --    | --    | 16,350              | --             | --         | --         | 16,040             | 17,220               | 18,870                                     | --                         | --                             |
| 7 5/8                           | 55.30        | 55.12        | 0.750              | 6.125             | 6.000               | --                        | USS C100         | 17,730                        | 1,620                     | --   | --    | --    | 17,210              | --             | --         | --         | 16,880             | 18,130               | 19,820                                     | --                         | --                             |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |            |            | Internal Yield      |                |                    |                      |                   | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |       |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|------------|------------|---------------------|----------------|--------------------|----------------------|-------------------|--|----------------------------|--------------------------------|-------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |            |            | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |       |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC<br>psi | LTC<br>psi |                     | BTC<br>psi     | Open<br>End<br>psi | Capped<br>End<br>psi |                   |  |                            |                                |       |
| 7 5/8                           | 55.30        | 55.12        | 0.750              | 6.125             | 6.000               | --                        | C110             | 19,510                        | 1,782                     | --   | --         | --         | 18,930              | --             | --                 | --                   | 18,570            | 19,940                                     | 21,730                     | --                             | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | K55              | 7,790                         | 736                       | --   | 657        | 916        | 7,390               | --             | 7,210              | 6,730                | 7,310             | 7,940                                      | 11,590                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | USS GT80S        | 11,340                        | 1,070                     | --   | 841        | 1,001      | 10,760              | --             | 10,490             | 9,790                | 10,630            | 11,550                                     | 11,740                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | L80              | 11,340                        | 1,070                     | --   | 841        | 1,001      | 10,760              | --             | 10,490             | 9,790                | 10,630            | 11,550                                     | 11,740                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | L80 HC           | 11,790                        | 1,070                     | --   | 841        | 1,001      | 10,760              | --             | 10,490             | 9,790                | 10,630            | 11,550                                     | 11,740                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | L80 HP           | 12,380                        | 1,137                     | --   | 878        | 1,019      | 11,430              | --             | 10,490             | 9,790                | 11,300            | 12,270                                     | 11,740                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | N80n             | 11,340                        | 1,070                     | --   | 855        | 1,040      | 10,760              | --             | 10,490             | 9,790                | 10,630            | 11,550                                     | 10,200                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | N80              | 11,340                        | 1,070                     | --   | 855        | 1,040      | 10,760              | --             | 10,490             | 9,790                | 10,630            | 11,550                                     | 12,360                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | N80 HC           | 12,390                        | 1,070                     | --   | 855        | 1,040      | 10,760              | --             | 10,490             | 9,790                | 10,630            | 11,550                                     | 12,360                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | N80 HP           | 13,470                        | 1,271                     | --   | 978        | 1,129      | 12,770              | --             | 10,490             | 9,790                | 12,630            | 13,720                                     | 13,070                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | C90              | 12,750                        | 1,204                     | --   | 928        | 1,074      | 12,100              | --             | 11,810             | 11,010               | 11,960            | 13,000                                     | 13,740                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | USS C90          | 12,750                        | 1,204                     | --   | 928        | 1,074      | 12,100              | --             | 11,810             | 11,010               | 11,960            | 13,000                                     | 13,740                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | C95              | 13,320                        | 1,271                     | --   | 978        | 1,129      | 12,770              | --             | 12,460             | 11,620               | 12,630            | 13,720                                     | 13,070                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | T95              | 13,320                        | 1,271                     | --   | 978        | 1,129      | 12,770              | --             | 12,460             | 11,620               | 12,630            | 13,720                                     | 14,470                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | USS C95          | 13,320                        | 1,271                     | --   | 978        | 1,129      | 12,770              | --             | 12,460             | 11,620               | 12,630            | 13,720                                     | 14,470                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | USS C100         | 13,880                        | 1,337                     | --   | 1,028      | 1,185      | 13,450              | --             | 13,120             | 12,240               | 13,290            | 14,440                                     | 15,190                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | C110             | 15,000                        | 1,471                     | --   | --         | --         | 14,790              | --             | --                 | --                   | 14,620            | 15,880                                     | 16,660                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | P110 SR16        | 15,000                        | 1,471                     | --   | 1,142      | 1,334      | 14,790              | --             | 14,430             | 13,460               | 14,620            | 15,880                                     | 15,680                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | P110             | 15,000                        | 1,471                     | --   | 1,142      | 1,334      | 14,790              | --             | 14,430             | 13,460               | 14,620            | 15,880                                     | 17,350                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | P110 HC          | 15,710                        | 1,471                     | --   | 1,142      | 1,334      | 14,790              | --             | 14,430             | 13,460               | 14,620            | 15,880                                     | 17,350                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | P110 HP          | 16,900                        | 1,672                     | --   | 1,256      | 1,423      | 16,810              | --             | 14,430             | 13,460               | 16,610            | 18,050                                     | 18,180                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | Q125             | 16,590                        | 1,672                     | --   | 1,279      | 1,462      | 16,810              | --             | 16,400             | 15,290               | 16,610            | 18,050                                     | 18,880                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | Q125 HC          | 16,710                        | 1,672                     | --   | 1,279      | 1,462      | 16,810              | --             | 16,400             | 15,290               | 16,610            | 18,050                                     | 18,880                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | Q125 HP          | 17,950                        | 1,805                     | --   | 1,353      | 1,534      | 18,150              | --             | 16,400             | 15,290               | 17,940            | 19,490                                     | 19,680                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | USS140           | 18,090                        | 1,872                     | --   | 1,429      | 1,628      | 18,820              | --             | 18,360             | 17,130               | 18,610            | 20,220                                     | 21,140                     | 8.500                          | --    |
| 7 3/4                           | 46.10        | 45.51        | 0.595              | 6.560             | 6.435               | 6.500                     | USS V150         | 19,030                        | 2,006                     | --   | 1,529      | 1,739      | 20,170              | --             | 19,680             | 18,350               | 19,940            | 21,660                                     | 22,660                     | 8.500                          | --    |
| 8 5/8                           | 24.00        | 23.60        | 0.264              | 8.097             | 7.972               | --                        | J55              | 1,370                         | 381                       | 244  | --         | --         | 2,950               | 2,950          | --                 | --                   | 2,940             | 3,300                                      | 2,920                      | 9.625                          | 9.125 |
| 8 5/8                           | 24.00        | 23.60        | 0.264              | 8.097             | 7.972               | --                        | K55              | 1,370                         | 381                       | 263  | --         | --         | 2,950               | 2,950          | --                 | --                   | 2,940             | 3,300                                      | 3,700                      | 9.625                          | 9.125 |
| 8 5/8                           | 24.00        | 23.60        | 0.264              | 8.097             | 7.972               | --                        | USS HCK55        | 1,540                         | 381                       | 263  | --         | --         | 2,950               | 2,950          | --                 | --                   | 2,940             | 3,300                                      | 3,700                      | 9.625                          | 9.125 |
| 8 5/8                           | 24.00        | 23.60        | 0.264              | 8.097             | 7.972               | --                        | USS FS80         | 1,800                         | 520                       | 326  | --         | --         | 4,020               | 4,020          | --                 | --                   | 4,010             | 4,500                                      | 4,500                      | 9.625                          | 9.125 |
| 8 5/8                           | 28.00        | 27.04        | 0.304              | 8.017             | 7.892               | --                        | H40              | 1,610                         | 318                       | 233  | --         | --         | 2,470               | 2,470          | --                 | --                   | 2,460             | 2,750                                      | 2,680                      | 9.625                          | --    |
| 8 5/8                           | 28.00        | 27.04        | 0.304              | 8.017             | 7.892               | --                        | USS HCK55        | 2,410                         | 437                       | 335  | 377        | 599        | 3,390               | 3,390          | 3,390              | 3,390                | 3,380             | 3,790                                      | 4,270                      | 9.625                          | 9.125 |
| 8 5/8                           | 28.00        | 27.04        | 0.304              | 8.017             | 7.892               | --                        | USS FS80         | 2,630                         | 596                       | 414  | 464        | 651        | 4,630               | 4,630          | 4,630              | 4,630                | 4,610             | 5,160                                      | 5,200                      | 9.625                          | 9.125 |
| 8 5/8                           | 32.00        | 31.13        | 0.352              | 7.921             | 7.796               | 7.875                     | H40              | 2,200                         | 366                       | 279  | --         | --         | 2,860               | 2,860          | --                 | --                   | 2,850             | 3,170                                      | 3,110                      | 9.625                          | --    |
| 8 5/8                           | 32.00        | 31.13        | 0.352              | 7.921             | 7.796               | 7.875                     | J55              | 2,530                         | 503                       | 372  | 417        | 579        | 3,930               | 3,930          | 3,930              | 3,930                | 3,920             | 4,360                                      | 3,920                      | 9.625                          | 9.125 |
| 8 5/8                           | 32.00        | 31.13        | 0.352              | 7.921             | 7.796               | 7.875                     | K55              | 2,530                         | 503                       | 402  | 452        | 690        | 3,930               | 3,930          | 3,930              | 3,930                | 3,920             | 4,360                                      | 4,960                      | 9.625                          | 9.125 |
| 8 5/8                           | 32.00        | 31.13        | 0.352              | 7.921             | 7.796               | 7.875                     | USS HCK55        | 3,740                         | 503                       | 402  | 452        | 690        | 3,930               | 3,930          | 3,930              | 3,930                | 3,920             | 4,360                                      | 4,960                      | 9.625                          | 9.125 |
| 8 5/8                           | 32.00        | 31.13        | 0.352              | 7.921             | 7.796               | 7.875                     | USS FS80         | 3,820                         | 686                       | 497  | 556        | 750        | 5,360               | 5,360          | 5,360              | 5,360                | 5,340             | 5,950                                      | 6,050                      | 9.625                          | 9.125 |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | J55              | 3,450                         | 568                       | 434  | 486        | 654        | 4,460               | 4,460          | 4,460              | 4,460                | 4,450             | 4,930                                      | 4,470                      | 9.625                          | 9.125 |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |                     |                                   | Internal Yield |                    |                      |                   |                 |            | Ductile<br>Rupture<br>Capped | Outside Diameter |            |         |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|---------------------|-----------------------------------|----------------|--------------------|----------------------|-------------------|-----------------|------------|------------------------------|------------------|------------|---------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |                     |                                   | API Historical |                    |                      | Lame' - Von Mises |                 | End<br>psi |                              | End<br>psi       | End<br>psi | Regular |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC LTC BTC |                | Open<br>End<br>psi | Capped<br>End<br>psi | Coupling<br>in.   | Coupling<br>in. |            |                              |                  |            |         |
|                                 |              |              |                    |                   |                     |                           |                  |                               |                           |  |                     |                                   |                |                    |                      |                   |                 |            |                              |                  |            |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | K55              | 3,450                         | 568                       | 468  | 526                 | 780                               | 4,460          | 4,460              | 4,460                | 4,460             | 4,450           | 4,930      | 5,660                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | USS HCK55        | 4,830                         | 568                       | 468  | 526                 | 780                               | 4,460          | 4,460              | 4,460                | 4,460             | 4,450           | 4,930      | 5,660                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | USS FS80         | 5,110                         | 775                       | 578  | 648                 | 847                               | 6,090          | 6,090              | 6,090                | 6,090             | 6,060           | 6,730      | 6,900                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | USS GT80S        | 4,100                         | 827                       | --   | 678                 | 864                               | 6,490          | --                 | 6,490                | 6,490             | 6,470           | 7,180      | 6,920                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | L80              | 4,100                         | 827                       | --   | 678                 | 864                               | 6,490          | --                 | 6,490                | 6,490             | 6,470           | 7,180      | 6,920                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | L80 HC           | 5,110                         | 827                       | --   | 678                 | 864                               | 6,490          | --                 | 6,490                | 6,490             | 6,470           | 7,180      | 6,920                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | L80 HP           | 5,530                         | 879                       | --   | 708                 | 880                               | 6,900          | --                 | 6,900                | 6,900             | 6,870           | 7,620      | 6,920                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | N80n             | 4,100                         | 827                       | --   | 688                 | 895                               | 6,490          | --                 | 6,490                | 6,490             | 6,470           | 7,180      | 6,030                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | N80              | 4,100                         | 827                       | --   | 688                 | 895                               | 6,490          | --                 | 6,490                | 6,490             | 6,470           | 7,180      | 7,280                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | N80 HC           | 5,240                         | 827                       | --   | 688                 | 895                               | 6,490          | --                 | 6,490                | 6,490             | 6,470           | 7,180      | 7,280                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | N80 HP           | 5,700                         | 982                       | --   | 789                 | 976                               | 7,710          | --                 | 7,710                | 7,710             | 7,680           | 8,520      | 7,700                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | C90              | 4,250                         | 930                       | --   | 749                 | 928                               | 7,300          | --                 | 7,300                | 7,300             | 7,270           | 8,070      | 8,080                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | USS C90          | 4,250                         | 930                       | --   | 749                 | 928                               | 7,300          | --                 | 7,300                | 7,300             | 7,270           | 8,070      | 8,080                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | C95              | 4,350                         | 982                       | --   | 789                 | 976                               | 7,710          | --                 | 7,710                | 7,710             | 7,680           | 8,520      | 7,700                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | T95              | 4,350                         | 982                       | --   | 789                 | 976                               | 7,710          | --                 | 7,710                | 7,710             | 7,680           | 8,520      | 8,500                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | USS C95          | 4,350                         | 982                       | --   | 789                 | 976                               | 7,710          | --                 | 7,710                | 7,710             | 7,680           | 8,520      | 8,500                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | USS C100         | 4,480                         | 1,034                     | --   | 830                 | 1,025                             | 8,120          | --                 | 8,120                | 8,120             | 8,080           | 8,970      | 8,930                        | 9.625            | 9.125      |         |
| 8 5/8                           | 36.00        | 35.17        | 0.400              | 7.825             | 7.700               | --                        | C110             | 4,690                         | 1,137                     | --   | --                  | --                                | 8,930          | --                 | --                   | --                | 8,890           | 9,870      | 9,790                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | USS GT80S        | 5,520                         | 925                       | --   | 776                 | 966                               | 7,310          | --                 | 7,310                | 7,310             | 7,270           | 8,030      | 7,820                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | L80              | 5,520                         | 925                       | --   | 776                 | 966                               | 7,310          | --                 | 7,310                | 7,310             | 7,270           | 8,030      | 7,820                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | L80 HC           | 6,480                         | 925                       | --   | 776                 | 966                               | 7,310          | --                 | 7,310                | 7,310             | 7,270           | 8,030      | 7,820                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | L80 HP           | 6,950                         | 982                       | --   | 811                 | 984                               | 7,770          | --                 | 7,770                | 7,770             | 7,720           | 8,530      | 7,820                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | N80n             | 5,520                         | 925                       | --   | 788                 | 1,001                             | 7,310          | --                 | 7,310                | 7,310             | 7,270           | 8,030      | 6,820                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | N80              | 5,520                         | 925                       | --   | 788                 | 1,001                             | 7,310          | --                 | 7,310                | 7,310             | 7,270           | 8,030      | 8,240                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | N80 HC           | 6,700                         | 925                       | --   | 788                 | 1,001                             | 7,310          | --                 | 7,310                | 7,310             | 7,270           | 8,030      | 8,240                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | N80 HP           | 7,280                         | 1,098                     | --   | 904                 | 1,092                             | 8,680          | --                 | 8,680                | 8,680             | 8,630           | 9,540      | 8,710                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | C90              | 5,870                         | 1,040                     | --   | 858                 | 1,038                             | 8,220          | --                 | 8,220                | 8,220             | 8,180           | 9,030      | 9,140                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | USS C90          | 5,870                         | 1,040                     | --   | 858                 | 1,038                             | 8,220          | --                 | 8,220                | 8,220             | 8,180           | 9,030      | 9,140                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | C95              | 6,020                         | 1,098                     | --   | 904                 | 1,092                             | 8,680          | --                 | 8,680                | 8,680             | 8,630           | 9,540      | 8,710                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | T95              | 6,020                         | 1,098                     | --   | 904                 | 1,092                             | 8,680          | --                 | 8,680                | 8,680             | 8,630           | 9,540      | 9,620                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | USS C95          | 6,020                         | 1,098                     | --   | 904                 | 1,092                             | 8,680          | --                 | 8,680                | 8,680             | 8,630           | 9,540      | 9,620                        | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | USS C100         | 6,160                         | 1,156                     | --   | 950                 | 1,146                             | 9,140          | --                 | 9,140                | 9,140             | 9,090           | 10,040     | 10,110                       | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | C110             | 6,390                         | 1,271                     | --   | --                  | --                                | 10,050         | --                 | --                   | --                | 10,000          | 11,040     | 11,080                       | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | P110 SR16        | 6,390                         | 1,271                     | --   | 1,055               | 1,288                             | 10,050         | --                 | 10,050               | 10,050            | 10,000          | 11,040     | 10,450                       | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | P110             | 6,390                         | 1,271                     | --   | 1,055               | 1,288                             | 10,050         | --                 | 10,050               | 10,050            | 10,000          | 11,040     | 11,540                       | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | P110 HC          | 7,690                         | 1,271                     | --   | 1,055               | 1,288                             | 10,050         | --                 | 10,050               | 10,050            | 10,000          | 11,040     | 11,540                       | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | P110 HP          | 8,320                         | 1,445                     | --   | 1,170               | 1,379                             | 11,420         | --                 | 11,420               | 11,420            | 11,360          | 12,550     | 12,090                       | 9.625            | 9.125      |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | Q125             | 6,630                         | 1,445                     | --   | 1,182               | 1,415                             | 11,420         | --                 | 11,420               | 11,420            | 11,360          | 12,550     | 12,560                       | 9.625            | --         |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | Q125 HC          | 7,930                         | 1,445                     | --   | 1,182               | 1,415                             | 11,420         | --                 | 11,420               | 11,420            | 11,360          | 12,550     | 12,560                       | 9.625            | --         |         |



| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |       |       |                     | Internal Yield |                    |                      |                   |                 | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter |            |         |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|----------------|--------------------|----------------------|-------------------|-----------------|--|------------------|------------|---------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |       |       | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |                 |  | End<br>psi       | End<br>psi | Regular |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC   | LTC   |                     | BTC            | Open<br>End<br>psi | Capped<br>End<br>psi | Coupling<br>in.   | Coupling<br>in. |  |                  |            |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | Q125 HP          | 8,580                         | 1,560                     | --   | 1,263 | 1,487 | 12,330              | --             | 12,330             | 12,330               | 12,270            | 13,550          | 13,090                                     | 9.625            | --         |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | USS140           | 6,830                         | 1,618                     | --   | 1,321 | 1,576 | 12,790              | --             | 12,790             | 12,790               | 12,720            | 14,050          | 14,060                                     | 9.625            | --         |         |
| 8 5/8                           | 40.00        | 39.33        | 0.450              | 7.725             | 7.600               | 7.625                     | USS V150         | 7,030                         | 1,734                     | --   | 1,414 | 1,683 | 13,700              | --             | 13,700             | 13,700               | 13,630            | 15,060          | 15,070                                     | 9.625            | --         |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | USS GT80S        | 6,950                         | 1,021                     | --   | 874   | 1,066 | 8,130               | --             | 8,130              | 8,130                | 8,070             | 8,880           | 8,740                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | L80              | 6,950                         | 1,021                     | --   | 874   | 1,066 | 8,130               | --             | 8,130              | 8,130                | 8,070             | 8,880           | 8,740                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | L80 HC           | 7,810                         | 1,021                     | --   | 874   | 1,066 | 8,130               | --             | 8,130              | 8,130                | 8,070             | 8,880           | 8,740                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | L80 HP           | 8,310                         | 1,085                     | --   | 913   | 1,087 | 8,630               | --             | 8,630              | 8,630                | 8,580             | 9,430           | 8,740                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | N80n             | 6,950                         | 1,021                     | --   | 887   | 1,105 | 8,130               | --             | 8,130              | 8,130                | 8,070             | 8,880           | 7,610                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | N80              | 6,950                         | 1,021                     | --   | 887   | 1,105 | 8,130               | --             | 8,130              | 8,130                | 8,070             | 8,880           | 9,200                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | N80 HC           | 8,120                         | 1,021                     | --   | 887   | 1,105 | 8,130               | --             | 8,130              | 8,130                | 8,070             | 8,880           | 9,200                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | N80 HP           | 8,830                         | 1,212                     | --   | 1,017 | 1,206 | 9,650               | --             | 9,650              | 9,650                | 9,590             | 10,540          | 9,730                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | C90              | 7,490                         | 1,149                     | --   | 965   | 1,146 | 9,140               | --             | 9,140              | 9,140                | 9,080             | 9,980           | 10,210                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | USS C90          | 7,490                         | 1,149                     | --   | 965   | 1,146 | 9,140               | --             | 9,140              | 9,140                | 9,080             | 9,980           | 10,210                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | C95              | 7,740                         | 1,212                     | --   | 1,017 | 1,206 | 9,650               | --             | 9,650              | 9,650                | 9,590             | 10,540          | 9,730                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | T95              | 7,740                         | 1,212                     | --   | 1,017 | 1,206 | 9,650               | --             | 9,650              | 9,650                | 9,590             | 10,540          | 10,750                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | USS C95          | 7,740                         | 1,212                     | --   | 1,017 | 1,206 | 9,650               | --             | 9,650              | 9,650                | 9,590             | 10,540          | 10,750                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | USS C100         | 7,980                         | 1,276                     | --   | 1,069 | 1,265 | 10,160              | --             | 10,160             | 10,160               | 10,090            | 11,090          | 11,290                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | C110             | 8,420                         | 1,404                     | --   | --    | --    | 11,170              | --             | --                 | --                   | 11,100            | 12,200          | 12,380                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | P110 SR16        | 8,420                         | 1,404                     | --   | 1,186 | 1,423 | 11,170              | --             | 11,170             | 11,170               | 11,100            | 12,200          | 11,670                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | P110             | 8,420                         | 1,404                     | --   | 1,186 | 1,423 | 11,170              | --             | 11,170             | 11,170               | 11,100            | 12,200          | 12,890                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | P110 HC          | 9,640                         | 1,404                     | --   | 1,186 | 1,423 | 11,170              | --             | 11,170             | 11,170               | 11,100            | 12,200          | 12,890                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | P110 HP          | 10,420                        | 1,595                     | --   | 1,317 | 1,523 | 12,700              | --             | 12,700             | 12,700               | 12,610            | 13,870          | 13,510                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | Q125             | 8,980                         | 1,595                     | --   | 1,330 | 1,562 | 12,700              | --             | 12,700             | 12,700               | 12,610            | 13,870          | 14,030                                     | 9.625            | --         |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | Q125 HC          | 10,040                        | 1,595                     | --   | 1,330 | 1,562 | 12,700              | --             | 12,700             | 12,700               | 12,610            | 13,870          | 14,030                                     | 9.625            | --         |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | Q125 HP          | 10,840                        | 1,723                     | --   | 1,421 | 1,642 | 13,710              | --             | 13,710             | 13,710               | 13,620            | 14,980          | 14,620                                     | 9.625            | --         |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | USS140           | 9,420                         | 1,787                     | --   | 1,486 | 1,740 | 14,220              | --             | 14,220             | 14,220               | 14,130            | 15,530          | 15,710                                     | 9.625            | --         |         |
| 8 5/8                           | 44.00        | 43.43        | 0.500              | 7.625             | 7.500               | --                        | USS V150         | 9,640                         | 1,914                     | --   | 1,591 | 1,859 | 15,230              | --             | 15,230             | 15,230               | 15,140            | 16,640          | 16,840                                     | 9.625            | --         |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | USS GT80S        | 8,570                         | 1,129                     | --   | 983   | 1,180 | 9,030               | --             | 9,030              | 9,030                | 8,960             | 9,830           | 9,760                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | L80              | 8,570                         | 1,129                     | --   | 983   | 1,180 | 9,030               | --             | 9,030              | 9,030                | 8,960             | 9,830           | 9,760                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | L80 HC           | 9,270                         | 1,129                     | --   | 983   | 1,180 | 9,030               | --             | 9,030              | 9,030                | 8,960             | 9,830           | 9,760                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | L80 HP           | 9,790                         | 1,200                     | --   | 1,027 | 1,202 | 9,600               | --             | 9,600              | 9,600                | 9,520             | 10,440          | 9,760                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | N80n             | 8,570                         | 1,129                     | --   | 997   | 1,222 | 9,030               | --             | 9,030              | 9,030                | 8,960             | 9,830           | 8,490                                      | 9.625            | 9.125      |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | N80              | 8,570                         | 1,129                     | --   | 997   | 1,222 | 9,030               | --             | 9,030              | 9,030                | 8,960             | 9,830           | 10,280                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | N80 HC           | 9,680                         | 1,129                     | --   | 997   | 1,222 | 9,030               | --             | 9,030              | 9,030                | 8,960             | 9,830           | 10,280                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | N80 HP           | 10,520                        | 1,341                     | --   | 1,144 | 1,334 | 10,730              | --             | 10,510             | 9,750                | 10,640            | 11,670          | 10,870                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | C90              | 9,340                         | 1,271                     | --   | 1,085 | 1,268 | 10,160              | --             | 10,160             | 10,160               | 10,080            | 11,060          | 11,420                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | USS C90          | 9,340                         | 1,271                     | --   | 1,085 | 1,268 | 10,160              | --             | 10,160             | 10,160               | 10,080            | 11,060          | 11,420                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | C95              | 9,700                         | 1,341                     | --   | 1,144 | 1,334 | 10,730              | --             | 10,730             | 10,730               | 10,640            | 11,670          | 10,870                                     | 9.625            | 9.125      |         |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | T95              | 9,700                         | 1,341                     | --   | 1,144 | 1,334 | 10,730              | --             | 10,730             | 10,730               | 10,640            | 11,670          | 12,020                                     | 9.625            | 9.125      |         |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |       |       | Internal Yield      |                |            |            |                    |                      | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|----------------|------------|------------|--------------------|----------------------|--|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |       |       | Pipe<br>Body<br>psi | API Historical |            |            | Lame' - Von Mises  |                      |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |       |       |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi | Capped<br>End<br>psi |  |                            |                                |
|                                 |              |              |                    |                   |                     |                           |                  |                               |                           |  |       |       |                     |                |            |            |                    |                      |  |                            |                                |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | USS C95          | 9,700                         | 1,341                     | --   | 1,144 | 1,334 | 10,730              | --             | 10,730     | 10,730     | 10,640             | 11,670               | 12,020                                     | 9.625                      | 9.125                          |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | USS C100         | 10,070                        | 1,412                     | --   | 1,203 | 1,400 | 11,290              | --             | 11,290     | 11,290     | 11,200             | 12,280               | 12,620                                     | 9.625                      | 9.125                          |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | C110             | 10,730                        | 1,553                     | --   | --    | --    | 12,420              | --             | --         | --         | 12,320             | 13,510               | 13,840                                     | 9.625                      | 9.125                          |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | P110 SR16        | 10,730                        | 1,553                     | --   | 1,335 | 1,574 | 12,420              | --             | 12,420     | 12,420     | 12,320             | 13,510               | 13,040                                     | 9.625                      | 9.125                          |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | P110             | 10,730                        | 1,553                     | --   | 1,335 | 1,574 | 12,420              | --             | 12,420     | 12,420     | 12,320             | 13,510               | 14,420                                     | 9.625                      | 9.125                          |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | P110 HC          | 11,850                        | 1,553                     | --   | 1,335 | 1,574 | 12,420              | --             | 12,420     | 12,420     | 12,320             | 13,510               | 14,420                                     | 9.625                      | 9.125                          |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | P110 HP          | 12,780                        | 1,765                     | --   | 1,481 | 1,685 | 14,120              | --             | 14,120     | 13,410     | 14,000             | 15,360               | 15,110                                     | 9.625                      | 9.125                          |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | Q125             | 11,660                        | 1,765                     | --   | 1,496 | 1,728 | 14,120              | --             | 14,120     | 14,120     | 14,000             | 15,360               | 15,690                                     | 9.625                      | --                             |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | Q125 HC          | 12,450                        | 1,765                     | --   | 1,496 | 1,728 | 14,120              | --             | 14,120     | 14,120     | 14,000             | 15,360               | 15,690                                     | 9.625                      | --                             |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | Q125 HP          | 13,410                        | 1,906                     | --   | 1,599 | 1,817 | 15,250              | --             | 15,250     | 15,230     | 15,120             | 16,580               | 16,350                                     | 9.625                      | --                             |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | USS140           | 12,480                        | 1,977                     | --   | 1,672 | 1,925 | 15,810              | --             | 15,810     | 15,810     | 15,680             | 17,200               | 17,560                                     | 9.625                      | --                             |
| 8 5/8                           | 49.00        | 48.04        | 0.557              | 7.511             | 7.386               | --                        | USS V150         | 12,950                        | 2,118                     | --   | 1,789 | 2,056 | 16,940              | --             | 16,940     | 16,940     | 16,800             | 18,430               | 18,830                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | K55              | 6,290                         | 789                       | 596  | 670   | 953   | 6,120               | 6,120          | 6,120      | 6,120      | 6,070              | 6,670                | 7,850                                      | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | USS GT80S        | 8,340                         | 1,147                     | --   | 863   | 1,055 | 8,910               | --             | 8,910      | 8,910      | 8,840              | 9,700                | 9,620                                      | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | L80              | 8,340                         | 1,147                     | --   | 863   | 1,055 | 8,910               | --             | 8,910      | 8,910      | 8,840              | 9,700                | 9,620                                      | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | L80 HC           | 9,070                         | 1,147                     | --   | 863   | 1,055 | 8,910               | --             | 8,910      | 8,910      | 8,840              | 9,700                | 9,620                                      | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | L80 HP           | 9,590                         | 1,219                     | --   | 902   | 1,076 | 9,460               | --             | 9,460      | 9,460      | 9,390              | 10,300               | 9,620                                      | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | N80n             | 8,340                         | 1,147                     | --   | 876   | 1,094 | 8,910               | --             | 8,910      | 8,910      | 8,840              | 9,700                | 8,360                                      | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | N80              | 8,340                         | 1,147                     | --   | 876   | 1,094 | 8,910               | --             | 8,910      | 8,910      | 8,840              | 9,700                | 10,120                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | N80 HC           | 9,470                         | 1,147                     | --   | 876   | 1,094 | 8,910               | --             | 8,910      | 8,910      | 8,840              | 9,700                | 10,120                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | N80 HP           | 10,290                        | 1,362                     | --   | 1,005 | 1,193 | 10,570              | --             | 10,510     | 9,750      | 10,490             | 11,510               | 10,710                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | C90              | 9,080                         | 1,290                     | --   | 953   | 1,135 | 10,020              | --             | 10,020     | 10,020     | 9,940              | 10,910               | 11,250                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | USS C90          | 9,080                         | 1,290                     | --   | 953   | 1,135 | 10,020              | --             | 10,020     | 10,020     | 9,940              | 10,910               | 11,250                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | C95              | 9,430                         | 1,362                     | --   | 1,005 | 1,193 | 10,570              | --             | 10,570     | 10,570     | 10,490             | 11,510               | 10,710                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | T95              | 9,430                         | 1,362                     | --   | 1,005 | 1,193 | 10,570              | --             | 10,570     | 10,570     | 10,490             | 11,510               | 11,840                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | USS C95          | 9,430                         | 1,362                     | --   | 1,005 | 1,193 | 10,570              | --             | 10,570     | 10,570     | 10,490             | 11,510               | 11,840                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | USS C100         | 9,770                         | 1,434                     | --   | 1,056 | 1,252 | 11,130              | --             | 11,130     | 11,130     | 11,040             | 12,120               | 12,430                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | C110             | 10,410                        | 1,577                     | --   | --    | --    | 12,240              | --             | --         | --         | 12,150             | 13,330               | 13,630                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | P110 SR16        | 10,410                        | 1,577                     | --   | 1,172 | 1,408 | 12,240              | --             | 12,240     | 12,240     | 12,150             | 13,330               | 12,840                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | P110             | 10,410                        | 1,577                     | --   | 1,172 | 1,408 | 12,240              | --             | 12,240     | 12,240     | 12,150             | 13,330               | 14,200                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | P110 HC          | 11,550                        | 1,577                     | --   | 1,172 | 1,408 | 12,240              | --             | 12,240     | 12,240     | 12,150             | 13,330               | 14,200                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | P110 HP          | 12,450                        | 1,792                     | --   | 1,301 | 1,508 | 13,910              | --             | 13,910     | 13,410     | 13,810             | 15,150               | 14,880                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | Q125             | 11,280                        | 1,792                     | --   | 1,314 | 1,546 | 13,910              | --             | 13,910     | 13,910     | 13,810             | 15,150               | 15,450                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | Q125 HC          | 12,120                        | 1,792                     | --   | 1,314 | 1,546 | 13,910              | --             | 13,910     | 13,910     | 13,810             | 15,150               | 15,450                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | Q125 HP          | 13,060                        | 1,935                     | --   | 1,404 | 1,625 | 15,030              | --             | 15,030     | 15,030     | 14,910             | 16,360               | 16,100                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | USS140           | 12,040                        | 2,007                     | --   | 1,468 | 1,722 | 15,580              | --             | 15,580     | 15,580     | 15,460             | 16,970               | 17,300                                     | 9.625                      | --                             |
| 8 3/4                           | 49.70        | 48.78        | 0.557              | 7.636             | 7.480               | --                        | USS V150         | 12,480                        | 2,151                     | --   | 1,571 | 1,840 | 16,700              | --             | 16,700     | 16,700     | 16,570             | 18,180               | 18,540                                     | 9.625                      | --                             |
| 9 5/8                           | 32.30        | 31.06        | 0.312              | 9.001             | 8.845               | --                        | H40              | 1,370                         | 365                       | 254  | --    | --    | 2,270               | 2,270          | --         | --         | 2,260              | 2,540                | 2,460                                      | 10.625                     | --                             |
| 9 5/8                           | 36.00        | 34.89        | 0.352              | 8.921             | 8.765               | --                        | H40              | 1,720                         | 410                       | 294  | --    | --    | 2,560               | 2,560          | --         | --         | 2,550              | 2,850                | 2,780                                      | 10.625                     | --                             |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |       |       | Internal Yield      |                |            |            | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter     |        |                            |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|----------------|------------|------------|--|----------------------|--------|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |       |       | Pipe<br>Body<br>psi | API Historical |            |            |  | Lame' - Von Mises    |        | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |       |       |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi                         | Capped<br>End<br>psi |        |                            |                                |
| 9 5/8                           | 36.00        | 34.89        | 0.352              | 8.921             | 8.765               | --                        | J55              | 2,020                         | 564                       | 394  | 453   | 639   | 3,520               | 3,520          | 3,520      | 3,520      | 3,510                                      | 3,920                | 3,500  | 10.625                     | 10.125                         |
| 9 5/8                           | 36.00        | 34.89        | 0.352              | 8.921             | 8.765               | --                        | K55              | 2,020                         | 564                       | 423  | 489   | 755   | 3,520               | 3,520          | 3,520      | 3,520      | 3,510                                      | 3,920                | 4,430  | 10.625                     | 10.125                         |
| 9 5/8                           | 36.00        | 34.89        | 0.352              | 8.921             | 8.765               | --                        | USS HCK55        | 2,690                         | 564                       | 423  | 489   | 755   | 3,520               | 3,520          | 3,520      | 3,520      | 3,510                                      | 3,920                | 4,430  | 10.625                     | 10.125                         |
| 9 5/8                           | 36.00        | 34.89        | 0.352              | 8.921             | 8.765               | --                        | USS FS80         | 2,900                         | 769                       | 526  | 605   | 829   | 4,800               | 4,800          | 4,800      | 4,800      | 4,790                                      | 5,350                | 5,400  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | J55              | 2,570                         | 630                       | 452  | 520   | 714   | 3,950               | 3,950          | 3,950      | 3,950      | 3,940                                      | 4,390                | 3,950  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | K55              | 2,570                         | 630                       | 486  | 561   | 843   | 3,950               | 3,950          | 3,950      | 3,950      | 3,940                                      | 4,390                | 5,000  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | USS HCK55        | 3,810                         | 630                       | 486  | 561   | 843   | 3,950               | 3,950          | 3,950      | 3,950      | 3,940                                      | 4,390                | 5,000  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | USS FS80         | 3,870                         | 859                       | 604  | 694   | 926   | 5,390               | 5,390          | 5,390      | 5,390      | 5,370                                      | 5,980                | 6,090  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | USS GT80S        | 3,090                         | 916                       | --   | 727   | 947   | 5,750               | --             | 5,750      | 5,750      | 5,730                                      | 6,380                | 6,100  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | L80              | 3,090                         | 916                       | --   | 727   | 947   | 5,750               | --             | 5,750      | 5,750      | 5,730                                      | 6,380                | 6,100  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | L80 HC           | 3,870                         | 916                       | --   | 727   | 947   | 5,750               | --             | 5,750      | 5,750      | 5,730                                      | 6,380                | 6,100  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | L80 HP           | 4,230                         | 974                       | --   | 760   | 968   | 6,110               | --             | 6,110      | 6,110      | 6,090                                      | 6,780                | 6,100  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | N80n             | 3,090                         | 916                       | --   | 737   | 979   | 5,750               | --             | 5,750      | 5,750      | 5,730                                      | 6,380                | 5,330  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | N80              | 3,090                         | 916                       | --   | 737   | 979   | 5,750               | --             | 5,750      | 5,750      | 5,730                                      | 6,380                | 6,430  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | N80 HC           | 3,940                         | 916                       | --   | 737   | 979   | 5,750               | --             | 5,750      | 5,750      | 5,730                                      | 6,380                | 6,430  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | N80 HP           | 4,290                         | 1,088                     | --   | 847   | 1,074 | 6,830               | --             | 6,830      | 6,830      | 6,810                                      | 7,580                | 6,800  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | C90              | 3,260                         | 1,031                     | --   | 804   | 1,021 | 6,470               | --             | 6,470      | 6,470      | 6,450                                      | 7,180                | 7,120  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | USS C90          | 3,260                         | 1,031                     | --   | 804   | 1,021 | 6,470               | --             | 6,470      | 6,470      | 6,450                                      | 7,180                | 7,120  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | C95              | 3,330                         | 1,088                     | --   | 847   | 1,074 | 6,830               | --             | 6,830      | 6,830      | 6,810                                      | 7,580                | 6,800  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | T95              | 3,330                         | 1,088                     | --   | 847   | 1,074 | 6,830               | --             | 6,830      | 6,830      | 6,810                                      | 7,580                | 7,500  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | USS C95          | 3,330                         | 1,088                     | --   | 847   | 1,074 | 6,830               | --             | 6,830      | 6,830      | 6,810                                      | 7,580                | 7,500  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | USS C100         | 3,380                         | 1,145                     | --   | 870   | 1,062 | 7,190               | --             | 7,190      | 7,190      | 7,170                                      | 7,980                | 7,160  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | C110             | 3,470                         | 1,260                     | --   | --    | --    | 7,910               | --             | --         | --         | 7,880                                      | 8,770                | 8,640  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | P110 SR16        | 3,470                         | 1,260                     | --   | 988   | 1,266 | 7,910               | --             | 7,910      | 7,910      | 7,880                                      | 8,770                | 8,150  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | P110             | 3,470                         | 1,260                     | --   | 988   | 1,266 | 7,910               | --             | 7,910      | 7,910      | 7,880                                      | 8,770                | 9,000  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | P110 HC          | 4,230                         | 1,260                     | --   | 988   | 1,266 | 7,910               | --             | 7,910      | 7,910      | 7,880                                      | 8,770                | 9,000  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | P110 HP          | 4,590                         | 1,432                     | --   | 1,098 | 1,360 | 8,990               | --             | 8,990      | 8,990      | 8,960                                      | 9,970                | 9,430  | 10.625                     | 10.125                         |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | Q125             | 3,530                         | 1,432                     | --   | 1,108 | 1,393 | 8,990               | --             | 8,990      | 8,990      | 8,960                                      | 9,970                | 9,790  | 10.625                     | --                             |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | Q125 HC          | 4,300                         | 1,432                     | --   | 1,108 | 1,393 | 8,990               | --             | 8,990      | 8,990      | 8,960                                      | 9,970                | 9,790  | 10.625                     | --                             |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | Q125 HP          | 4,660                         | 1,546                     | --   | 1,185 | 1,467 | 9,710               | --             | 9,710      | 9,710      | 9,670                                      | 10,770               | 10,200 | 10.625                     | --                             |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | USS140           | 3,530                         | 1,604                     | --   | 1,239 | 1,552 | 10,070              | --             | 10,070     | 10,070     | 10,030                                     | 11,170               | 10,960 | 10.625                     | --                             |
| 9 5/8                           | 40.00        | 38.97        | 0.395              | 8.835             | 8.679               | 8.750                     | USS V150         | 3,530                         | 1,718                     | --   | 1,326 | 1,658 | 10,780              | --             | 10,780     | 10,780     | 10,750                                     | 11,960               | 11,750 | 10.625                     | --                             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | USS GT80S        | 3,810                         | 1,005                     | --   | 813   | 1,038 | 6,330               | --             | 6,330      | 6,330      | 6,310                                      | 7,000                | 6,740  | 10.625                     | 10.125                         |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | L80              | 3,810                         | 1,005                     | --   | 813   | 1,038 | 6,330               | --             | 6,330      | 6,330      | 6,310                                      | 7,000                | 6,740  | 10.625                     | 10.125                         |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | L80 HC           | 4,830                         | 1,005                     | --   | 813   | 1,038 | 6,330               | --             | 6,330      | 6,330      | 6,310                                      | 7,000                | 6,740  | 10.625                     | 10.125                         |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | L80 HP           | 5,240                         | 1,068                     | --   | 851   | 1,061 | 6,730               | --             | 6,730      | 6,730      | 6,700                                      | 7,440                | 6,740  | 10.625                     | 10.125                         |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | N80n             | 3,810                         | 1,005                     | --   | 825   | 1,074 | 6,330               | --             | 6,330      | 6,330      | 6,310                                      | 7,000                | 5,880  | 10.625                     | 10.125                         |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | N80              | 3,810                         | 1,005                     | --   | 825   | 1,074 | 6,330               | --             | 6,330      | 6,330      | 6,310                                      | 7,000                | 7,100  | 10.625                     | 10.125                         |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | N80 HC           | 4,950                         | 1,005                     | --   | 825   | 1,074 | 6,330               | --             | 6,330      | 6,330      | 6,310                                      | 7,000                | 7,100  | 10.625                     | 10.125                         |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |       |       | Internal Yield      |                |                    |                      |                   | Ductile<br>Rupture<br>Capped | Outside Diameter |            |            |         |             |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|----------------|--------------------|----------------------|-------------------|------------------------------|------------------|------------|------------|---------|-------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |       |       | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |                              | End<br>psi       | End<br>psi | End<br>psi | Regular | Special Clr |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC   | LTC   |                     | BTC            | Open<br>End<br>psi | Capped<br>End<br>psi | Coupling<br>in.   | Coupling<br>in.              |                  |            |            |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | N80 HP           | 5,380                         | 1,193                     | --   | 948   | 1,178 | 7,520               | --             | 7,520              | 7,520                | 7,490             | 8,310                        | 7,510            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | C90              | 4,010                         | 1,130                     | --   | 899   | 1,119 | 7,130               | --             | 7,130              | 7,130                | 7,100             | 7,880                        | 7,870            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | USS C90          | 4,010                         | 1,130                     | --   | 899   | 1,119 | 7,130               | --             | 7,130              | 7,130                | 7,100             | 7,880                        | 7,870            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | C95              | 4,130                         | 1,193                     | --   | 948   | 1,178 | 7,520               | --             | 7,520              | 7,520                | 7,490             | 8,310                        | 7,510            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | T95              | 4,130                         | 1,193                     | --   | 948   | 1,178 | 7,520               | --             | 7,520              | 7,520                | 7,490             | 8,310                        | 8,290            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | USS C95          | 4,130                         | 1,193                     | --   | 948   | 1,178 | 7,520               | --             | 7,520              | 7,520                | 7,490             | 8,310                        | 8,290            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | USS C100         | 4,230                         | 1,256                     | --   | 974   | 1,165 | 7,920               | --             | 7,920              | 7,920                | 7,890             | 8,750                        | 7,910            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | C110             | 4,420                         | 1,381                     | --   | --    | --    | 8,710               | --             | --                 | --                   | 8,670             | 9,630                        | 9,540            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | P110 SR16        | 4,420                         | 1,381                     | --   | 1,105 | 1,388 | 8,710               | --             | 8,710              | 8,710                | 8,670             | 9,630                        | 9,010            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | P110             | 4,420                         | 1,381                     | --   | 1,105 | 1,388 | 8,710               | --             | 8,710              | 8,710                | 8,670             | 9,630                        | 9,940            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | P110 HC          | 5,440                         | 1,381                     | --   | 1,105 | 1,388 | 8,710               | --             | 8,710              | 8,710                | 8,670             | 9,630                        | 9,940            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | P110 HP          | 5,900                         | 1,570                     | --   | 1,228 | 1,492 | 9,900               | --             | 9,900              | 9,900                | 9,860             | 10,940                       | 10,420           | 10.625     | 10.125     |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | Q125             | 4,620                         | 1,570                     | --   | 1,240 | 1,527 | 9,900               | --             | 9,900              | 9,900                | 9,860             | 10,940                       | 10,820           | 10.625     | --         |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | Q125 HC          | 5,550                         | 1,570                     | --   | 1,240 | 1,527 | 9,900               | --             | 9,900              | 9,900                | 9,860             | 10,940                       | 10,820           | 10.625     | --         |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | Q125 HP          | 6,020                         | 1,695                     | --   | 1,325 | 1,608 | 10,690              | --             | 10,690             | 10,690               | 10,650            | 11,810                       | 11,270           | 10.625     | --         |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | USS140           | 4,730                         | 1,758                     | --   | 1,386 | 1,702 | 11,080              | --             | 11,080             | 11,080               | 11,040            | 12,250                       | 12,110           | 10.625     | --         |         |             |
| 9 5/8                           | 43.50        | 42.73        | 0.435              | 8.755             | 8.599               | --                        | USS V150         | 4,750                         | 1,884                     | --   | 1,483 | 1,818 | 11,880              | --             | 11,880             | 11,880               | 11,830            | 13,130                       | 12,980           | 10.625     | --         |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | USS GT80S        | 4,750                         | 1,086                     | --   | 893   | 1,122 | 6,870               | --             | 6,870              | 6,870                | 6,830             | 7,570                        | 7,330            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | L80              | 4,750                         | 1,086                     | --   | 893   | 1,122 | 6,870               | --             | 6,870              | 6,870                | 6,830             | 7,570                        | 7,330            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | L80 HC           | 5,740                         | 1,086                     | --   | 893   | 1,122 | 6,870               | --             | 6,870              | 6,870                | 6,830             | 7,570                        | 7,330            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | L80 HP           | 6,190                         | 1,154                     | --   | 933   | 1,147 | 7,290               | --             | 7,290              | 7,290                | 7,260             | 8,040                        | 7,330            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | N80n             | 4,750                         | 1,086                     | --   | 905   | 1,161 | 6,870               | --             | 6,870              | 6,870                | 6,830             | 7,570                        | 6,390            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | N80              | 4,750                         | 1,086                     | --   | 905   | 1,161 | 6,870               | --             | 6,870              | 6,870                | 6,830             | 7,570                        | 7,720            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | N80 HC           | 5,910                         | 1,086                     | --   | 905   | 1,161 | 6,870               | --             | 6,870              | 6,870                | 6,830             | 7,570                        | 7,720            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | N80 HP           | 6,430                         | 1,289                     | --   | 1,040 | 1,273 | 8,150               | --             | 8,150              | 8,150                | 8,110             | 8,990                        | 8,160            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | C90              | 4,990                         | 1,221                     | --   | 987   | 1,210 | 7,720               | --             | 7,720              | 7,720                | 7,690             | 8,520                        | 8,560            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | USS C90          | 4,990                         | 1,221                     | --   | 987   | 1,210 | 7,720               | --             | 7,720              | 7,720                | 7,690             | 8,520                        | 8,560            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | C95              | 5,090                         | 1,289                     | --   | 1,040 | 1,273 | 8,150               | --             | 8,150              | 8,150                | 8,110             | 8,990                        | 8,160            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | T95              | 5,090                         | 1,289                     | --   | 1,040 | 1,273 | 8,150               | --             | 8,150              | 8,150                | 8,110             | 8,990                        | 9,010            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | USS C95          | 5,090                         | 1,289                     | --   | 1,040 | 1,273 | 8,150               | --             | 8,150              | 8,150                | 8,110             | 8,990                        | 9,010            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | USS C100         | 5,180                         | 1,357                     | --   | 1,068 | 1,259 | 8,580               | --             | 8,580              | 8,580                | 8,540             | 9,460                        | 8,610            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | C110             | 5,300                         | 1,493                     | --   | --    | --    | 9,440               | --             | --                 | --                   | 9,400             | 10,410                       | 10,380           | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | P110 SR16        | 5,300                         | 1,493                     | --   | 1,213 | 1,500 | 9,440               | --             | 9,440              | 9,440                | 9,400             | 10,410                       | 9,790            | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | P110             | 5,300                         | 1,493                     | --   | 1,213 | 1,500 | 9,440               | --             | 9,440              | 9,440                | 9,400             | 10,410                       | 10,810           | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | P110 HC          | 6,660                         | 1,493                     | --   | 1,213 | 1,500 | 9,440               | --             | 9,440              | 9,440                | 9,400             | 10,410                       | 10,810           | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | P110 HP          | 7,210                         | 1,697                     | --   | 1,347 | 1,612 | 10,730              | --             | 10,730             | 10,730               | 10,680            | 11,830                       | 11,330           | 10.625     | 10.125     |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | Q125             | 5,630                         | 1,697                     | --   | 1,360 | 1,650 | 10,730              | --             | 10,730             | 10,730               | 10,680            | 11,830                       | 11,760           | 10.625     | --         |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | Q125 HC          | 6,830                         | 1,697                     | --   | 1,360 | 1,650 | 10,730              | --             | 10,730             | 10,730               | 10,680            | 11,830                       | 11,760           | 10.625     | --         |         |             |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | Q125 HP          | 7,400                         | 1,832                     | --   | 1,454 | 1,738 | 11,590              | --             | 11,590             | 11,590               | 11,530            | 12,770                       | 12,260           | 10.625     | --         |         |             |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |       |       | Internal Yield      |                |            |            |                    | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |        |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|----------------|------------|------------|--------------------|--|----------------------------|--------------------------------|--------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |       |       | Pipe<br>Body<br>psi | API Historical |            |            | Lame' - Von Mises  |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |        |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |       |       |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi | Capped<br>End<br>psi                       |                            |                                |        |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | USS140           | 5,890                         | 1,900                     | --   | 1,520 | 1,839 | 12,010              | --             | 12,010     | 12,010     | 11,960             | 13,250                                     | 13,170                     | 10.625                         | --     |
| 9 5/8                           | 47.00        | 46.18        | 0.472              | 8.681             | 8.525               | --                        | USS V150         | 6,010                         | 2,036                     | --   | 1,627 | 1,965 | 12,870              | --             | 12,870     | 12,870     | 12,810             | 14,190                                     | 14,120                     | 10.625                         | --     |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | USS GT80S        | 6,620                         | 1,244                     | --   | 1,047 | 1,286 | 7,930               | --             | 7,930      | 7,930      | 7,880              | 8,680                                      | 8,520                      | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | L80              | 6,620                         | 1,244                     | --   | 1,047 | 1,286 | 7,930               | --             | 7,930      | 7,930      | 7,880              | 8,680                                      | 8,520                      | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | L80 HC           | 7,510                         | 1,244                     | --   | 1,047 | 1,286 | 7,930               | --             | 7,930      | 7,930      | 7,880              | 8,680                                      | 8,520                      | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | L80 HP           | 8,000                         | 1,321                     | --   | 1,094 | 1,314 | 8,420               | --             | 8,420      | 8,420      | 8,370              | 9,220                                      | 8,520                      | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | N80n             | 6,620                         | 1,244                     | --   | 1,062 | 1,329 | 7,930               | --             | 7,930      | 7,930      | 7,880              | 8,680                                      | 7,420                      | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | N80              | 6,620                         | 1,244                     | --   | 1,062 | 1,329 | 7,930               | --             | 7,930      | 7,930      | 7,880              | 8,680                                      | 8,960                      | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | N80 HC           | 7,800                         | 1,244                     | --   | 1,062 | 1,329 | 7,930               | --             | 7,930      | 7,930      | 7,880              | 8,680                                      | 8,960                      | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | N80 HP           | 8,480                         | 1,477                     | --   | 1,220 | 1,458 | 9,420               | --             | 9,420      | 8,830      | 9,360              | 10,310                                     | 9,480                      | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | C90              | 7,110                         | 1,399                     | --   | 1,157 | 1,386 | 8,920               | --             | 8,920      | 8,920      | 8,870              | 9,760                                      | 9,950                      | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | USS C90          | 7,110                         | 1,399                     | --   | 1,157 | 1,386 | 8,920               | --             | 8,920      | 8,920      | 8,870              | 9,760                                      | 9,950                      | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | C95              | 7,340                         | 1,477                     | --   | 1,220 | 1,458 | 9,420               | --             | 9,420      | 9,420      | 9,360              | 10,310                                     | 9,480                      | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | T95              | 7,340                         | 1,477                     | --   | 1,220 | 1,458 | 9,420               | --             | 9,420      | 9,420      | 9,360              | 10,310                                     | 10,480                     | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | USS C95          | 7,340                         | 1,477                     | --   | 1,220 | 1,458 | 9,420               | --             | 9,420      | 9,420      | 9,360              | 10,310                                     | 10,480                     | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | USS C100         | 7,560                         | 1,555                     | --   | 1,253 | 1,442 | 9,910               | --             | 9,910      | 9,910      | 9,850              | 10,850                                     | 10,000                     | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | C110             | 7,950                         | 1,710                     | --   | --    | --    | 10,900              | --             | --         | --         | 10,840             | 11,930                                     | 12,070                     | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | P110 SR16        | 7,950                         | 1,710                     | --   | 1,422 | 1,718 | 10,900              | --             | 10,900     | 10,900     | 10,840             | 11,930                                     | 11,370                     | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | P110             | 7,950                         | 1,710                     | --   | 1,422 | 1,718 | 10,900              | --             | 10,900     | 10,900     | 10,840             | 11,930                                     | 12,570                     | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | P110 HC          | 9,190                         | 1,710                     | --   | 1,422 | 1,718 | 10,900              | --             | 10,900     | 10,900     | 10,840             | 11,930                                     | 12,570                     | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | P110 HP          | 9,930                         | 1,943                     | --   | 1,580 | 1,847 | 12,390              | --             | 12,390     | 12,140     | 12,310             | 13,560                                     | 13,170                     | 10.625                         | 10.125 |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | Q125             | 8,440                         | 1,943                     | --   | 1,595 | 1,890 | 12,390              | --             | 12,390     | 12,390     | 12,310             | 13,560                                     | 13,680                     | 10.625                         | --     |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | Q125 HC          | 9,540                         | 1,943                     | --   | 1,595 | 1,890 | 12,390              | --             | 12,390     | 12,390     | 12,310             | 13,560                                     | 13,680                     | 10.625                         | --     |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | Q125 HP          | 10,310                        | 2,099                     | --   | 1,705 | 1,991 | 13,380              | --             | 13,380     | 13,380     | 13,300             | 14,650                                     | 14,250                     | 10.625                         | --     |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | USS140           | 8,800                         | 2,177                     | --   | 1,783 | 2,107 | 13,880              | --             | 13,880     | 13,880     | 13,790             | 15,190                                     | 15,310                     | 10.625                         | --     |
| 9 5/8                           | 53.50        | 52.90        | 0.545              | 8.535             | 8.379               | 8.500                     | USS V150         | 8,960                         | 2,332                     | --   | 1,908 | 2,251 | 14,870              | --             | 14,870     | 14,870     | 14,780             | 16,270                                     | 16,410                     | 10.625                         | --     |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | USS GT80S        | 7,890                         | 1,350                     | --   | 1,151 | 1,396 | 8,660               | --             | 8,660      | 8,660      | 8,600              | 9,430                                      | 9,340                      | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | L80              | 7,890                         | 1,350                     | --   | 1,151 | 1,396 | 8,660               | --             | 8,660      | 8,660      | 8,600              | 9,430                                      | 9,340                      | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | L80 HC           | 8,670                         | 1,350                     | --   | 1,151 | 1,396 | 8,660               | --             | 8,660      | 8,660      | 8,600              | 9,430                                      | 9,340                      | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | L80 HP           | 9,180                         | 1,435                     | --   | 1,203 | 1,426 | 9,200               | --             | 9,200      | 8,830      | 9,130              | 10,020                                     | 9,340                      | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | N80n             | 7,890                         | 1,350                     | --   | 1,167 | 1,443 | 8,660               | --             | 8,660      | 8,660      | 8,600              | 9,430                                      | 8,130                      | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | N80              | 7,890                         | 1,350                     | --   | 1,167 | 1,443 | 8,660               | --             | 8,660      | 8,660      | 8,600              | 9,430                                      | 9,830                      | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | N80 HC           | 9,040                         | 1,350                     | --   | 1,167 | 1,443 | 8,660               | --             | 8,660      | 8,660      | 8,600              | 9,430                                      | 9,830                      | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | N80 HP           | 9,830                         | 1,604                     | --   | 1,341 | 1,583 | 10,280              | --             | 9,630      | 8,830      | 10,210             | 11,200                                     | 10,400                     | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | C90              | 8,570                         | 1,519                     | --   | 1,272 | 1,504 | 9,740               | --             | 9,740      | 9,740      | 9,670              | 10,610                                     | 10,920                     | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | USS C90          | 8,570                         | 1,519                     | --   | 1,272 | 1,504 | 9,740               | --             | 9,740      | 9,740      | 9,670              | 10,610                                     | 10,920                     | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | C95              | 8,890                         | 1,604                     | --   | 1,341 | 1,583 | 10,280              | --             | 10,280     | 10,280     | 10,210             | 11,200                                     | 10,400                     | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | T95              | 8,890                         | 1,604                     | --   | 1,341 | 1,583 | 10,280              | --             | 10,280     | 10,280     | 10,210             | 11,200                                     | 11,500                     | 10.625                         | 10.125 |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | USS C95          | 8,890                         | 1,604                     | --   | 1,341 | 1,583 | 10,280              | --             | 10,280     | 10,280     | 10,210             | 11,200                                     | 11,500                     | 10.625                         | 10.125 |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |                      |                  |       | Internal Yield      |                |            |            |                    |                      | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|----------------------|------------------|-------|---------------------|----------------|------------|------------|--------------------|----------------------|--|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |                      |                  |       | Pipe<br>Body<br>psi | API Historical |            |            | Lame' - Von Mises  |                      |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled |                  |       |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi | Capped<br>End<br>psi |  |                            |                                |
|                                 |              |              |                    |                   |                     |                           |                  |                               | STC                       | LTC                  | BTC <sup>a</sup> |       |                     |                |            |            |                    |                      |  |                            |                                |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | USS C100         | 9,190                         | 1,688                     | --                   | 1,377            | 1,566 | 10,830              | --             | 10,830     | 10,830     | 10,750             | 11,790               | 10,980                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | C110             | 9,770                         | 1,857                     | --                   | --               | --    | 11,910              | --             | --         | --         | 11,820             | 12,970               | 13,240                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | P110 SR16        | 9,770                         | 1,857                     | --                   | 1,563            | 1,865 | 11,910              | --             | 11,910     | 11,910     | 11,820             | 12,970               | 12,480                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | P110             | 9,770                         | 1,857                     | --                   | 1,563            | 1,865 | 11,910              | --             | 11,910     | 11,910     | 11,820             | 12,970               | 13,790                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | P110 HC          | 10,940                        | 1,857                     | --                   | 1,563            | 1,865 | 11,910              | --             | 11,910     | 11,910     | 11,820             | 12,970               | 13,790                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | P110 HP          | 11,800                        | 2,110                     | --                   | 1,737            | 2,005 | 13,530              | --             | 13,280     | 12,140     | 13,430             | 14,740               | 14,450                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | Q125             | 10,540                        | 2,110                     | --                   | 1,754            | 2,052 | 13,530              | --             | 13,530     | 13,530     | 13,430             | 14,740               | 15,010                                     | 10.625                     | --                             |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | Q125 HC          | 11,450                        | 2,110                     | --                   | 1,754            | 2,052 | 13,530              | --             | 13,530     | 13,530     | 13,430             | 14,740               | 15,010                                     | 10.625                     | --                             |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | Q125 HP          | 12,340                        | 2,279                     | --                   | 1,875            | 2,161 | 14,620              | --             | 14,620     | 13,800     | 14,510             | 15,910               | 15,640                                     | 10.625                     | --                             |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | USS140           | 11,190                        | 2,363                     | --                   | 1,960            | 2,287 | 15,160              | --             | 15,160     | 15,160     | 15,040             | 16,500               | 16,800                                     | 10.625                     | --                             |
| 9 5/8                           | 58.40        | 57.44        | 0.595              | 8.435             | 8.279               | 8.375                     | USS V150         | 11,560                        | 2,532                     | --                   | 2,098            | 2,444 | 16,240              | --             | 16,240     | 16,240     | 16,120             | 17,680               | 18,010                                     | 10.625                     | --                             |
| 9 5/8                           | 59.40        | 58.70        | 0.609              | 8.407             | 8.251               | --                        | C90              | 8,970                         | 1,553                     | --                   | --               | --    | 9,970               | --             | --         | --         | 9,890              | 10,850               | 11,190                                     | --                         | --                             |
| 9 5/8                           | 59.40        | 58.70        | 0.609              | 8.407             | 8.251               | --                        | USS C90          | 8,970                         | 1,553                     | --                   | --               | --    | 9,970               | --             | --         | --         | 9,890              | 10,850               | 11,190                                     | --                         | --                             |
| 9 5/8                           | 59.40        | 58.70        | 0.609              | 8.407             | 8.251               | --                        | T95              | 9,320                         | 1,639                     | --                   | --               | --    | 10,520              | --             | --         | --         | 10,440             | 11,450               | 11,780                                     | --                         | --                             |
| 9 5/8                           | 59.40        | 58.70        | 0.609              | 8.407             | 8.251               | --                        | USS C95          | 9,320                         | 1,639                     | --                   | --               | --    | 10,520              | --             | --         | --         | 10,440             | 11,450               | 11,780                                     | --                         | --                             |
| 9 5/8                           | 59.40        | 58.70        | 0.609              | 8.407             | 8.251               | --                        | USS C100         | 9,650                         | 1,725                     | --                   | --               | --    | 11,080              | --             | --         | --         | 10,990             | 12,050               | 11,240                                     | --                         | --                             |
| 9 5/8                           | 59.40        | 58.70        | 0.609              | 8.407             | 8.251               | --                        | C110             | 10,280                        | 1,898                     | --                   | --               | --    | 12,180              | --             | --         | --         | 12,090             | 13,260               | 13,560                                     | --                         | --                             |
| 9 5/8                           | 61.10        | 60.13        | 0.625              | 8.375             | 8.219               | --                        | USS C100         | 10,170                        | 1,767                     | --                   | --               | --    | 11,370              | --             | --         | --         | 11,270             | 12,350               | 11,560                                     | --                         | --                             |
| 9 5/8                           | 61.10        | 60.13        | 0.625              | 8.375             | 8.219               | --                        | C110             | 10,860                        | 1,944                     | --                   | --               | --    | 12,500              | --             | --         | --         | 12,400             | 13,580               | 13,940                                     | --                         | --                             |
| 9 5/8                           | 61.10        | 60.13        | 0.625              | 8.375             | 8.219               | --                        | P110 SR16        | 10,860                        | 1,944                     | --                   | 1,647            | 1,953 | 12,500              | --             | 12,500     | 12,140     | 12,400             | 13,580               | 13,130                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 61.10        | 60.13        | 0.625              | 8.375             | 8.219               | --                        | P110             | 10,860                        | 1,944                     | --                   | 1,647            | 1,953 | 12,500              | --             | 12,500     | 12,140     | 12,400             | 13,580               | 14,520                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 61.10        | 60.13        | 0.625              | 8.375             | 8.219               | --                        | P110 HC          | 11,970                        | 1,944                     | --                   | 1,647            | 1,953 | 12,500              | --             | 12,500     | 12,140     | 12,400             | 13,580               | 14,520                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 61.10        | 60.13        | 0.625              | 8.375             | 8.219               | --                        | P110 HP          | 12,900                        | 2,209                     | --                   | 1,831            | 2,099 | 14,210              | --             | 13,280     | 12,140     | 14,090             | 15,430               | 15,210                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 61.10        | 60.13        | 0.625              | 8.375             | 8.219               | --                        | Q125             | 11,800                        | 2,209                     | --                   | 1,848            | 2,149 | 14,210              | --             | 14,210     | 13,800     | 14,090             | 15,430               | 15,800                                     | 10.625                     | --                             |
| 9 5/8                           | 61.10        | 60.13        | 0.625              | 8.375             | 8.219               | --                        | Q125 HC          | 12,580                        | 2,209                     | --                   | 1,848            | 2,149 | 14,210              | --             | 14,210     | 13,800     | 14,090             | 15,430               | 15,800                                     | 10.625                     | --                             |
| 9 5/8                           | 61.10        | 60.13        | 0.625              | 8.375             | 8.219               | --                        | Q125 HP          | 13,550                        | 2,386                     | --                   | 1,976            | 2,263 | 15,340              | --             | 15,090     | 13,800     | 15,220             | 16,670               | 16,460                                     | 10.625                     | --                             |
| 9 5/8                           | 61.10        | 60.13        | 0.625              | 8.375             | 8.219               | --                        | USS140           | 12,630                        | 2,474                     | --                   | 2,065            | 2,395 | 15,910              | --             | 15,910     | 15,460     | 15,780             | 17,290               | 17,680                                     | 10.625                     | --                             |
| 9 5/8                           | 61.10        | 60.13        | 0.625              | 8.375             | 8.219               | --                        | USS V150         | 13,120                        | 2,651                     | --                   | 2,210            | 2,559 | 17,050              | --             | 17,050     | 16,560     | 16,910             | 18,520               | 18,960                                     | 10.625                     | --                             |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | C90              | 10,800                        | 1,701                     | --                   | --               | --    | 11,000              | --             | --         | --         | 10,890             | 11,890               | 12,410                                     | --                         | --                             |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | USS C90          | 10,800                        | 1,701                     | --                   | --               | --    | 11,000              | --             | --         | --         | 10,890             | 11,890               | 12,410                                     | --                         | --                             |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | T95              | 11,260                        | 1,796                     | --                   | --               | --    | 11,610              | --             | --         | --         | 11,500             | 12,560               | 13,070                                     | --                         | --                             |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | USS C95          | 11,260                        | 1,796                     | --                   | --               | --    | 11,610              | --             | --         | --         | 11,500             | 12,560               | 13,070                                     | --                         | --                             |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | USS C100         | 11,710                        | 1,890                     | --                   | --               | --    | 12,220              | --             | --         | --         | 12,100             | 13,220               | 12,470                                     | --                         | --                             |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | C110             | 12,570                        | 2,079                     | --                   | --               | --    | 13,440              | --             | --         | --         | 13,310             | 14,540               | 15,040                                     | --                         | --                             |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | P110 SR16        | 12,570                        | 2,079                     | --                   | 1,778            | 2,089 | 13,440              | --             | 13,280     | 12,140     | 13,310             | 14,540               | 14,170                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | P110             | 12,570                        | 2,079                     | --                   | 1,778            | 2,089 | 13,440              | --             | 13,280     | 12,140     | 13,310             | 14,540               | 15,670                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | P110 HC          | 13,540                        | 2,079                     | --                   | 1,778            | 2,089 | 13,440              | --             | 13,280     | 12,140     | 13,310             | 14,540               | 15,670                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | P110 HP          | 14,590                        | 2,363                     | --                   | 1,975            | 2,196 | 15,270              | --             | 13,280     | 12,140     | 15,130             | 16,520               | 16,420                                     | 10.625                     | 10.125                         |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | Q125             | 13,780                        | 2,363                     | --                   | 1,994            | 2,298 | 15,270              | --             | 15,090     | 13,800     | 15,130             | 16,520               | 17,050                                     | 10.625                     | --                             |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | TENSION                       |                           |  |       |       | Internal Yield      |                                   |        |                   |                    | Ductile                         |                      |                            |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|-----------------------------------|--------|-------------------|--------------------|---------------------------------|----------------------|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade | Collapse<br>Resistance<br>psi | Joint Strength, 1,000 lbs |  |       |       | API Historical      |                                   |        | Lame' - Von Mises |                    | Rupture<br>Capped<br>End<br>psi | Outside Diameter     |                            |                                |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |       |       | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC LTC BTC |        |                   | Open<br>End<br>psi |                                 | Capped<br>End<br>psi | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | Q125 HC          | 14,320                        | 2,363                     | --   | 1,994 | 2,298 | 15,270              | --                                | 15,090 | 13,800            | 15,130             | 16,520                          | 17,050               | 10.625                     | --                             |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | Q125 HP          | 15,400                        | 2,552                     | --   | 2,132 | 2,372 | 16,490              | --                                | 15,090 | 13,800            | 16,340             | 17,840                          | 17,770               | 10.625                     | --                             |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | USS140           | 14,890                        | 2,646                     | --   | 2,229 | 2,561 | 17,110              | --                                | 16,910 | 15,460            | 16,940             | 18,500                          | 19,090               | 10.625                     | --                             |
| 9 5/8                           | 64.90        | 64.32        | 0.672              | 8.281             | 8.125               | --                        | USS V150         | 15,570                        | 2,835                     | --   | 2,385 | 2,737 | 18,330              | --                                | 18,110 | 16,560            | 18,150             | 19,820                          | 20,460               | 10.625                     | --                             |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | C90              | 12,600                        | 1,845                     | --   | --    | --    | 12,010              | --                                | --     | --                | 11,870             | 12,910                          | 13,630               | --                         | --                             |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | USS C90          | 12,600                        | 1,845                     | --   | --    | --    | 12,010              | --                                | --     | --                | 11,870             | 12,910                          | 13,630               | --                         | --                             |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | T95              | 13,170                        | 1,948                     | --   | --    | --    | 12,670              | --                                | --     | --                | 12,530             | 13,630                          | 14,350               | --                         | --                             |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | USS C95          | 13,170                        | 1,948                     | --   | --    | --    | 12,670              | --                                | --     | --                | 12,530             | 13,630                          | 14,350               | --                         | --                             |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | USS C100         | 13,740                        | 2,050                     | --   | --    | --    | 13,340              | --                                | --     | --                | 13,190             | 14,350                          | 13,700               | --                         | --                             |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | C110             | 14,830                        | 2,255                     | --   | --    | --    | 14,670              | --                                | --     | --                | 14,510             | 15,780                          | 16,520               | --                         | --                             |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | P110 SR16        | 14,830                        | 2,255                     | --   | 1,948 | 2,196 | 14,670              | --                                | 13,280 | 12,140            | 14,510             | 15,780                          | 15,550               | 10.625                     | 10.125                         |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | P110             | 14,830                        | 2,255                     | --   | 1,948 | 2,196 | 14,670              | --                                | 13,280 | 12,140            | 14,510             | 15,780                          | 17,210               | 10.625                     | 10.125                         |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | P110 HC          | 15,550                        | 2,255                     | --   | 1,948 | 2,196 | 14,670              | --                                | 13,280 | 12,140            | 14,510             | 15,780                          | 17,210               | 10.625                     | 10.125                         |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | P110 HP          | 16,740                        | 2,563                     | --   | 2,164 | 2,196 | 16,680              | --                                | 13,280 | 12,140            | 16,490             | 17,940                          | 18,030               | 10.625                     | 10.125                         |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | Q125             | 16,390                        | 2,563                     | --   | 2,185 | 2,372 | 16,680              | --                                | 15,090 | 13,800            | 16,490             | 17,940                          | 18,720               | 10.625                     | --                             |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | Q125 HC          | 16,540                        | 2,563                     | --   | 2,185 | 2,372 | 16,680              | --                                | 15,090 | 13,800            | 16,490             | 17,940                          | 18,720               | 10.625                     | --                             |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | Q125 HP          | 17,760                        | 2,768                     | --   | 2,336 | 2,372 | 18,010              | --                                | 15,090 | 13,800            | 17,810             | 19,370                          | 19,510               | 10.625                     | --                             |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | USS140           | 17,870                        | 2,870                     | --   | 2,442 | 2,636 | 18,680              | --                                | 16,910 | 15,460            | 18,470             | 20,090                          | 20,960               | 10.625                     | --                             |
| 9 5/8                           | 70.30        | 69.76        | 0.734              | 8.157             | 8.001               | --                        | USS V150         | 18,800                        | 3,075                     | --   | 2,613 | 2,811 | 20,010              | --                                | 18,110 | 16,560            | 19,790             | 21,520                          | 22,470               | 10.625                     | --                             |
| 9 5/8                           | 75.60        | 75.21        | 0.797              | 8.031             | 7.875               | --                        | C90              | 13,670                        | 1,989                     | --   | --    | --    | 13,030              | --                                | --     | --                | 12,860             | 13,940                          | 14,880               | --                         | --                             |
| 9 5/8                           | 75.60        | 75.21        | 0.797              | 8.031             | 7.875               | --                        | USS C90          | 13,670                        | 1,989                     | --   | --    | --    | 13,030              | --                                | --     | --                | 12,860             | 13,940                          | 14,880               | --                         | --                             |
| 9 5/8                           | 75.60        | 75.21        | 0.797              | 8.031             | 7.875               | --                        | T95              | 14,430                        | 2,100                     | --   | --    | --    | 13,760              | --                                | --     | --                | 13,580             | 14,710                          | 15,660               | --                         | --                             |
| 9 5/8                           | 75.60        | 75.21        | 0.797              | 8.031             | 7.875               | --                        | USS C95          | 14,430                        | 2,100                     | --   | --    | --    | 13,760              | --                                | --     | --                | 13,580             | 14,710                          | 15,660               | --                         | --                             |
| 9 5/8                           | 75.60        | 75.21        | 0.797              | 8.031             | 7.875               | --                        | USS C100         | 15,190                        | 2,210                     | --   | --    | --    | 14,480              | --                                | --     | --                | 14,290             | 15,490                          | 14,960               | --                         | --                             |
| 9 5/8                           | 75.60        | 75.21        | 0.797              | 8.031             | 7.875               | --                        | C110             | 16,700                        | 2,431                     | --   | --    | --    | 15,930              | --                                | --     | --                | 15,720             | 17,030                          | 18,040               | --                         | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | K55              | 5,860                         | 941                       | 682  | 788   | 1,120 | 5,880               | 5,880                             | 5,880  | 5,880             | 5,840              | 6,410                           | 7,530                | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | USS GT80S        | 7,700                         | 1,369                     | --   | 1,020 | 1,258 | 8,550               | --                                | 8,550  | 8,550             | 8,490              | 9,320                           | 10,180               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | L80              | 7,700                         | 1,369                     | --   | 1,020 | 1,258 | 8,550               | --                                | 8,550  | 8,550             | 8,490              | 9,320                           | 10,180               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | L80 HC           | 8,490                         | 1,369                     | --   | 1,020 | 1,258 | 8,550               | --                                | 8,550  | 8,550             | 8,490              | 9,320                           | 10,180               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | L80 HP           | 9,000                         | 1,455                     | --   | 1,067 | 1,285 | 9,080               | --                                | 9,080  | 8,830             | 9,020              | 9,900                           | 10,180               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | N80n             | 7,700                         | 1,369                     | --   | 1,035 | 1,301 | 8,550               | --                                | 8,550  | 8,550             | 8,490              | 9,320                           | 10,720               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | N80              | 7,700                         | 1,369                     | --   | 1,035 | 1,301 | 8,550               | --                                | 8,550  | 8,550             | 8,490              | 9,320                           | 10,720               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | N80 HC           | 8,850                         | 1,369                     | --   | 1,035 | 1,301 | 8,550               | --                                | 8,550  | 8,550             | 8,490              | 9,320                           | 10,720               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | N80 HP           | 9,620                         | 1,626                     | --   | 1,189 | 1,426 | 10,150              | --                                | 9,630  | 8,830             | 10,080             | 11,060                          | 11,340               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | C90              | 8,340                         | 1,540                     | --   | 1,128 | 1,356 | 9,620               | --                                | 9,620  | 9,620             | 9,550              | 10,480                          | 10,770               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | USS C90          | 8,340                         | 1,540                     | --   | 1,128 | 1,356 | 9,620               | --                                | 9,620  | 9,620             | 9,550              | 10,480                          | 10,770               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | C95              | 8,650                         | 1,626                     | --   | 1,189 | 1,426 | 10,150              | --                                | 10,150 | 10,150            | 10,080             | 11,060                          | 11,340               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | T95              | 8,650                         | 1,626                     | --   | 1,189 | 1,426 | 10,150              | --                                | 10,150 | 10,150            | 10,080             | 11,060                          | 11,340               | 10.625                     | --                             |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | USS C95          | 8,650                         | 1,626                     | --   | 1,189 | 1,426 | 10,150              | --                                | 10,150 | 10,150            | 10,080             | 11,060                          | 11,340               | 10.625                     | --                             |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |            |            | Internal Yield      |                |                    |                      |                   | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |    |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|------------|------------|---------------------|----------------|--------------------|----------------------|-------------------|--|----------------------------|--------------------------------|----|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |            |            | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |    |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC<br>psi | LTC<br>psi |                     | BTC<br>psi     | Open<br>End<br>psi | Capped<br>End<br>psi |                   |  |                            |                                |    |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | USS C100         | 8,940                         | 1,711                     | --   | 1,221      | 1,411      | 10,690              | --             | 10,690             | 10,690               | 10,610            | 11,650                                     | 10,830                     | 10.625                         | -- |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | C110             | 9,490                         | 1,882                     | --   | --         | --         | 11,760              | --             | --                 | --                   | 11,670            | 12,810                                     | 13,600                     | 10.625                         | -- |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | P110 SR16        | 9,490                         | 1,882                     | --   | 1,386      | 1,681      | 11,760              | --             | 11,760             | 11,760               | 11,670            | 12,810                                     | 12,310                     | 10.625                         | -- |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | P110             | 9,490                         | 1,882                     | --   | 1,386      | 1,681      | 11,760              | --             | 11,760             | 11,760               | 11,670            | 12,810                                     | 13,600                     | 10.625                         | -- |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | P110 HC          | 10,670                        | 1,882                     | --   | 1,386      | 1,681      | 11,760              | --             | 11,760             | 11,760               | 11,670            | 12,810                                     | 13,600                     | 10.625                         | -- |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | P110 HP          | 11,520                        | 2,139                     | --   | 1,541      | 1,807      | 13,360              | --             | 13,280             | 12,140               | 13,260            | 14,560                                     | 14,250                     | 10.625                         | -- |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | Q125             | 10,210                        | 2,139                     | --   | 1,555      | 1,850      | 13,360              | --             | 13,360             | 13,360               | 13,260            | 14,560                                     | 14,800                     | 10.625                         | -- |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | Q125 HC          | 11,160                        | 2,139                     | --   | 1,555      | 1,850      | 13,360              | --             | 13,360             | 13,360               | 13,260            | 14,560                                     | 14,800                     | 10.625                         | -- |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | Q125 HP          | 12,030                        | 2,310                     | --   | 1,663      | 1,948      | 14,430              | --             | 14,430             | 13,800               | 14,320            | 15,720                                     | 15,430                     | 10.625                         | -- |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | USS140           | 10,820                        | 2,396                     | --   | 1,738      | 2,061      | 14,960              | --             | 14,960             | 14,960               | 14,850            | 16,300                                     | 16,570                     | 10.625                         | -- |
| 9 3/4                           | 59.20        | 58.23        | 0.595              | 8.560             | 8.404               | --                        | USS V150         | 11,160                        | 2,567                     | --   | 1,860      | 2,202      | 16,030              | --             | 16,030             | 16,030               | 15,910            | 17,470                                     | 17,760                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | K55              | 6,230                         | 999                       | 636  | 735        | 1,055      | 6,090               | 6,090          | 6,090              | 6,070                | 6,050             | 6,630                                      | 7,810                      | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | USS GT80S        | 8,260                         | 1,453                     | --   | 952        | 1,185      | 8,860               | --             | 8,860              | 8,830                | 8,790             | 9,640                                      | 10,580                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | L80              | 8,260                         | 1,453                     | --   | 952        | 1,185      | 8,860               | --             | 8,860              | 8,830                | 8,790             | 9,640                                      | 10,580                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | L80 HC           | 8,990                         | 1,453                     | --   | 952        | 1,185      | 8,860               | --             | 8,860              | 8,830                | 8,790             | 9,640                                      | 10,580                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | L80 HP           | 9,510                         | 1,544                     | --   | 995        | 1,211      | 9,420               | --             | 9,420              | 8,830                | 9,340             | 10,250                                     | 10,580                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | N80n             | 8,260                         | 1,453                     | --   | 965        | 1,226      | 8,860               | --             | 8,860              | 8,830                | 8,790             | 9,640                                      | 11,130                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | N80              | 8,260                         | 1,453                     | --   | 965        | 1,226      | 8,860               | --             | 8,860              | 8,830                | 8,790             | 9,640                                      | 11,130                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | N80 HC           | 9,380                         | 1,453                     | --   | 965        | 1,226      | 8,860               | --             | 8,860              | 8,830                | 8,790             | 9,640                                      | 11,130                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | N80 HP           | 10,200                        | 1,725                     | --   | 1,109      | 1,344      | 10,520              | --             | 9,630              | 8,830                | 10,440            | 11,450                                     | 11,780                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | C90              | 8,980                         | 1,635                     | --   | 1,052      | 1,278      | 9,970               | --             | 9,970              | 9,940                | 9,890             | 10,850                                     | 11,190                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | USS C90          | 8,980                         | 1,635                     | --   | 1,052      | 1,278      | 9,970               | --             | 9,970              | 9,940                | 9,890             | 10,850                                     | 11,190                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | C95              | 9,320                         | 1,725                     | --   | 1,109      | 1,344      | 10,520              | --             | 10,520             | 10,490               | 10,440            | 11,450                                     | 11,780                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | T95              | 9,320                         | 1,725                     | --   | 1,109      | 1,344      | 10,520              | --             | 10,520             | 10,490               | 10,440            | 11,450                                     | 11,780                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | USS C95          | 9,320                         | 1,725                     | --   | 1,109      | 1,344      | 10,520              | --             | 10,520             | 10,490               | 10,440            | 11,450                                     | 11,780                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | USS C100         | 9,650                         | 1,816                     | --   | 1,139      | 1,330      | 11,080              | --             | 11,080             | 11,040               | 10,990            | 12,050                                     | 11,250                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | C110             | 10,280                        | 1,998                     | --   | --         | --         | 12,190              | --             | --                 | --                   | 12,090            | 13,260                                     | 14,130                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | P110 SR16        | 10,280                        | 1,998                     | --   | 1,293      | 1,584      | 12,190              | --             | 12,190             | 12,140               | 12,090            | 13,260                                     | 12,780                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | P110             | 10,280                        | 1,998                     | --   | 1,293      | 1,584      | 12,190              | --             | 12,190             | 12,140               | 12,090            | 13,260                                     | 14,130                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | P110 HC          | 11,430                        | 1,998                     | --   | 1,293      | 1,584      | 12,190              | --             | 12,190             | 12,140               | 12,090            | 13,260                                     | 14,130                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | P110 HP          | 12,320                        | 2,270                     | --   | 1,437      | 1,702      | 13,850              | --             | 13,280             | 12,140               | 13,740            | 15,070                                     | 14,800                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | Q125             | 11,140                        | 2,270                     | --   | 1,451      | 1,743      | 13,850              | --             | 13,850             | 13,800               | 13,740            | 15,070                                     | 15,370                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | Q125 HC          | 11,980                        | 2,270                     | --   | 1,451      | 1,743      | 13,850              | --             | 13,850             | 13,800               | 13,740            | 15,070                                     | 15,370                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | Q125 HP          | 12,910                        | 2,452                     | --   | 1,551      | 1,835      | 14,960              | --             | 14,960             | 13,800               | 14,840            | 16,270                                     | 16,020                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | USS140           | 11,870                        | 2,543                     | --   | 1,622      | 1,942      | 15,510              | --             | 15,510             | 15,460               | 15,390            | 16,870                                     | 17,210                     | 10.625                         | -- |
| 9 7/8                           | 62.80        | 61.80        | 0.625              | 8.625             | 8.469               | 8.500                     | USS V150         | 12,300                        | 2,724                     | --   | 1,735      | 2,075      | 16,620              | --             | 16,620             | 16,560               | 16,490            | 18,080                                     | 18,450                     | 10.625                         | -- |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | K55              | 6,650                         | 1,036                     | 671  | 775        | 1,105      | 6,340               | 6,180          | 6,340              | 6,070                | 6,280             | 6,880                                      | 8,140                      | 10.625                         | -- |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | USS GT80S        | 8,880                         | 1,507                     | --   | 1,005      | 1,241      | 9,220               | --             | 9,220              | 8,830                | 9,140             | 10,010                                     | 11,030                     | 10.625                         | -- |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | L80              | 8,880                         | 1,507                     | --   | 1,005      | 1,241      | 9,220               | --             | 9,220              | 8,830                | 9,140             | 10,010                                     | 11,030                     | 10.625                         | -- |



| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |       |       | Internal Yield      |                                   |        |                   | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |                      |       |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|-----------------------------------|--------|-------------------|--|----------------------------|--------------------------------|----------------------|-------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |       |       | API Historical      |                                   |        | Lame' - Von Mises |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |                      |       |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |       |       | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC LTC BTC |        |                   | Open<br>End<br>psi                         |                            |                                | Capped<br>End<br>psi |       |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | L80 HC           | 9,530                         | 1,507                     | --   | 1,005 | 1,241 | 9,220               | --                                | 9,220  | 8,830             | 9,140                                      | 10,010                     | 11,030                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | L80 HP           | 10,060                        | 1,601                     | --   | 1,050 | 1,268 | 9,800               | --                                | 9,630  | 8,830             | 9,710                                      | 10,630                     | 11,030                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | N80n             | 8,880                         | 1,507                     | --   | 1,019 | 1,283 | 9,220               | --                                | 9,220  | 8,830             | 9,140                                      | 10,010                     | 11,610                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | N80              | 8,880                         | 1,507                     | --   | 1,019 | 1,283 | 9,220               | --                                | 9,220  | 8,830             | 9,140                                      | 10,010                     | 11,610                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | N80 HC           | 9,970                         | 1,507                     | --   | 1,019 | 1,283 | 9,220               | --                                | 9,220  | 8,830             | 9,140                                      | 10,010                     | 11,610                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | N80 HP           | 10,830                        | 1,790                     | --   | 1,171 | 1,407 | 10,950              | --                                | 9,630  | 8,830             | 10,860                                     | 11,880                     | 12,280                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | C90              | 9,690                         | 1,695                     | --   | 1,111 | 1,338 | 10,370              | --                                | 10,370 | 9,940             | 10,280                                     | 11,260                     | 11,670                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | USS C90          | 9,690                         | 1,695                     | --   | 1,111 | 1,338 | 10,370              | --                                | 10,370 | 9,940             | 10,280                                     | 11,260                     | 11,670                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | C95              | 10,080                        | 1,790                     | --   | 1,171 | 1,407 | 10,950              | --                                | 10,950 | 10,490            | 10,860                                     | 11,880                     | 12,280                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | T95              | 10,080                        | 1,790                     | --   | 1,171 | 1,407 | 10,950              | --                                | 10,950 | 10,490            | 10,860                                     | 11,880                     | 12,280                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | USS C95          | 10,080                        | 1,790                     | --   | 1,171 | 1,407 | 10,950              | --                                | 10,950 | 10,490            | 10,860                                     | 11,880                     | 12,280                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | USS C100         | 10,450                        | 1,884                     | --   | 1,202 | 1,392 | 11,520              | --                                | 11,520 | 11,040            | 11,430                                     | 12,510                     | 11,730                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | C110             | 11,170                        | 2,072                     | --   | --    | --    | 12,680              | --                                | --     | --                | 12,570                                     | 13,760                     | 14,730                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | P110 SR16        | 11,170                        | 2,072                     | --   | 1,365 | 1,659 | 12,680              | --                                | 12,680 | 12,140            | 12,570                                     | 13,760                     | 13,320                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | P110             | 11,170                        | 2,072                     | --   | 1,365 | 1,659 | 12,680              | --                                | 12,680 | 12,140            | 12,570                                     | 13,760                     | 14,730                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | P110 HC          | 12,260                        | 2,072                     | --   | 1,365 | 1,659 | 12,680              | --                                | 12,680 | 12,140            | 12,570                                     | 13,760                     | 14,730                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | P110 HP          | 13,210                        | 2,355                     | --   | 1,517 | 1,783 | 14,410              | --                                | 13,280 | 12,140            | 14,280                                     | 15,630                     | 15,430                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | Q125             | 12,160                        | 2,355                     | --   | 1,531 | 1,825 | 14,410              | --                                | 14,410 | 13,800            | 14,280                                     | 15,630                     | 16,030                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | Q125 HC          | 12,900                        | 2,355                     | --   | 1,531 | 1,825 | 14,410              | --                                | 14,410 | 13,800            | 14,280                                     | 15,630                     | 16,030                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | Q125 HP          | 13,890                        | 2,543                     | --   | 1,637 | 1,922 | 15,560              | --                                | 15,090 | 13,800            | 15,430                                     | 16,880                     | 16,700                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | USS140           | 13,050                        | 2,637                     | --   | 1,711 | 2,034 | 16,130              | --                                | 16,130 | 15,460            | 16,000                                     | 17,510                     | 17,940                         | 10.625               | --    |
| 9 7/8                           | 65.10        | 64.10        | 0.650              | 8.575             | 8.419               | 8.500                     | USS V150         | 13,570                        | 2,826                     | --   | 1,831 | 2,173 | 17,290              | --                                | 17,290 | 16,560            | 17,140                                     | 18,760                     | 19,240                         | 10.625               | --    |
| 10 3/4                          | 32.75        | 31.23        | 0.279              | 10.192            | 10.036              | --                        | H40              | 840                           | 367                       | 205  | --    | --    | 1,820               | 1,820                             | --     | --                | 1,810                                      | 2,050                      | 1,960                          | 11.750               | 11.25 |
| 10 3/4                          | 40.50        | 38.91        | 0.350              | 10.050            | 9.894               | --                        | H40              | 1,390                         | 457                       | 314  | --    | --    | 2,280               | 2,280                             | --     | --                | 2,270                                      | 2,550                      | 2,470                          | 11.750               | 11.25 |
| 10 3/4                          | 40.50        | 38.91        | 0.350              | 10.050            | 9.894               | --                        | J55              | 1,580                         | 629                       | 420  | --    | 700   | 3,130               | 3,130                             | --     | 3,130             | 3,120                                      | 3,510                      | 3,110                          | 11.750               | 11.25 |
| 10 3/4                          | 40.50        | 38.91        | 0.350              | 10.050            | 9.894               | --                        | K55              | 1,580                         | 629                       | 450  | --    | 819   | 3,130               | 3,130                             | --     | 3,130             | 3,120                                      | 3,510                      | 3,930                          | 11.750               | 11.25 |
| 10 3/4                          | 40.50        | 38.91        | 0.350              | 10.050            | 9.894               | --                        | USS HCK55        | 1,900                         | 629                       | 450  | --    | 819   | 3,130               | 3,130                             | --     | 3,130             | 3,120                                      | 3,510                      | 3,930                          | 11.750               | 11.25 |
| 10 3/4                          | 40.50        | 38.91        | 0.350              | 10.050            | 9.894               | --                        | USS FS80         | 2,100                         | 858                       | 562  | --    | 911   | 4,270               | 4,270                             | --     | 4,270             | 4,260                                      | 4,780                      | 4,790                          | 11.750               | 11.25 |
| 10 3/4                          | 45.50        | 44.26        | 0.400              | 9.950             | 9.794               | 9.875                     | J55              | 2,090                         | 715                       | 493  | --    | 796   | 3,580               | 3,580                             | --     | 3,580             | 3,570                                      | 3,990                      | 3,560                          | 11.750               | 11.25 |
| 10 3/4                          | 45.50        | 44.26        | 0.400              | 9.950             | 9.794               | 9.875                     | K55              | 2,090                         | 715                       | 528  | --    | 931   | 3,580               | 3,580                             | --     | 3,580             | 3,570                                      | 3,990                      | 4,510                          | 11.750               | 11.25 |
| 10 3/4                          | 45.50        | 44.26        | 0.400              | 9.950             | 9.794               | 9.875                     | USS HCK55        | 2,840                         | 715                       | 528  | --    | 931   | 3,580               | 3,580                             | --     | 3,580             | 3,570                                      | 3,990                      | 4,510                          | 11.750               | 11.25 |
| 10 3/4                          | 45.50        | 44.26        | 0.400              | 9.950             | 9.794               | 9.875                     | USS FS80         | 2,960                         | 975                       | 659  | --    | 1,037 | 4,880               | 4,880                             | --     | 4,880             | 4,870                                      | 5,440                      | 5,500                          | 11.750               | 11.25 |
| 10 3/4                          | 45.50        | 44.26        | 0.400              | 9.950             | 9.794               | 9.875                     | L80              | 2,470                         | 1,040                     | 692  | --    | 1,063 | 5,210               | 5,210                             | --     | 5,210             | 5,200                                      | 5,810                      | 5,510                          | 11.750               | 11.25 |
| 10 3/4                          | 45.50        | 44.26        | 0.400              | 9.950             | 9.794               | 9.875                     | L80 HC           | 2,940                         | 1,040                     | 692  | --    | 1,063 | 5,210               | 5,210                             | --     | 5,210             | 5,200                                      | 5,810                      | 5,510                          | 11.750               | 11.25 |
| 10 3/4                          | 45.50        | 44.26        | 0.400              | 9.950             | 9.794               | 9.875                     | L80 HP           | 3,120                         | 1,106                     | 725  | --    | 1,089 | 5,690               | 5,690                             | --     | 5,690             | 5,680                                      | 6,340                      | 5,700                          | 11.750               | 11.25 |
| 10 3/4                          | 45.50        | 44.26        | 0.400              | 9.950             | 9.794               | 9.875                     | N80n             | 2,470                         | 1,040                     | 701  | --    | 1,097 | 5,210               | 5,210                             | --     | 5,210             | 5,200                                      | 5,810                      | 4,810                          | 11.750               | 11.25 |
| 10 3/4                          | 45.50        | 44.26        | 0.400              | 9.950             | 9.794               | 9.875                     | N80              | 2,470                         | 1,040                     | 701  | --    | 1,097 | 5,210               | 5,210                             | --     | 5,210             | 5,200                                      | 5,810                      | 5,800                          | 11.750               | 11.25 |
| 10 3/4                          | 45.50        | 44.26        | 0.400              | 9.950             | 9.794               | 9.875                     | N80 HC           | 3,020                         | 1,040                     | 701  | --    | 1,097 | 5,210               | 5,210                             | --     | 5,210             | 5,200                                      | 5,810                      | 5,800                          | 11.750               | 11.25 |
| 10 3/4                          | 45.50        | 44.26        | 0.400              | 9.950             | 9.794               | 9.875                     | N80 HP           | 3,220                         | 1,236                     | 808  | --    | 1,209 | 6,360               | 6,360                             | --     | 6,360             | 6,340                                      | 7,090                      | 6,350                          | 11.750               | 11.25 |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |                     |                    | Internal Yield |        |                    |                      |        |                            | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter               |       |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|---------------------|--------------------|----------------|--------|--------------------|----------------------|--------|----------------------------|--|--------------------------------|-------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |                     |                    | API Historical |        |                    | Lame' - Von Mises    |        | Regular<br>Coupling<br>in. |  | Special Clr<br>Coupling<br>in. |       |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | Pipe<br>Body<br>psi | Threaded & Coupled |                |        | Open<br>End<br>psi | Capped<br>End<br>psi |        |                            |  |                                |       |
|                                 |              |              | STC<br>psi         | LTC<br>psi        | BTC<br>psi          |                           |                  |                               |                           |  |                     |                    |                |        |                    |                      |        |                            |  |                                |       |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | J55              | 2,710                         | 801                       | 565  | --                  | 891                | 4,030          | 4,030  | --                 | 4,030                | 4,020  | 4,470                      | 4,020                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | K55              | 2,710                         | 801                       | 606  | --                  | 1,043              | 4,030          | 4,030  | --                 | 4,030                | 4,020  | 4,470                      | 5,100                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | USS HCK55        | 4,040                         | 801                       | 606  | --                  | 1,043              | 4,030          | 4,030  | --                 | 4,030                | 4,020  | 4,470                      | 5,100                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | USS FS80         | 3,930                         | 1,092                     | 756  | --                  | 1,160              | 5,500          | 5,500  | --                 | 5,500                | 5,480  | 6,100                      | 6,210                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | USS GT80S        | 3,220                         | 1,165                     | 794  | --                  | 1,190              | 5,860          | 5,860  | --                 | 5,860                | 5,840  | 6,500                      | 6,230                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | L80              | 3,220                         | 1,165                     | 794  | --                  | 1,190              | 5,860          | 5,860  | --                 | 5,860                | 5,840  | 6,500                      | 6,230                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | L80 HC           | 3,890                         | 1,165                     | 794  | --                  | 1,190              | 5,860          | 5,860  | --                 | 5,860                | 5,840  | 6,500                      | 6,230                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | L80 HP           | 4,130                         | 1,238                     | 831  | --                  | 1,219              | 6,400          | 6,400  | --                 | 6,400                | 6,380  | 7,110                      | 6,440                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | N80n             | 3,220                         | 1,165                     | 804  | --                  | 1,228              | 5,860          | 5,860  | --                 | 5,860                | 5,840  | 6,500                      | 5,430                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | N80              | 3,220                         | 1,165                     | 804  | --                  | 1,228              | 5,860          | 5,860  | --                 | 5,860                | 5,840  | 6,500                      | 6,550                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | N80 HC           | 4,030                         | 1,165                     | 804  | --                  | 1,228              | 5,860          | 5,860  | --                 | 5,860                | 5,840  | 6,500                      | 6,550                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | N80 HP           | 4,300                         | 1,383                     | 927  | --                  | 1,354              | 7,160          | 7,160  | --                 | 7,160                | 7,130  | 7,940                      | 7,170                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | C90              | 3,400                         | 1,310                     | 879  | --                  | 1,287              | 6,600          | 6,600  | --                 | 6,600                | 6,570  | 7,320                      | 7,270                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | USS C90          | 3,400                         | 1,310                     | 879  | --                  | 1,287              | 6,600          | 6,600  | --                 | 6,600                | 6,570  | 7,320                      | 7,270                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | C95              | 3,480                         | 1,383                     | 927  | --                  | 1,354              | 6,960          | 6,960  | --                 | 6,960                | 6,940  | 7,720                      | 6,930                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | T95              | 3,480                         | 1,383                     | 927  | --                  | 1,354              | 6,960          | 6,960  | --                 | 6,960                | 6,940  | 7,720                      | 7,650                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | USS C95          | 3,480                         | 1,383                     | 927  | --                  | 1,354              | 6,960          | 6,960  | --                 | 6,960                | 6,940  | 7,720                      | 7,650                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | USS C100         | 3,550                         | 1,456                     | 954  | --                  | 1,345              | 7,330          | 7,330  | --                 | 7,330                | 7,310  | 8,130                      | 7,310                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | C110             | 3,660                         | 1,602                     | --   | --                  | --                 | 8,060          | --     | --                 | --                   | 8,040  | 8,940                      | 8,810                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | P110 SR16        | 3,660                         | 1,602                     | 1,079  | --                  | 1,594              | 8,060          | 8,060  | --                 | 8,060                | 8,040  | 8,940                      | 8,320                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | P110             | 3,660                         | 1,602                     | 1,079  | --                  | 1,594              | 8,060          | 8,060  | --                 | 8,060                | 8,040  | 8,940                      | 9,180                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | P110 HC          | 4,390                         | 1,602                     | 1,079  | --                  | 1,594              | 8,060          | 8,060  | --                 | 8,060                | 8,040  | 8,940                      | 9,180                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | P110 HP          | 4,670                         | 1,820                     | 1,202  | --                  | 1,720              | 9,420          | 9,420  | --                 | 9,420                | 9,380  | 10,450                     | 9,910                                      | 11.750                         | 11.25 |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | Q125             | 3,740                         | 1,820                     | 1,212  | --                  | 1,758              | 9,160          | 9,160  | --                 | 9,160                | 9,130  | 10,160                     | 9,990                                      | 11.750                         | --    |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | Q125 HC          | 4,470                         | 1,820                     | 1,212  | --                  | 1,758              | 9,160          | 9,160  | --                 | 9,160                | 9,130  | 10,160                     | 9,990                                      | 11.750                         | --    |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | Q125 HP          | 4,750                         | 1,966                     | 1,297  | --                  | 1,854              | 10,170         | 10,170 | --                 | 10,170               | 10,140 | 11,290                     | 10,730                                     | 11.750                         | --    |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | USS140           | 3,750                         | 2,039                     | 1,355  | --                  | 1,959              | 10,260         | 10,260 | --                 | 10,260               | 10,230 | 11,380                     | 11,180                                     | 11.750                         | --    |
| 10 3/4                          | 51.00        | 49.55        | 0.450              | 9.850             | 9.694               | --                        | USS V150         | 3,750                         | 2,184                     | 1,450  | --                  | 2,094              | 11,000         | 11,000 | --                 | 11,000               | 10,960 | 12,190                     | 11,980                                     | 11.750                         | --    |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | USS HCK55        | 4,780                         | 877                       | 675  | --                  | 1,142              | 4,430          | 4,430  | --                 | 4,430                | 4,410  | 4,900                      | 5,620                                      | 11.750                         | 11.25 |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | USS FS80         | 4,850                         | 1,196                     | 842  | --                  | 1,271              | 6,040          | 6,040  | --                 | 6,040                | 6,020  | 6,680                      | 6,850                                      | 11.750                         | 11.25 |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | USS GT80S        | 4,020                         | 1,276                     | 884  | --                  | 1,303              | 6,440          | 6,440  | --                 | 6,440                | 6,420  | 7,130                      | 6,860                                      | 11.750                         | 11.25 |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | L80              | 4,020                         | 1,276                     | 884  | --                  | 1,303              | 6,440          | 6,440  | --                 | 6,440                | 6,420  | 7,130                      | 6,860                                      | 11.750                         | 11.25 |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | L80 HC           | 4,790                         | 1,276                     | 884  | --                  | 1,303              | 6,440          | 6,440  | --                 | 6,440                | 6,420  | 7,130                      | 6,860                                      | 11.750                         | 11.25 |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | L80 HP           | 5,080                         | 1,355                     | 926  | --                  | 1,335              | 7,050          | 7,050  | --                 | 7,050                | 7,010  | 7,790                      | 7,100                                      | 11.750                         | 11.25 |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | N80n             | 4,020                         | 1,276                     | 895  | --                  | 1,345              | 6,440          | 6,440  | --                 | 6,440                | 6,420  | 7,130                      | 5,980                                      | 11.750                         | 11.25 |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | N80              | 4,020                         | 1,276                     | 895  | --                  | 1,345              | 6,440          | 6,440  | --                 | 6,440                | 6,420  | 7,130                      | 7,230                                      | 11.750                         | 11.25 |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | N80 HC           | 5,000                         | 1,276                     | 895  | --                  | 1,345              | 6,440          | 6,440  | --                 | 6,440                | 6,420  | 7,130                      | 7,230                                      | 11.750                         | 11.25 |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | N80 HP           | 5,350                         | 1,515                     | 1,032  | --                  | 1,483              | 7,870          | 7,870  | --                 | 7,870                | 7,840  | 8,700                      | 7,910                                      | 11.750                         | 11.25 |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | C90              | 4,160                         | 1,435                     | 979  | --                  | 1,409              | 7,250          | 7,250  | --                 | 7,250                | 7,220  | 8,020                      | 8,020                                      | 11.750                         | 11.25 |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |     |       | Internal Yield      |                |                    |                      |                   |                 | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter |            |         |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-----|-------|---------------------|----------------|--------------------|----------------------|-------------------|-----------------|--|------------------|------------|---------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |     |       | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |                 |  | End<br>psi       | End<br>psi | Regular |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC | LTC   |                     | BTC            | Open<br>End<br>psi | Capped<br>End<br>psi | Coupling<br>in.   | Coupling<br>in. |  |                  |            |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | USS C90          | 4,160                         | 1,435                     | 979  | --  | 1,409 | 7,250               | 7,250          | --                 | 7,250                | 7,220             | 8,020           | 8,020                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | C95              | 4,290                         | 1,515                     | 1,032  | --  | 1,483 | 7,650               | 7,650          | --                 | 7,650                | 7,620             | 8,460           | 7,640                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | T95              | 4,290                         | 1,515                     | 1,032  | --  | 1,483 | 7,650               | 7,650          | --                 | 7,650                | 7,620             | 8,460           | 8,440                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | USS C95          | 4,290                         | 1,515                     | 1,032  | --  | 1,483 | 7,650               | 7,650          | --                 | 7,650                | 7,620             | 8,460           | 8,440                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | USS C100         | 4,410                         | 1,595                     | 1,063  | --  | 1,474 | 8,060               | 8,060          | --                 | 8,060                | 8,020             | 8,910           | 8,060                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | C110             | 4,610                         | 1,754                     | --   | --  | --    | 8,860               | --             | --                 | --                   | 8,830             | 9,800           | 9,720                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | P110 SR16        | 4,610                         | 1,754                     | 1,202  | --  | 1,745 | 8,860               | 8,860          | --                 | 8,860                | 8,830             | 9,800           | 9,170                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | P110             | 4,610                         | 1,754                     | 1,202  | --  | 1,745 | 8,860               | 8,860          | --                 | 8,860                | 8,830             | 9,800           | 10,120                                     | 11.750           | 11.25      |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | P110 HC          | 5,570                         | 1,754                     | 1,202  | --  | 1,745 | 8,860               | 8,860          | --                 | 8,860                | 8,830             | 9,800           | 10,120                                     | 11.750           | 11.25      |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | P110 HP          | 5,930                         | 1,993                     | 1,339  | --  | 1,883 | 10,360              | 10,360         | --                 | 10,360               | 10,320            | 11,450          | 10,940                                     | 11.750           | 11.25      |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | Q125             | 4,850                         | 1,993                     | 1,350  | --  | 1,925 | 10,070              | 10,070         | --                 | 10,070               | 10,030            | 11,140          | 11,010                                     | 11.750           | --         |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | Q125 HC          | 5,710                         | 1,993                     | 1,350  | --  | 1,925 | 10,070              | 10,070         | --                 | 10,070               | 10,030            | 11,140          | 11,010                                     | 11.750           | --         |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | Q125 HP          | 6,070                         | 2,153                     | 1,445  | --  | 2,031 | 11,190              | 11,190         | --                 | 11,190               | 11,140            | 12,370          | 11,840                                     | 11.750           | --         |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | USS140           | 4,990                         | 2,233                     | 1,509  | --  | 2,146 | 11,280              | 11,280         | --                 | 11,280               | 11,230            | 12,470          | 12,330                                     | 11.750           | --         |         |
| 10 3/4                          | 55.50        | 54.26        | 0.495              | 9.760             | 9.604               | 9.625                     | USS V150         | 5,030                         | 2,392                     | 1,616  | --  | 2,293 | 12,080              | 12,080         | --                 | 12,080               | 12,030            | 13,360          | 13,220                                     | 11.750           | --         |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | USS FS80         | 5,900                         | 1,310                     | 937  | --  | 1,393 | 6,660               | 6,660          | --                 | 6,660                | 6,620             | 7,330           | 7,570                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | USS GT80S        | 5,160                         | 1,398                     | 983  | --  | 1,428 | 7,100               | 7,100          | --                 | 7,100                | 7,060             | 7,810           | 7,590                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | L80              | 5,160                         | 1,398                     | 983  | --  | 1,428 | 7,100               | 7,100          | --                 | 7,100                | 7,060             | 7,810           | 7,590                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | L80 HC           | 5,810                         | 1,398                     | 983  | --  | 1,428 | 7,100               | 7,100          | --                 | 7,100                | 7,060             | 7,810           | 7,590                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | L80 HP           | 6,160                         | 1,485                     | 1,030  | --  | 1,463 | 7,760               | 7,760          | --                 | 7,760                | 7,720             | 8,540           | 7,850                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | N80n             | 5,160                         | 1,398                     | 996  | --  | 1,473 | 7,100               | 7,100          | --                 | 7,100                | 7,060             | 7,810           | 6,610                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | N80              | 5,160                         | 1,398                     | 996  | --  | 1,473 | 7,100               | 7,100          | --                 | 7,100                | 7,060             | 7,810           | 7,990                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | N80 HC           | 6,110                         | 1,398                     | 996  | --  | 1,473 | 7,100               | 7,100          | --                 | 7,100                | 7,060             | 7,810           | 7,990                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | N80 HP           | 6,550                         | 1,660                     | 1,148  | --  | 1,625 | 8,670               | 8,180          | --                 | 7,990                | 8,620             | 9,540           | 8,740                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | C90              | 5,460                         | 1,573                     | 1,089  | --  | 1,544 | 7,990               | 7,990          | --                 | 7,990                | 7,950             | 8,790           | 8,870                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | USS C90          | 5,460                         | 1,573                     | 1,089  | --  | 1,544 | 7,990               | 7,990          | --                 | 7,990                | 7,950             | 8,790           | 8,870                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | C95              | 5,580                         | 1,660                     | 1,148  | --  | 1,625 | 8,430               | 8,430          | --                 | 8,430                | 8,390             | 9,280           | 8,450                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | T95              | 5,580                         | 1,660                     | 1,148  | --  | 1,625 | 8,430               | 8,430          | --                 | 8,430                | 8,390             | 9,280           | 9,330                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | USS C95          | 5,580                         | 1,660                     | 1,148  | --  | 1,625 | 8,430               | 8,430          | --                 | 8,430                | 8,390             | 9,280           | 9,330                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | USS C100         | 5,700                         | 1,747                     | 1,182  | --  | 1,615 | 8,870               | 8,870          | --                 | 8,870                | 8,830             | 9,770           | 8,910                                      | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | C110             | 5,880                         | 1,922                     | --   | --  | --    | 9,760               | --             | --                 | --                   | 9,710             | 10,740          | 10,750                                     | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | P110 SR16        | 5,880                         | 1,922                     | 1,337  | --  | 1,912 | 9,760               | 9,760          | --                 | 9,760                | 9,710             | 10,740          | 10,140                                     | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | P110             | 5,880                         | 1,922                     | 1,337  | --  | 1,912 | 9,760               | 9,760          | --                 | 9,760                | 9,710             | 10,740          | 11,200                                     | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | P110 HC          | 6,990                         | 1,922                     | 1,337  | --  | 1,912 | 9,760               | 9,760          | --                 | 9,760                | 9,710             | 10,740          | 11,200                                     | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | P110 HP          | 7,430                         | 2,184                     | 1,489  | --  | 2,064 | 11,410              | 11,280         | --                 | 10,980               | 11,350            | 12,550          | 12,100                                     | 11.750           | 11.25      |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | Q125             | 6,070                         | 2,184                     | 1,502  | --  | 2,109 | 11,090              | 11,090         | --                 | 11,090               | 11,040            | 12,210          | 12,180                                     | 11.750           | --         |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | Q125 HC          | 7,210                         | 2,184                     | 1,502  | --  | 2,109 | 11,090              | 11,090         | --                 | 11,090               | 11,040            | 12,210          | 12,180                                     | 11.750           | --         |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | Q125 HP          | 7,660                         | 2,359                     | 1,608  | --  | 2,225 | 12,320              | 12,320         | --                 | 12,320               | 12,250            | 13,560          | 13,090                                     | 11.750           | --         |         |
| 10 3/4                          | 60.70        | 59.45        | 0.545              | 9.660             | 9.504               | --                        | USS140           | 6,390                         | 2,446                     | 1,679  | --  | 2,351 | 12,420              | 12,420         | --                 | 12,420               | 12,360            | 13,670          | 13,640                                     | 11.750           | --         |         |

| Dimensional & Grade Designators |        |       |       |       |       |           |                  | Collapse<br>Resistance<br>psi | TENSION                   |                      |     |                  | Internal Yield |                    |     |                   |        | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |       |
|---------------------------------|--------|-------|-------|-------|-------|-----------|------------------|-------------------------------|---------------------------|----------------------|-----|------------------|----------------|--------------------|-----|-------------------|--------|--|----------------------------|--------------------------------|-------|
| O D<br>Size<br>in.              | Weight |       | NOM   | NOM   | API   | Alternate | Product<br>Grade |                               | Joint Strength, 1,000 lbs |                      |     |                  | API Historical |                    |     | Lame' - Von Mises |        |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |       |
|                                 | T&C    | P E   | Wall  | I D   | Drift | Drift     |                  |                               | Yield                     | Threaded and Coupled |     |                  | Pipe           | Threaded & Coupled |     | Open              | Capped |  |                            |                                |       |
|                                 | lb/ft  | lb/ft | in.   | in.   | in.   | in.       |                  |                               | Pipe Body                 | STC                  | LTC | BTC <sup>a</sup> | Body           | STC                | LTC | BTC               | End    | End  |                            |                                | psi   |
| 10 3/4                          | 60.70  | 59.45 | 0.545 | 9.660 | 9.504 | --        | USS V150         | 6,550                         | 2,621                     | 1,797                | --  | 2,513            | 13,310         | 13,310             | --  | 13,310            | 13,250 | 14,650                                     | 14,620                     | 11.750                         | --    |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | USS FS80         | 6,950                         | 1,424                     | 1,031                | --  | 1,513            | 7,270          | 7,270              | --  | 7,270             | 7,230  | 7,960                                      | 8,300                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | USS GT80S        | 6,300                         | 1,519                     | 1,082                | --  | 1,551            | 7,750          | 7,750              | --  | 7,750             | 7,710  | 8,490                                      | 8,320                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | L80              | 6,300                         | 1,519                     | 1,082                | --  | 1,551            | 7,750          | 7,750              | --  | 7,750             | 7,710  | 8,490                                      | 8,320                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | L80 HC           | 6,820                         | 1,519                     | 1,082                | --  | 1,551            | 7,750          | 7,750              | --  | 7,750             | 7,710  | 8,490                                      | 8,320                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | L80 HP           | 7,230                         | 1,613                     | 1,133                | --  | 1,590            | 8,470          | 8,180              | --  | 7,990             | 8,420  | 9,280                                      | 8,600                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | N80n             | 6,300                         | 1,519                     | 1,096                | --  | 1,600            | 7,750          | 7,750              | --  | 7,750             | 7,710  | 8,490                                      | 7,250                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | N80              | 6,300                         | 1,519                     | 1,096                | --  | 1,600            | 7,750          | 7,750              | --  | 7,750             | 7,710  | 8,490                                      | 8,760                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | N80 HC           | 7,230                         | 1,519                     | 1,096                | --  | 1,600            | 7,750          | 7,750              | --  | 7,750             | 7,710  | 8,490                                      | 8,760                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | N80 HP           | 7,760                         | 1,803                     | 1,263                | --  | 1,765            | 9,460          | 8,180              | --  | 7,990             | 9,410  | 10,370                                     | 9,580                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | C90              | 6,760                         | 1,708                     | 1,198                | --  | 1,677            | 8,720          | 8,720              | --  | 8,720             | 8,670  | 9,560                                      | 9,720                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | USS C90          | 6,760                         | 1,708                     | 1,198                | --  | 1,677            | 8,720          | 8,720              | --  | 8,720             | 8,670  | 9,560                                      | 9,720                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | C95              | 6,970                         | 1,803                     | 1,263                | --  | 1,765            | 9,210          | 9,210              | --  | 9,210             | 9,150  | 10,090                                     | 9,270                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | T95              | 6,970                         | 1,803                     | 1,263                | --  | 1,765            | 9,210          | 9,210              | --  | 9,210             | 9,150  | 10,090                                     | 10,240                     | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | USS C95          | 6,970                         | 1,803                     | 1,263                | --  | 1,765            | 9,210          | 9,210              | --  | 9,210             | 9,150  | 10,090                                     | 10,240                     | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | USS C100         | 7,160                         | 1,898                     | 1,300                | --  | 1,754            | 9,690          | 9,690              | --  | 9,690             | 9,640  | 10,620                                     | 9,770                      | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | C110             | 7,500                         | 2,088                     | --                   | --  | --               | 10,660         | --                 | --  | --                | 10,600 | 11,680                                     | 11,790                     | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | P110 SR16        | 7,500                         | 2,088                     | 1,471                | --  | 2,077            | 10,660         | 10,660             | --  | 10,660            | 10,600 | 11,680                                     | 11,110                     | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | P110             | 7,500                         | 2,088                     | 1,471                | --  | 2,077            | 10,660         | 10,660             | --  | 10,660            | 10,600 | 11,680                                     | 12,280                     | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | P110 HC          | 8,470                         | 2,088                     | 1,471                | --  | 2,077            | 10,660         | 10,660             | --  | 10,660            | 10,600 | 11,680                                     | 12,280                     | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | P110 HP          | 9,010                         | 2,373                     | 1,639                | --  | 2,242            | 12,450         | 11,280             | --  | 10,980            | 12,380 | 13,640                                     | 13,260                     | 11.750                         | 11.25 |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | Q125             | 7,920                         | 2,373                     | 1,652                | --  | 2,291            | 12,120         | 12,120             | --  | 12,120            | 12,040 | 13,270                                     | 13,360                     | 11.750                         | --    |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | Q125 HC          | 8,790                         | 2,373                     | 1,652                | --  | 2,291            | 12,120         | 12,120             | --  | 12,120            | 12,040 | 13,270                                     | 13,360                     | 11.750                         | --    |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | Q125 HP          | 9,340                         | 2,563                     | 1,768                | --  | 2,417            | 13,450         | 12,820             | --  | 12,480            | 13,370 | 14,730                                     | 14,360                     | 11.750                         | --    |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | USS140           | 8,200                         | 2,657                     | 1,847                | --  | 2,554            | 13,570         | 13,570             | --  | 13,570            | 13,490 | 14,870                                     | 14,960                     | 11.750                         | --    |
| 10 3/4                          | 65.70  | 64.59 | 0.595 | 9.560 | 9.404 | --        | USS V150         | 8,320                         | 2,847                     | 1,977                | --  | 2,730            | 14,540         | 14,540             | --  | 14,540            | 14,450 | 15,930                                     | 16,030                     | 11.750                         | --    |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | C90              | 8,760                         | 1,915                     | --                   | --  | --               | 9,850          | --                 | --  | --                | 9,770  | 10,720                                     | 11,040                     | --                             | --    |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | USS C90          | 8,760                         | 1,915                     | --                   | --  | --               | 9,850          | --                 | --  | --                | 9,770  | 10,720                                     | 11,040                     | --                             | --    |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | T95              | 9,090                         | 2,021                     | --                   | --  | --               | 10,390         | --                 | --  | --                | 10,310 | 11,320                                     | 11,620                     | --                             | --    |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | USS C95          | 9,090                         | 2,021                     | --                   | --  | --               | 10,390         | --                 | --  | --                | 10,310 | 11,320                                     | 11,620                     | --                             | --    |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | USS C100         | 9,410                         | 2,128                     | --                   | --  | --               | 10,940         | --                 | --  | --                | 10,860 | 11,910                                     | 11,100                     | --                             | --    |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | C110             | 10,010                        | 2,340                     | --                   | --  | --               | 12,030         | --                 | --  | --                | 11,940 | 13,100                                     | 13,380                     | --                             | --    |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | P110 SR16        | 10,010                        | 2,340                     | 1,675                | --  | 2,328            | 12,030         | 11,280             | --  | 10,980            | 11,940 | 13,100                                     | 12,610                     | 11.750                         | 11.25 |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | P110             | 10,010                        | 2,340                     | 1,675                | --  | 2,328            | 12,030         | 11,280             | --  | 10,980            | 11,940 | 13,100                                     | 13,940                     | 11.750                         | 11.25 |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | P110 HC          | 10,790                        | 2,340                     | 1,675                | --  | 2,328            | 12,030         | 11,280             | --  | 10,980            | 11,940 | 13,100                                     | 13,940                     | 11.750                         | 11.25 |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | P110 HP          | 11,480                        | 2,660                     | 1,865                | --  | 2,443            | 14,070         | 11,280             | --  | 10,980            | 13,950 | 15,300                                     | 15,080                     | 11.750                         | 11.25 |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | Q125             | 10,810                        | 2,660                     | 1,881                | --  | 2,568            | 13,670         | 12,820             | --  | 12,480            | 13,570 | 14,890                                     | 15,170                     | 11.750                         | --    |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | Q125 HC          | 11,300                        | 2,660                     | 1,881                | --  | 2,568            | 13,670         | 12,820             | --  | 12,480            | 13,570 | 14,890                                     | 15,170                     | 11.750                         | --    |
| 10 3/4                          | 73.20  | 72.40 | 0.672 | 9.406 | 9.250 | --        | Q125 HP          | 12,010                        | 2,872                     | 2,013                | --  | 2,638            | 15,190         | 12,820             | --  | 12,480            | 15,070 | 16,530                                     | 16,320                     | 11.750                         | --    |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | TENSION                       |                           |  |    |       | Internal Yield      |   |    |                   |                    | Ductile                         |                      |                            |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|----|-------|---------------------|---|----|-------------------|--------------------|---------------------------------|----------------------|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade | Collapse<br>Resistance<br>psi | Joint Strength, 1,000 lbs |  |    |       | API Historical      |   |    | Lame' - Von Mises |                    | Rupture<br>Capped<br>End<br>psi | Outside Diameter     |                            |                                |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |    |       | Pipe<br>Body<br>psi | Threaded & Coupled<br>STC psi LTC psi BTC psi |    |                   | Open<br>End<br>psi |                                 | Capped<br>End<br>psi | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
| 10 3/4                          | 73.20        | 72.40        | 0.672              | 9.406             | 9.250               | --                        | USS140           | 11,510                        | 2,979                     | 2,103  | -- | 2,863 | 15,320              | 14,360  | -- | 13,980            | 15,200             | 16,680                          | 16,980               | 11.750                     | --                             |
| 10 3/4                          | 73.20        | 72.40        | 0.672              | 9.406             | 9.250               | --                        | USS V150         | 11,900                        | 3,191                     | 2,251  | -- | 3,060 | 16,410              | 15,380  | -- | 14,970            | 16,290             | 17,870                          | 18,210               | 11.750                     | --                             |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | C90              | 10,370                        | 2,079                     | --   | -- | --    | 10,750              | --  | -- | --                | 10,650             | 11,650                          | 12,120               | --                         | --                             |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | USS C90          | 10,370                        | 2,079                     | --   | -- | --    | 10,750              | --  | -- | --                | 10,650             | 11,650                          | 12,120               | --                         | --                             |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | T95              | 10,800                        | 2,194                     | --   | -- | --    | 11,350              | --  | -- | --                | 11,240             | 12,300                          | 12,750               | --                         | --                             |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | USS C95          | 10,800                        | 2,194                     | --   | -- | --    | 11,350              | --  | -- | --                | 11,240             | 12,300                          | 12,750               | --                         | --                             |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | USS C100         | 11,220                        | 2,310                     | --   | -- | --    | 11,940              | --  | -- | --                | 11,840             | 12,940                          | 12,180               | --                         | --                             |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | C110             | 12,020                        | 2,541                     | --   | -- | --    | 13,140              | --  | -- | --                | 13,020             | 14,240                          | 14,690               | --                         | --                             |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | P110 SR16        | 12,020                        | 2,541                     | 1,836  | -- | 2,443 | 13,140              | 11,280  | -- | 10,980            | 13,020             | 14,240                          | 13,830               | 11.750                     | 11.25                          |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | P110             | 12,020                        | 2,541                     | 1,836  | -- | 2,443 | 13,140              | 11,280  | -- | 10,980            | 13,020             | 14,240                          | 15,300               | 11.750                     | 11.25                          |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | P110 HC          | 12,640                        | 2,541                     | 1,836  | -- | 2,443 | 13,140              | 11,280  | -- | 10,980            | 13,020             | 14,240                          | 15,300               | 11.750                     | 11.25                          |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | P110 HP          | 13,450                        | 2,887                     | 2,045  | -- | 2,443 | 15,360              | 11,280  | -- | 10,980            | 15,220             | 16,630                          | 16,550               | 11.750                     | 11.25                          |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | Q125             | 13,150                        | 2,887                     | 2,062  | -- | 2,638 | 14,930              | 12,820  | -- | 12,480            | 14,800             | 16,180                          | 16,650               | 11.750                     | --                             |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | Q125 HC          | 13,330                        | 2,887                     | 2,062  | -- | 2,638 | 14,930              | 12,820  | -- | 12,480            | 14,800             | 16,180                          | 16,650               | 11.750                     | --                             |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | Q125 HP          | 14,150                        | 3,118                     | 2,207  | -- | 2,638 | 16,590              | 12,820  | -- | 12,480            | 16,430             | 17,960                          | 17,920               | 11.750                     | --                             |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | USS140           | 14,170                        | 3,233                     | 2,305  | -- | 2,931 | 16,720              | 14,360  | -- | 13,980            | 16,570             | 18,120                          | 18,640               | 11.750                     | --                             |
| 10 3/4                          | 79.20        | 78.59        | 0.734              | 9.282             | 9.126               | --                        | USS V150         | 14,790                        | 3,464                     | 2,468  | -- | 3,126 | 17,920              | 15,380  | -- | 14,970            | 17,750             | 19,420                          | 19,980               | 11.750                     | --                             |
| 10 3/4                          | 85.30        | 84.80        | 0.797              | 9.156             | 9.000               | --                        | C90              | 12,010                        | 2,243                     | --   | -- | --    | 11,670              | --  | -- | --                | 11,550             | 12,580                          | 13,220               | --                         | --                             |
| 10 3/4                          | 85.30        | 84.80        | 0.797              | 9.156             | 9.000               | --                        | USS C90          | 12,010                        | 2,243                     | --   | -- | --    | 11,670              | --  | -- | --                | 11,550             | 12,580                          | 13,220               | --                         | --                             |
| 10 3/4                          | 85.30        | 84.80        | 0.797              | 9.156             | 9.000               | --                        | T95              | 12,540                        | 2,367                     | --   | -- | --    | 12,320              | --  | -- | --                | 12,190             | 13,280                          | 13,920               | --                         | --                             |
| 10 3/4                          | 85.30        | 84.80        | 0.797              | 9.156             | 9.000               | --                        | USS C95          | 12,540                        | 2,367                     | --   | -- | --    | 12,320              | --  | -- | --                | 12,190             | 13,280                          | 13,920               | --                         | --                             |
| 10 3/4                          | 85.30        | 84.80        | 0.797              | 9.156             | 9.000               | --                        | USS C100         | 13,060                        | 2,492                     | --   | -- | --    | 12,970              | --  | -- | --                | 12,830             | 13,980                          | 13,290               | --                         | --                             |
| 10 3/4                          | 85.30        | 84.80        | 0.797              | 9.156             | 9.000               | --                        | C110             | 14,070                        | 2,741                     | --   | -- | --    | 14,260              | --  | -- | --                | 14,110             | 15,380                          | 16,030               | --                         | --                             |
| 11 3/4                          | 42.00        | 40.64        | 0.333              | 11.084            | 10.928              | 11.000                    | H40              | 1,040                         | 478                       | 307  | -- | --    | 1,980               | 1,980   | -- | --                | 1,980              | 2,230                           | 2,140                | 12.750                     | --                             |
| 11 3/4                          | 47.00        | 45.60        | 0.375              | 11.000            | 10.844              | --                        | J55              | 1,510                         | 737                       | 477  | -- | 807   | 3,070               | 3,070   | -- | 3,070             | 3,060              | 3,440                           | 3,040                | 12.750                     | --                             |
| 11 3/4                          | 47.00        | 45.60        | 0.375              | 11.000            | 10.844              | --                        | K55              | 1,510                         | 737                       | 509  | -- | 935   | 3,070               | 3,070   | -- | 3,070             | 3,060              | 3,440                           | 3,860                | 12.750                     | --                             |
| 11 3/4                          | 47.00        | 45.60        | 0.375              | 11.000            | 10.844              | --                        | USS HCK55        | 1,790                         | 737                       | 509  | -- | 935   | 3,070               | 3,070   | -- | 3,070             | 3,060              | 3,440                           | 3,860                | 12.750                     | --                             |
| 11 3/4                          | 54.00        | 52.62        | 0.435              | 10.880            | 10.724              | --                        | J55              | 2,070                         | 850                       | 568  | -- | 931   | 3,570               | 3,570   | -- | 3,570             | 3,560              | 3,970                           | 3,550                | 12.750                     | --                             |
| 11 3/4                          | 54.00        | 52.62        | 0.435              | 10.880            | 10.724              | --                        | K55              | 2,070                         | 850                       | 606  | -- | 1,079 | 3,570               | 3,570   | -- | 3,570             | 3,560              | 3,970                           | 4,500                | 12.750                     | --                             |
| 11 3/4                          | 54.00        | 52.62        | 0.435              | 10.880            | 10.724              | --                        | USS HCK55        | 2,790                         | 850                       | 606  | -- | 1,079 | 3,570               | 3,570   | -- | 3,570             | 3,560              | 3,970                           | 4,500                | 12.750                     | --                             |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | J55              | 2,670                         | 952                       | 649  | -- | 1,042 | 4,010               | 4,010   | -- | 4,010             | 3,990              | 4,450                           | 4,000                | 12.750                     | --                             |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | K55              | 2,670                         | 952                       | 693  | -- | 1,208 | 4,010               | 4,010   | -- | 4,010             | 3,990              | 4,450                           | 5,060                | 12.750                     | --                             |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | USS HCK55        | 3,970                         | 952                       | 693  | -- | 1,208 | 4,010               | 4,010   | -- | 4,010             | 3,990              | 4,450                           | 5,060                | 12.750                     | --                             |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | USS GT80S        | 3,180                         | 1,384                     | 913  | -- | 1,399 | 5,830               | 5,830   | -- | 5,830             | 5,810              | 6,470                           | 6,190                | 12.750                     | --                             |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | L80              | 3,180                         | 1,384                     | 913  | -- | 1,399 | 5,830               | 5,830   | -- | 5,830             | 5,810              | 6,470                           | 6,190                | 12.750                     | --                             |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | L80 HC           | 3,840                         | 1,384                     | 913  | -- | 1,399 | 5,830               | 5,830   | -- | 5,830             | 5,810              | 6,470                           | 6,190                | 12.750                     | --                             |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | L80 HP           | 4,070                         | 1,471                     | 956  | -- | 1,437 | 6,370               | 6,370   | -- | 6,370             | 6,340              | 7,070                           | 6,400                | 12.750                     | --                             |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | N80n             | 3,180                         | 1,384                     | 924  | -- | 1,440 | 5,830               | 5,830   | -- | 5,830             | 5,810              | 6,470                           | 5,400                | 12.750                     | --                             |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | N80              | 3,180                         | 1,384                     | 924  | -- | 1,440 | 5,830               | 5,830   | -- | 5,830             | 5,810              | 6,470                           | 6,510                | 12.750                     | --                             |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |            |            | Internal Yield      |                |                    |                      |                   |        | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter |            |            |                            |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|------------|------------|---------------------|----------------|--------------------|----------------------|-------------------|--------|--|------------------|------------|------------|----------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |            |            | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |        |  | End<br>psi       | End<br>psi | End<br>psi | Regular<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC<br>psi | LTC<br>psi |                     | BTC<br>psi     | Open<br>End<br>psi | Capped<br>End<br>psi |                   |        |  |                  |            |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | N80 HC           | 3,970                         | 1,384                     | 924  | --         | 1,440      | 5,830               | 5,830          | --                 | 5,830                | 5,810             | 6,470  | 6,510                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | N80 HP           | 4,240                         | 1,644                     | 1,066  | --         | 1,596      | 7,120               | 7,120          | --                 | 7,120                | 7,090             | 7,900  | 7,120                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | C90              | 3,360                         | 1,557                     | 1,011  | --         | 1,517      | 6,560               | 6,560          | --                 | 6,560                | 6,530             | 7,280  | 7,220                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | USS C90          | 3,360                         | 1,557                     | 1,011  | --         | 1,517      | 6,560               | 6,560          | --                 | 6,560                | 6,530             | 7,280  | 7,220                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | C95              | 3,440                         | 1,644                     | 1,067  | --         | 1,597      | 6,920               | 6,920          | --                 | 6,920                | 6,900             | 7,680  | 6,900                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | T95              | 3,440                         | 1,644                     | 1,066  | --         | 1,596      | 6,920               | 6,920          | --                 | 6,920                | 6,900             | 7,680  | 7,600                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | USS C95          | 3,440                         | 1,644                     | 1,066  | --         | 1,596      | 6,920               | 6,920          | --                 | 6,920                | 6,900             | 7,680  | 7,600                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | USS C100         | 3,500                         | 1,730                     | 1,099  | --         | 1,593      | 7,290               | 7,290          | --                 | 7,290                | 7,260             | 8,080  | 7,260                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | C110             | 3,610                         | 1,903                     | --   | --         | --         | 8,010               | --             | --                 | --                   | 7,990             | 8,890  | 8,750                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | P110 SR16        | 3,610                         | 1,903                     | 1,242  | --         | 1,877      | 8,010               | 8,010          | --                 | 8,010                | 7,990             | 8,890  | 8,260                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | P110             | 3,610                         | 1,903                     | 1,242  | --         | 1,877      | 8,010               | 8,010          | --                 | 8,010                | 7,990             | 8,890  | 9,120                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | P110 HC          | 4,320                         | 1,903                     | 1,242  | --         | 1,877      | 8,010               | 8,010          | --                 | 8,010                | 7,990             | 8,890  | 9,120                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | P110 HP          | 4,600                         | 2,163                     | 1,384  | --         | 2,033      | 9,360               | 9,360          | --                 | 9,360                | 9,330             | 10,390 | 9,850                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | Q125             | 3,680                         | 2,163                     | 1,395  | --         | 2,074      | 9,110               | 9,110          | --                 | 9,110                | 9,080             | 10,100 | 9,920                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | Q125 HC          | 4,400                         | 2,163                     | 1,395  | --         | 2,074      | 9,110               | 9,110          | --                 | 9,110                | 9,080             | 10,100 | 9,920                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | Q125 HP          | 4,680                         | 2,336                     | 1,494  | --         | 2,192      | 10,110              | 10,110         | --                 | 10,110               | 10,080            | 11,220 | 10,660                                     | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | USS140           | 3,680                         | 2,422                     | 1,560  | --         | 2,313      | 10,200              | 10,200         | --                 | 10,200               | 10,160            | 11,320 | 11,110                                     | 12.750           | --         |            |                            |
| 11 3/4                          | 60.00        | 58.87        | 0.489              | 10.772            | 10.616              | 10.625                    | USS V150         | 3,680                         | 2,595                     | 1,670  | --         | 2,473      | 10,930              | 10,930         | --                 | 10,930               | 10,890            | 12,130 | 11,910                                     | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | USS GT80S        | 3,870                         | 1,505                     | 1,007  | --         | 1,521      | 6,360               | 6,360          | --                 | 6,360                | 6,330             | 7,040  | 6,770                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | L80              | 3,870                         | 1,505                     | 1,007  | --         | 1,521      | 6,360               | 6,360          | --                 | 6,360                | 6,330             | 7,040  | 6,770                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | L80 HC           | 4,660                         | 1,505                     | 1,007  | --         | 1,521      | 6,360               | 6,360          | --                 | 6,360                | 6,330             | 7,040  | 6,770                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | L80 HP           | 4,940                         | 1,599                     | 1,055  | --         | 1,563      | 6,950               | 6,950          | --                 | 6,950                | 6,920             | 7,690  | 7,010                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | N80n             | 3,870                         | 1,505                     | 1,019  | --         | 1,566      | 6,360               | 6,360          | --                 | 6,360                | 6,330             | 7,040  | 5,900                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | N80              | 3,870                         | 1,505                     | 1,019  | --         | 1,566      | 6,360               | 6,360          | --                 | 6,360                | 6,330             | 7,040  | 7,130                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | N80 HC           | 4,860                         | 1,505                     | 1,019  | --         | 1,566      | 6,360               | 6,360          | --                 | 6,360                | 6,330             | 7,040  | 7,130                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | N80 HP           | 5,190                         | 1,788                     | 1,177  | --         | 1,736      | 7,770               | 7,540          | --                 | 7,360                | 7,740             | 8,590  | 7,800                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | C90              | 4,060                         | 1,693                     | 1,116  | --         | 1,650      | 7,150               | 7,150          | --                 | 7,150                | 7,130             | 7,920  | 7,910                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | USS C90          | 4,060                         | 1,693                     | 1,116  | --         | 1,650      | 7,150               | 7,150          | --                 | 7,150                | 7,130             | 7,920  | 7,910                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | C95              | 4,170                         | 1,788                     | 1,177  | --         | 1,737      | 7,550               | 7,550          | --                 | 7,550                | 7,520             | 8,360  | 7,550                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | T95              | 4,170                         | 1,788                     | 1,177  | --         | 1,736      | 7,550               | 7,550          | --                 | 7,550                | 7,520             | 8,360  | 8,320                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | USS C95          | 4,170                         | 1,788                     | 1,177  | --         | 1,736      | 7,550               | 7,550          | --                 | 7,550                | 7,520             | 8,360  | 8,320                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | USS C100         | 4,290                         | 1,882                     | 1,213  | --         | 1,733      | 7,950               | 7,950          | --                 | 7,950                | 7,920             | 8,800  | 7,950                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | C110             | 4,480                         | 2,070                     | --   | --         | --         | 8,740               | --             | --                 | --                   | 8,710             | 9,680  | 9,580                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | P110 SR16        | 4,480                         | 2,070                     | 1,370  | --         | 2,041      | 8,740               | 8,740          | --                 | 8,740                | 8,710             | 9,680  | 9,040                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | P110             | 4,480                         | 2,070                     | 1,370  | --         | 2,041      | 8,740               | 8,740          | --                 | 8,740                | 8,710             | 9,680  | 9,980                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | P110 HC          | 5,390                         | 2,070                     | 1,370  | --         | 2,041      | 8,740               | 8,740          | --                 | 8,740                | 8,710             | 9,680  | 9,980                                      | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | P110 HP          | 5,740                         | 2,352                     | 1,527  | --         | 2,211      | 10,230              | 10,230         | --                 | 10,120               | 10,180            | 11,310 | 10,800                                     | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | Q125             | 4,690                         | 2,352                     | 1,539  | --         | 2,256      | 9,940               | 9,940          | --                 | 9,940                | 9,900             | 11,000 | 10,860                                     | 12.750           | --         |            |                            |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | Q125 HC          | 5,520                         | 2,352                     | 1,539  | --         | 2,256      | 9,940               | 9,940          | --                 | 9,940                | 9,900             | 11,000 | 10,860                                     | 12.750           | --         |            |                            |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |    |       | Internal Yield      |                |            |            |                    |                      | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|----|-------|---------------------|----------------|------------|------------|--------------------|----------------------|--|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |    |       | Pipe<br>Body<br>psi | API Historical |            |            | Lame' - Von Mises  |                      |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |    |       |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi | Capped<br>End<br>psi |  |                            |                                |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | Q125 HP          | 5,870                         | 2,540                     | 1,648  | -- | 2,384 | 11,040              | 11,040         | --         | 11,040     | 11,000             | 12,210               | 11,680                                     | 12.750                     | --                             |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | USS140           | 4,810                         | 2,634                     | 1,721  | -- | 2,516 | 11,130              | 11,130         | --         | 11,130     | 11,080             | 12,320               | 12,160                                     | 12.750                     | --                             |
| 11 3/4                          | 65.00        | 64.03        | 0.534              | 10.682            | 10.526              | 10.625                    | USS V150         | 4,840                         | 2,822                     | 1,843  | -- | 2,689 | 11,920              | 11,920         | --         | 11,920     | 11,880             | 13,200               | 13,030                                     | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | USS GT80S        | 4,880                         | 1,634                     | 1,107  | -- | 1,651 | 6,930               | 6,930          | --         | 6,930      | 6,900              | 7,640                | 7,400                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | L80              | 4,880                         | 1,634                     | 1,107  | -- | 1,651 | 6,930               | 6,930          | --         | 6,930      | 6,900              | 7,640                | 7,400                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | L80 HC           | 5,550                         | 1,634                     | 1,107  | -- | 1,651 | 6,930               | 6,930          | --         | 6,930      | 6,900              | 7,640                | 7,400                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | L80 HP           | 5,890                         | 1,736                     | 1,160  | -- | 1,696 | 7,580               | 7,540          | --         | 7,360      | 7,540              | 8,350                | 7,660                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | N80n             | 4,880                         | 1,634                     | 1,120  | -- | 1,700 | 6,930               | 6,930          | --         | 6,930      | 6,900              | 7,640                | 6,450                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | N80              | 4,880                         | 1,634                     | 1,120  | -- | 1,700 | 6,930               | 6,930          | --         | 6,930      | 6,900              | 7,640                | 7,790                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | N80 HC           | 5,830                         | 1,634                     | 1,120  | -- | 1,700 | 6,930               | 6,930          | --         | 6,930      | 6,900              | 7,640                | 7,790                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | N80 HP           | 6,250                         | 1,940                     | 1,293  | -- | 1,884 | 8,470               | 7,540          | --         | 7,360      | 8,430              | 9,330                | 8,530                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | C90              | 5,130                         | 1,838                     | 1,226  | -- | 1,790 | 7,800               | 7,800          | --         | 7,800      | 7,760              | 8,600                | 8,650                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | USS C90          | 5,130                         | 1,838                     | 1,226  | -- | 1,790 | 7,800               | 7,800          | --         | 7,800      | 7,760              | 8,600                | 8,650                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | C95              | 5,240                         | 1,940                     | 1,293  | -- | 1,885 | 8,230               | 8,230          | --         | 8,230      | 8,190              | 9,070                | 8,250                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | T95              | 5,240                         | 1,940                     | 1,293  | -- | 1,884 | 8,230               | 8,230          | --         | 8,230      | 8,190              | 9,070                | 9,100                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | USS C95          | 5,240                         | 1,940                     | 1,293  | -- | 1,884 | 8,230               | 8,230          | --         | 8,230      | 8,190              | 9,070                | 9,100                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | USS C100         | 5,330                         | 2,042                     | 1,333  | -- | 1,881 | 8,660               | 8,660          | --         | 8,660      | 8,620              | 9,550                | 8,690                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | C110             | 5,470                         | 2,246                     | --   | -- | --    | 9,530               | --             | --         | --         | 9,480              | 10,510               | 10,480                                     | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | P110 SR16        | 5,470                         | 2,246                     | 1,506  | -- | 2,215 | 9,530               | 9,530          | --         | 9,530      | 9,480              | 10,510               | 9,890                                      | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | P110             | 5,470                         | 2,246                     | 1,506  | -- | 2,215 | 9,530               | 9,530          | --         | 9,530      | 9,480              | 10,510               | 10,920                                     | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | P110 HC          | 6,630                         | 2,246                     | 1,506  | -- | 2,215 | 9,530               | 9,530          | --         | 9,530      | 9,480              | 10,510               | 10,920                                     | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | P110 HP          | 7,050                         | 2,553                     | 1,678  | -- | 2,400 | 11,140              | 10,400         | --         | 10,120     | 11,090             | 12,280               | 11,810                                     | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | Q125             | 5,760                         | 2,553                     | 1,692  | -- | 2,448 | 10,830              | 10,830         | --         | 10,830     | 10,780             | 11,940               | 11,880                                     | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | Q125 HC          | 6,820                         | 2,553                     | 1,692  | -- | 2,448 | 10,830              | 10,830         | --         | 10,830     | 10,780             | 11,940               | 11,880                                     | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | Q125 HP          | 7,250                         | 2,757                     | 1,812  | -- | 2,588 | 12,040              | 11,810         | --         | 11,500     | 11,980             | 13,260               | 12,780                                     | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | USS140           | 6,040                         | 2,859                     | 1,892  | -- | 2,730 | 12,130              | 12,130         | --         | 12,130     | 12,070             | 13,370               | 13,300                                     | 12.750                     | --                             |
| 11 3/4                          | 71.00        | 69.48        | 0.582              | 10.586            | 10.430              | --                        | USS V150         | 6,170                         | 3,063                     | 2,025  | -- | 2,919 | 13,000              | 13,000         | --         | 13,000     | 12,930             | 14,330               | 14,260                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | C90              | 7,270                         | 2,105                     | 1,431  | -- | 2,050 | 9,010               | 8,480          | --         | 8,280      | 8,950              | 9,860                | 10,060                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | USS C90          | 7,270                         | 2,105                     | 1,431  | -- | 2,050 | 9,010               | 8,480          | --         | 8,280      | 8,950              | 9,860                | 10,060                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | C95              | 7,510                         | 2,222                     | 1,509  | -- | 2,159 | 9,510               | 8,950          | --         | 8,740      | 9,450              | 10,410               | 9,590                                      | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | T95              | 7,510                         | 2,222                     | 1,509  | -- | 2,158 | 9,510               | 8,950          | --         | 8,740      | 9,450              | 10,410               | 10,590                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | USS C95          | 7,510                         | 2,222                     | 1,509  | -- | 2,158 | 9,510               | 8,950          | --         | 8,740      | 9,450              | 10,410               | 10,590                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | USS C100         | 7,730                         | 2,339                     | 1,555  | -- | 2,129 | 10,010              | 9,420          | --         | 9,200      | 9,950              | 10,950               | 10,110                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | C110             | 8,140                         | 2,573                     | --   | -- | --    | 11,010              | --             | --         | --         | 10,940             | 12,050               | 12,190                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | P110 SR16        | 8,140                         | 2,573                     | 1,756  | -- | 2,537 | 11,010              | 10,400         | --         | 10,120     | 10,940             | 12,050               | 11,490                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | P110             | 8,140                         | 2,573                     | 1,756  | -- | 2,537 | 11,010              | 10,400         | --         | 10,120     | 10,940             | 12,050               | 12,700                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | P110 HC          | 9,070                         | 2,573                     | 1,756  | -- | 2,537 | 11,010              | 10,400         | --         | 10,120     | 10,940             | 12,050               | 12,700                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | P110 HP          | 9,640                         | 2,923                     | 1,958  | -- | 2,661 | 12,870              | 10,400         | --         | 10,120     | 12,780             | 14,070               | 13,730                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | Q125             | 8,660                         | 2,923                     | 1,974  | -- | 2,804 | 12,510              | 11,810         | --         | 11,500     | 12,430             | 13,690               | 13,820                                     | 12.750                     | --                             |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |    |       | Internal Yield      |                |            |            |                    |                      | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|----|-------|---------------------|----------------|------------|------------|--------------------|----------------------|--|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |    |       | Pipe<br>Body<br>psi | API Historical |            |            | Lame' - Von Mises  |                      |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |    |       |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi | Capped<br>End<br>psi |  |                            |                                |
|                                 |              |              |                    |                   |                     |                           |                  |                               |                           |  |    |       |                     |                |            |            |                    |                      |  |                            |                                |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | Q125 HC          | 9,430                         | 2,923                     | 1,974  | -- | 2,804 | 12,510              | 11,810         | --         | 11,500     | 12,430             | 13,690               | 13,820                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | Q125 HP          | 10,020                        | 3,157                     | 2,114  | -- | 2,874 | 13,900              | 11,810         | --         | 11,500     | 13,800             | 15,200               | 14,860                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | USS140           | 9,050                         | 3,274                     | 2,207  | -- | 3,127 | 14,010              | 13,230         | --         | 12,880     | 13,920             | 15,330               | 15,470                                     | 12.750                     | --                             |
| 11 3/4                          | 80.50        | 79.58        | 0.672              | 10.406            | 10.250              | --                        | USS V150         | 9,240                         | 3,508                     | 2,362  | -- | 3,343 | 15,010              | 14,180         | --         | 13,800     | 14,920             | 16,430               | 16,580                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | C90              | 8,750                         | 2,286                     | 1,570  | -- | 2,129 | 9,830               | 8,480          | --         | 8,280      | 9,760              | 10,720               | 11,030                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | USS C90          | 8,750                         | 2,286                     | 1,570  | -- | 2,129 | 9,830               | 8,480          | --         | 8,280      | 9,760              | 10,720               | 11,030                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | C95              | 9,080                         | 2,413                     | 1,655  | -- | 2,238 | 10,380              | 8,950          | --         | 8,740      | 10,300             | 11,310               | 10,510                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | T95              | 9,080                         | 2,413                     | 1,655  | -- | 2,236 | 10,380              | 8,950          | --         | 8,740      | 10,300             | 11,310               | 11,610                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | USS C95          | 9,080                         | 2,413                     | 1,655  | -- | 2,236 | 10,380              | 8,950          | --         | 8,740      | 10,300             | 11,310               | 11,610                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | USS C100         | 9,390                         | 2,540                     | 1,706  | -- | 2,129 | 10,930              | 9,420          | --         | 9,200      | 10,850             | 11,910               | 11,080                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | C110             | 9,990                         | 2,794                     | --   | -- | --    | 12,020              | --             | --         | --         | 11,930             | 13,100               | 13,370                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | P110 SR16        | 9,990                         | 2,794                     | 1,927  | -- | 2,661 | 12,020              | 10,400         | --         | 10,120     | 11,930             | 13,100               | 12,600                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | P110             | 9,990                         | 2,794                     | 1,927  | -- | 2,661 | 12,020              | 10,400         | --         | 10,120     | 11,930             | 13,100               | 13,930                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | P110 HC          | 10,780                        | 2,794                     | 1,927  | -- | 2,661 | 12,020              | 10,400         | --         | 10,120     | 11,930             | 13,100               | 13,930                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | P110 HP          | 11,470                        | 3,175                     | 2,148  | -- | 2,661 | 14,060              | 10,400         | --         | 10,120     | 13,940             | 15,290               | 15,060                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | Q125             | 10,800                        | 3,175                     | 2,165  | -- | 2,874 | 13,660              | 11,810         | --         | 11,500     | 13,560             | 14,880               | 15,150                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | Q125 HC          | 11,290                        | 3,175                     | 2,165  | -- | 2,874 | 13,660              | 11,810         | --         | 11,500     | 13,560             | 14,880               | 15,150                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | Q125 HP          | 11,990                        | 3,429                     | 2,319  | -- | 2,874 | 15,180              | 11,810         | --         | 11,500     | 15,060             | 16,520               | 16,310                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | USS140           | 11,490                        | 3,556                     | 2,421  | -- | 3,194 | 15,300              | 13,230         | --         | 12,880     | 15,180             | 16,670               | 16,960                                     | 12.750                     | --                             |
| 11 3/4                          | 87.20        | 86.44        | 0.734              | 10.282            | 10.126              | --                        | USS V150         | 11,880                        | 3,810                     | 2,591  | -- | 3,407 | 16,390              | 14,180         | --         | 13,800     | 16,270             | 17,860               | 18,180                                     | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | K55              | 3,880                         | 1,136                     | 742  | -- | 1,279 | 4,710               | 4,710          | --         | 4,710      | 4,690              | 5,200                | 5,990                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | USS GT80S        | 4,750                         | 1,652                     | 977  | -- | 1,482 | 6,860               | 6,860          | --         | 6,860      | 6,830              | 7,570                | 7,320                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | L80              | 4,750                         | 1,652                     | 977  | -- | 1,482 | 6,860               | 6,860          | --         | 6,860      | 6,830              | 7,570                | 7,320                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | L80 HC           | 5,440                         | 1,652                     | 977  | -- | 1,482 | 6,860               | 6,860          | --         | 6,860      | 6,830              | 7,570                | 7,320                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | L80 HP           | 5,770                         | 1,755                     | 1,024  | -- | 1,523 | 7,500               | 7,500          | --         | 7,360      | 7,460              | 8,260                | 7,580                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | N80n             | 4,750                         | 1,652                     | 988  | -- | 1,526 | 6,860               | 6,860          | --         | 6,860      | 6,830              | 7,570                | 6,380                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | N80              | 4,750                         | 1,652                     | 988  | -- | 1,526 | 6,860               | 6,860          | --         | 6,860      | 6,830              | 7,570                | 7,710                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | N80 HC           | 5,710                         | 1,652                     | 988  | -- | 1,526 | 6,860               | 6,860          | --         | 6,860      | 6,830              | 7,570                | 7,710                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | N80 HP           | 6,110                         | 1,962                     | 1,141  | -- | 1,691 | 8,380               | 7,540          | --         | 7,360      | 8,340              | 9,240                | 8,440                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | C90              | 4,990                         | 1,858                     | 1,082  | -- | 1,607 | 7,720               | 7,720          | --         | 7,720      | 7,680              | 8,510                | 8,550                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | USS C90          | 4,990                         | 1,858                     | 1,082  | -- | 1,607 | 7,720               | 7,720          | --         | 7,720      | 7,680              | 8,510                | 8,550                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | C95              | 5,090                         | 1,962                     | 1,141  | -- | 1,692 | 8,140               | 8,140          | --         | 8,140      | 8,110              | 8,980                | 8,160                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | T95              | 5,090                         | 1,962                     | 1,141  | -- | 1,691 | 8,140               | 8,140          | --         | 8,140      | 8,110              | 8,980                | 9,000                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | USS C95          | 5,090                         | 1,962                     | 1,141  | -- | 1,691 | 8,140               | 8,140          | --         | 8,140      | 8,110              | 8,980                | 9,000                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | USS C100         | 5,170                         | 2,065                     | 1,176  | -- | 1,688 | 8,570               | 8,570          | --         | 8,570      | 8,530              | 9,460                | 8,600                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | C110             | 5,290                         | 2,271                     | --   | -- | --    | 9,430               | --             | --         | --         | 9,390              | 10,400               | 10,370                                     | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | P110 SR16        | 5,290                         | 2,271                     | 1,329  | -- | 1,988 | 9,430               | 9,430          | --         | 9,430      | 9,390              | 10,400               | 9,780                                      | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | P110             | 5,290                         | 2,271                     | 1,329  | -- | 1,988 | 9,430               | 9,430          | --         | 9,430      | 9,390              | 10,400               | 10,800                                     | 12.750                     | --                             |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | P110 HC          | 6,460                         | 2,271                     | 1,329  | -- | 1,988 | 9,430               | 9,430          | --         | 9,430      | 9,390              | 10,400               | 10,800                                     | 12.750                     | --                             |



| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |       |       | Internal Yield      |                |                    |                      |                   |            | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter |            |            |                 |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|-------|-------|---------------------|----------------|--------------------|----------------------|-------------------|------------|--|------------------|------------|------------|-----------------|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |       |       | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |            |  | End<br>psi       | End<br>psi | End<br>psi | Regular         |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC   | LTC   |                     | BTC            | Open<br>End<br>psi | Capped<br>End<br>psi | End<br>psi        | End<br>psi | End<br>psi                                 |                  |            |            | Coupling<br>in. |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | P110 HP          |                               | 6,880                     | 2,581  | 1,481 | --    | 2,154               | 11,030         | 10,400             | --                   | 10,120            | 10,970     | 12,150                                     | 11,680           | 12.750     | --         |                 |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | Q125             | 5,630                         | 2,581                     | 1,493  | --    | 2,198 | 10,720              | 10,720         | --                 | 10,720               | 10,670            | 11,820     | 11,750                                     | 12.750           | --         |            |                 |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | Q125 HC          | 6,650                         | 2,581                     | 1,493  | --    | 2,198 | 10,720              | 10,720         | --                 | 10,720               | 10,670            | 11,820     | 11,750                                     | 12.750           | --         |            |                 |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | Q125 HP          | 7,070                         | 2,787                     | 1,599  | --    | 2,323 | 11,910              | 11,810         | --                 | 11,500               | 11,850            | 13,130     | 12,640                                     | 12.750           | --         |            |                 |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | USS140           | 5,880                         | 2,891                     | 1,670  | --    | 2,451 | 12,000              | 12,000         | --                 | 12,000               | 11,950            | 13,240     | 13,150                                     | 12.750           | --         |            |                 |
| 11 7/8                          | 71.80        | 70.26        | 0.582              | 10.711            | 10.555              | --                        | USS V150         | 6,000                         | 3,097                     | 1,787  | --    | 2,620 | 12,860              | 12,860         | --                 | 12,860               | 12,800            | 14,180     | 14,100                                     | 12.750           | --         |            |                 |
| 13 3/8                          | 48.00        | 46.02        | 0.330              | 12.715            | 12.559              | --                        | H40              | 740                           | 541                       | 322  | --    | --    | 1,730               | 1,730          | --                 | --                   | 1,730             | 1,950      | 1,860                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 54.50        | 52.79        | 0.380              | 12.615            | 12.459              | --                        | J55              | 1,130                         | 853                       | 514  | --    | 909   | 2,740               | 2,740          | --                 | 2,740                | 2,730             | 3,070      | 2,710                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 54.50        | 52.79        | 0.380              | 12.615            | 12.459              | --                        | K55              | 1,130                         | 853                       | 547  | --    | 1,038 | 2,740               | 2,740          | --                 | 2,740                | 2,730             | 3,070      | 3,430                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 54.50        | 52.79        | 0.380              | 12.615            | 12.459              | --                        | USS HCK55        | 1,260                         | 853                       | 547  | --    | 1,038 | 2,740               | 2,740          | --                 | 2,740                | 2,730             | 3,070      | 3,430                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 61.00        | 59.50        | 0.430              | 12.515            | 12.359              | --                        | J55              | 1,540                         | 962                       | 595  | --    | 1,025 | 3,090               | 3,090          | --                 | 3,090                | 3,090             | 3,460      | 3,070                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 61.00        | 59.50        | 0.430              | 12.515            | 12.359              | --                        | K55              | 1,540                         | 962                       | 633  | --    | 1,169 | 3,090               | 3,090          | --                 | 3,090                | 3,090             | 3,460      | 3,880                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 61.00        | 59.50        | 0.430              | 12.515            | 12.359              | --                        | USS HCK55        | 1,830                         | 962                       | 633  | --    | 1,169 | 3,090               | 3,090          | --                 | 3,090                | 3,090             | 3,460      | 3,880                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | J55              | 1,950                         | 1,069                     | 675  | --    | 1,140 | 3,450               | 3,450          | --                 | 3,450                | 3,450             | 3,850      | 3,430                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | K55              | 1,950                         | 1,069                     | 718  | --    | 1,300 | 3,450               | 3,450          | --                 | 3,450                | 3,450             | 3,850      | 4,350                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | USS HCK55        | 2,550                         | 1,069                     | 718  | --    | 1,300 | 3,450               | 3,450          | --                 | 3,450                | 3,450             | 3,850      | 4,350                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | USS GT80S        | 2,260                         | 1,556                     | 952  | --    | 1,545 | 5,020               | 5,020          | --                 | 5,020                | 5,010             | 5,610      | 5,310                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | L80              | 2,260                         | 1,556                     | 952  | --    | 1,545 | 5,020               | 5,020          | --                 | 5,020                | 5,010             | 5,610      | 5,310                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | L80 HC           | 2,690                         | 1,556                     | 952  | --    | 1,545 | 5,020               | 5,020          | --                 | 5,020                | 5,010             | 5,610      | 5,310                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | L80 HP           | 2,850                         | 1,653                     | 999  | --    | 1,594 | 5,490               | 5,490          | --                 | 5,490                | 5,480             | 6,130      | 5,490                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | N80n             | 2,260                         | 1,556                     | 963  | --    | 1,585 | 5,020               | 5,020          | --                 | 5,020                | 5,010             | 5,610      | 4,640                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | N80              | 2,260                         | 1,556                     | 963  | --    | 1,585 | 5,020               | 5,020          | --                 | 5,020                | 5,010             | 5,610      | 5,590                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | N80 HC           | 2,750                         | 1,556                     | 963  | --    | 1,585 | 5,020               | 5,020          | --                 | 5,020                | 5,010             | 5,610      | 5,590                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | N80 HP           | 2,930                         | 1,847                     | 1,114  | --    | 1,772 | 6,140               | 6,140          | --                 | 6,140                | 6,120             | 6,850      | 6,120                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | C90              | 2,320                         | 1,750                     | 1,057  | --    | 1,683 | 5,650               | 5,650          | --                 | 5,650                | 5,640             | 6,310      | 6,200                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | USS C90          | 2,320                         | 1,750                     | 1,057  | --    | 1,683 | 5,650               | 5,650          | --                 | 5,650                | 5,640             | 6,310      | 6,200                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | C95              | 2,330                         | 1,847                     | 1,114  | --    | 1,772 | 5,970               | 5,970          | --                 | 5,970                | 5,950             | 6,660      | 5,910                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | T95              | 2,330                         | 1,847                     | 1,114  | --    | 1,772 | 5,970               | 5,970          | --                 | 5,970                | 5,950             | 6,660      | 6,520                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | USS C95          | 2,330                         | 1,847                     | 1,114  | --    | 1,772 | 5,970               | 5,970          | --                 | 5,970                | 5,950             | 6,660      | 6,520                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | USS C100         | 2,340                         | 1,945                     | 1,150  | --    | 1,781 | 6,280               | 6,280          | --                 | 6,280                | 6,260             | 7,010      | 6,230                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | C110             | 2,330                         | 2,139                     | --   | --    | --    | 6,910               | --             | --                 | --                   | 6,890             | 7,710      | 7,510                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | P110 SR16        | 2,330                         | 2,139                     | 1,297  | --    | 2,079 | 6,910               | 6,910          | --                 | 6,910                | 6,890             | 7,710      | 7,090                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | P110             | 2,330                         | 2,139                     | 1,297  | --    | 2,079 | 6,910               | 6,910          | --                 | 6,910                | 6,890             | 7,710      | 7,820                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | P110 HC          | 2,910                         | 2,139                     | 1,297  | --    | 2,079 | 6,910               | 6,910          | --                 | 6,910                | 6,890             | 7,710      | 7,820                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | P110 HP          | 3,100                         | 2,431                     | 1,448  | --    | 2,266 | 8,070               | 8,070          | --                 | 8,070                | 8,050             | 9,010      | 8,450                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | Q125             | 2,340                         | 2,431                     | 1,458  | --    | 2,306 | 7,850               | 7,850          | --                 | 7,850                | 7,830             | 8,760      | 8,510                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | Q125 HC          | 2,950                         | 2,431                     | 1,458  | --    | 2,306 | 7,850               | 7,850          | --                 | 7,850                | 7,830             | 8,760      | 8,510                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | Q125 HP          | 3,140                         | 2,625                     | 1,563  | --    | 2,444 | 8,720               | 8,720          | --                 | 8,720                | 8,700             | 9,730      | 9,150                                      | 14.375           | --         |            |                 |
| 13 3/8                          | 68.00        | 66.17        | 0.480              | 12.415            | 12.259              | --                        | USS140           | 2,340                         | 2,722                     | 1,631  | --    | 2,573 | 8,790               | 8,790          | --                 | 8,790                | 8,770             | 9,810      | 9,530                                      | 14.375           | --         |            |                 |

| Dimensional & Grade Designators |        |       |       |        |        |           |                  | Collapse<br>Resistance<br>psi | TENSION                   |                      |     |                  | Internal Yield      |                |     |        |                   |        | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |
|---------------------------------|--------|-------|-------|--------|--------|-----------|------------------|-------------------------------|---------------------------|----------------------|-----|------------------|---------------------|----------------|-----|--------|-------------------|--------|--|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight |       | NOM   | NOM    | API    | Alternate | Product<br>Grade |                               | Joint Strength, 1,000 lbs |                      |     |                  | Pipe<br>Body<br>psi | API Historical |     |        | Lame' - Von Mises |        |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C    | P E   | Wall  | ID     | Drift  | Drift     |                  |                               | Yield                     | Threaded and Coupled |     |                  |                     | STC            | LTC | BTC    | Open              | Capped |  |                            |                                |
|                                 | lb/ft  | lb/ft | in.   | in.    | in.    | in.       |                  |                               | Pipe Body                 | STC                  | LTC | BTC <sup>a</sup> | psi                 |                |     |        | psi               | psi    | End<br>psi                                 |                            |                                |
| 13 3/8                          | 68.00  | 66.17 | 0.480 | 12.415 | 12.259 | --        | USS V150         | 2,340                         | 2,917                     | 1,746                | --  | 2,752            | 9,420               | 9,420          | --  | 9,420  | 9,400             | 10,510 | 10,220                                     | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | USS GT80S        | 2,670                         | 1,661                     | 1,029                | --  | 1,650            | 5,380               | 5,380          | --  | 5,380  | 5,370             | 5,990  | 5,700                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | L80              | 2,670                         | 1,661                     | 1,029                | --  | 1,650            | 5,380               | 5,380          | --  | 5,380  | 5,370             | 5,990  | 5,700                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | L80 HC           | 3,180                         | 1,661                     | 1,029                | --  | 1,650            | 5,380               | 5,380          | --  | 5,380  | 5,370             | 5,990  | 5,700                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | L80 HP           | 3,380                         | 1,765                     | 1,079                | --  | 1,702            | 5,880               | 5,880          | --  | 5,880  | 5,860             | 6,540  | 5,890                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | N80n             | 2,670                         | 1,661                     | 1,040                | --  | 1,693            | 5,380               | 5,380          | --  | 5,380  | 5,370             | 5,990  | 4,980                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | N80              | 2,670                         | 1,661                     | 1,040                | --  | 1,693            | 5,380               | 5,380          | --  | 5,380  | 5,370             | 5,990  | 6,000                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | N80 HC           | 3,270                         | 1,661                     | 1,040                | --  | 1,693            | 5,380               | 5,380          | --  | 5,380  | 5,370             | 5,990  | 6,000                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | N80 HP           | 3,490                         | 1,973                     | 1,204                | --  | 1,893            | 6,570               | 6,570          | --  | 6,530  | 6,550             | 7,310  | 6,560                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | C90              | 2,780                         | 1,869                     | 1,142                | --  | 1,798            | 6,060               | 6,060          | --  | 6,060  | 6,040             | 6,740  | 6,650                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | USS C90          | 2,780                         | 1,869                     | 1,142                | --  | 1,798            | 6,060               | 6,060          | --  | 6,060  | 6,040             | 6,740  | 6,650                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | C95              | 2,820                         | 1,973                     | 1,204                | --  | 1,893            | 6,390               | 6,390          | --  | 6,390  | 6,370             | 7,110  | 6,350                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | T95              | 2,820                         | 1,973                     | 1,204                | --  | 1,893            | 6,390               | 6,390          | --  | 6,390  | 6,370             | 7,110  | 7,000                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | USS C95          | 2,820                         | 1,973                     | 1,204                | --  | 1,893            | 6,390               | 6,390          | --  | 6,390  | 6,370             | 7,110  | 7,000                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | USS C100         | 2,850                         | 2,077                     | 1,243                | --  | 1,902            | 6,730               | 6,730          | --  | 6,730  | 6,710             | 7,490  | 6,690                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | C110             | 2,880                         | 2,284                     | --                   | --  | --               | 7,400               | --             | --  | --     | 7,380             | 8,240  | 8,060                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | P110 SR16        | 2,880                         | 2,284                     | 1,401                | --  | 2,221            | 7,400               | 7,400          | --  | 7,400  | 7,380             | 8,240  | 7,610                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | P110             | 2,880                         | 2,284                     | 1,401                | --  | 2,221            | 7,400               | 7,400          | --  | 7,400  | 7,380             | 8,240  | 8,400                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | P110 HC          | 3,510                         | 2,284                     | 1,401                | --  | 2,221            | 7,400               | 7,400          | --  | 7,400  | 7,380             | 8,240  | 8,400                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | P110 HP          | 3,730                         | 2,596                     | 1,564                | --  | 2,420            | 8,650               | 8,650          | --  | 8,650  | 8,620             | 9,620  | 9,070                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | Q125             | 2,880                         | 2,596                     | 1,576                | --  | 2,463            | 8,410               | 8,410          | --  | 8,410  | 8,390             | 9,360  | 9,140                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | Q125 HC          | 3,560                         | 2,596                     | 1,576                | --  | 2,463            | 8,410               | 8,410          | --  | 8,410  | 8,390             | 9,360  | 9,140                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | Q125 HP          | 3,780                         | 2,804                     | 1,688                | --  | 2,611            | 9,340               | 9,340          | --  | 9,340  | 9,310             | 10,390 | 9,820                                      | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | USS140           | 2,880                         | 2,908                     | 1,762                | --  | 2,749            | 9,420               | 9,420          | --  | 9,420  | 9,390             | 10,480 | 10,230                                     | 14.375                     | --                             |
| 13 3/8                          | 72.00  | 70.67 | 0.514 | 12.347 | 12.191 | 12.250    | USS V150         | 2,880                         | 3,115                     | 1,886                | --  | 2,939            | 10,090              | 10,090         | --  | 10,090 | 10,060            | 11,230 | 10,970                                     | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | L80              | 4,190                         | 2,003                     | 1,276                | --  | 1,989            | 6,540               | 6,540          | --  | 6,530  | 6,520             | 7,230  | 6,970                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | L80 HC           | 4,940                         | 2,003                     | 1,276                | --  | 1,989            | 6,540               | 6,540          | --  | 6,530  | 6,520             | 7,230  | 6,970                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | L80 HP           | 5,240                         | 2,128                     | 1,338                | --  | 2,052            | 7,150               | 6,680          | --  | 6,530  | 7,120             | 7,900  | 7,210                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | N80              | 4,190                         | 2,003                     | 1,290                | --  | 2,041            | 6,540               | 6,540          | --  | 6,530  | 6,520             | 7,230  | 7,340                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | N80 HC           | 5,160                         | 2,003                     | 1,290                | --  | 2,041            | 6,540               | 6,540          | --  | 6,530  | 6,520             | 7,230  | 7,340                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | N80 HP           | 5,520                         | 2,378                     | 1,492                | --  | 2,281            | 7,990               | 6,680          | --  | 6,530  | 7,950             | 8,830  | 8,030                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | C90              | 4,350                         | 2,253                     | 1,415                | --  | 2,167            | 7,360               | 7,360          | --  | 7,340  | 7,330             | 8,130  | 8,140                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | USS C90          | 4,350                         | 2,253                     | 1,415                | --  | 2,167            | 7,360               | 7,360          | --  | 7,340  | 7,330             | 8,130  | 8,140                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | C95              | 4,420                         | 2,378                     | 1,492                | --  | 2,281            | 7,770               | 7,770          | --  | 7,750  | 7,740             | 8,580  | 7,770                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | T95              | 4,420                         | 2,378                     | 1,492                | --  | 2,281            | 7,770               | 7,770          | --  | 7,750  | 7,740             | 8,580  | 8,570                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | USS C95          | 4,420                         | 2,378                     | 1,492                | --  | 2,281            | 7,770               | 7,770          | --  | 7,750  | 7,740             | 8,580  | 8,570                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | USS C100         | 4,550                         | 2,504                     | 1,541                | --  | 2,293            | 8,180               | 8,180          | --  | 8,160  | 8,140             | 9,040  | 8,190                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | C110             | 4,770                         | 2,754                     | --                   | --  | --               | 9,000               | --             | --  | --     | 8,960             | 9,940  | 9,870                                      | 14.375                     | --                             |
| 13 3/8                          | 86.00  | 85.19 | 0.625 | 12.125 | 11.969 | --        | P110 SR16        | 4,770                         | 2,754                     | 1,737                | --  | 2,677            | 9,000               | 9,000          | --  | 8,980  | 8,960             | 9,940  | 9,310                                      | 14.375                     | --                             |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |            |            | Internal Yield      |                |                    |                      |                   | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |    |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|------------|------------|---------------------|----------------|--------------------|----------------------|-------------------|--|----------------------------|--------------------------------|----|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |            |            | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |  | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |    |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC<br>psi | LTC<br>psi |                     | BTC<br>psi     | Open<br>End<br>psi | Capped<br>End<br>psi |                   |  |                            |                                |    |
| 13 3/8                          | 86.00        | 85.19        | 0.625              | 12.125            | 11.969              | --                        | P110             | 4,770                         | 2,754                     | 1,737  | --         | 2,677      | 9,000               | 9,000          | --                 | 8,980                | 8,960             | 9,940                                      | 10,280                     | 14.375                         | -- |
| 13 3/8                          | 86.00        | 85.19        | 0.625              | 12.125            | 11.969              | --                        | P110 HC          | 5,770                         | 2,754                     | 1,737  | --         | 2,677      | 9,000               | 9,000          | --                 | 8,980                | 8,960             | 9,940                                      | 10,280                     | 14.375                         | -- |
| 13 3/8                          | 86.00        | 85.19        | 0.625              | 12.125            | 11.969              | --                        | P110 HP          | 6,140                         | 3,129                     | 1,939  | --         | 2,918      | 10,510              | 9,220          | --                 | 8,980                | 10,470            | 11,610                                     | 11,110                     | 14.375                         | -- |
| 13 3/8                          | 86.00        | 85.19        | 0.625              | 12.125            | 11.969              | --                        | Q125             | 5,030                         | 3,129                     | 1,953  | --         | 2,969      | 10,220              | 10,220         | --                 | 10,200               | 10,180            | 11,290                                     | 11,190                     | 14.375                         | -- |
| 13 3/8                          | 86.00        | 85.19        | 0.625              | 12.125            | 11.969              | --                        | Q125 HC          | 5,920                         | 3,129                     | 1,953  | --         | 2,969      | 10,220              | 10,220         | --                 | 10,200               | 10,180            | 11,290                                     | 11,190                     | 14.375                         | -- |
| 13 3/8                          | 86.00        | 85.19        | 0.625              | 12.125            | 11.969              | --                        | Q125 HP          | 6,290                         | 3,380                     | 2,093  | --         | 3,147      | 11,360              | 10,480         | --                 | 10,200               | 11,300            | 12,540                                     | 12,030                     | 14.375                         | -- |
| 13 3/8                          | 86.00        | 85.19        | 0.625              | 12.125            | 11.969              | --                        | USS140           | 5,190                         | 3,505                     | 2,184  | --         | 3,313      | 11,450              | 11,450         | --                 | 11,420               | 11,400            | 12,650                                     | 12,530                     | 14.375                         | -- |
| 13 3/8                          | 86.00        | 85.19        | 0.625              | 12.125            | 11.969              | --                        | USS V150         | 5,250                         | 3,755                     | 2,338  | --         | 3,543      | 12,270              | 12,270         | --                 | 12,240               | 12,220            | 13,550                                     | 13,430                     | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | L80              | 5,050                         | 2,145                     | 1,379  | --         | 2,131      | 7,030               | 6,680          | --                 | 6,530                | 7,000             | 7,750                                      | 7,520                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | L80 HC           | 5,710                         | 2,145                     | 1,379  | --         | 2,131      | 7,030               | 6,680          | --                 | 6,530                | 7,000             | 7,750                                      | 7,520                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | L80 HP           | 6,050                         | 2,280                     | 1,447  | --         | 2,198      | 7,690               | 6,680          | --                 | 6,530                | 7,650             | 8,460                                      | 7,780                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | N80              | 5,050                         | 2,145                     | 1,394  | --         | 2,186      | 7,030               | 6,680          | --                 | 6,530                | 7,000             | 7,750                                      | 7,910                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | N80 HC           | 6,000                         | 2,145                     | 1,394  | --         | 2,186      | 7,030               | 6,680          | --                 | 6,530                | 7,000             | 7,750                                      | 7,910                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | N80 HP           | 6,430                         | 2,548                     | 1,613  | --         | 2,414      | 8,590               | 6,680          | --                 | 6,530                | 8,550             | 9,460                                      | 8,660                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | C90              | 5,330                         | 2,414                     | 1,530  | --         | 2,321      | 7,910               | 7,520          | --                 | 7,340                | 7,870             | 8,720                                      | 8,780                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | USS C90          | 5,330                         | 2,414                     | 1,530  | --         | 2,321      | 7,910               | 7,520          | --                 | 7,340                | 7,870             | 8,720                                      | 8,780                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | C95              | 5,450                         | 2,548                     | 1,613  | --         | 2,444      | 8,350               | 7,940          | --                 | 7,750                | 8,310             | 9,200                                      | 8,370                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | T95              | 5,450                         | 2,548                     | 1,613  | --         | 2,444      | 8,350               | 7,940          | --                 | 7,750                | 8,310             | 9,200                                      | 9,240                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | USS C95          | 5,450                         | 2,548                     | 1,613  | --         | 2,444      | 8,350               | 7,940          | --                 | 7,750                | 8,310             | 9,200                                      | 9,240                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | USS C100         | 5,560                         | 2,682                     | 1,665  | --         | 2,414      | 8,790               | 8,350          | --                 | 8,160                | 8,750             | 9,680                                      | 8,830                      | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | C110             | 5,720                         | 2,950                     | --   | --         | --         | 9,670               | --             | --                 | --                   | 9,620             | 10,650                                     | 10,640                     | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | P110 SR16        | 5,720                         | 2,950                     | 1,877  | --         | 2,868      | 9,670               | 9,220          | --                 | 8,980                | 9,620             | 10,650                                     | 10,040                     | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | P110             | 5,720                         | 2,950                     | 1,877  | --         | 2,868      | 9,670               | 9,220          | --                 | 8,980                | 9,620             | 10,650                                     | 11,090                     | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | P110 HC          | 6,850                         | 2,950                     | 1,877  | --         | 2,868      | 9,670               | 9,220          | --                 | 8,980                | 9,620             | 10,650                                     | 11,090                     | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | P110 HP          | 7,280                         | 3,352                     | 2,096  | --         | 3,017      | 11,300              | 9,220          | --                 | 8,980                | 11,250            | 12,440                                     | 11,990                     | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | Q125             | 5,950                         | 3,352                     | 2,111  | --         | 3,181      | 10,990              | 10,480         | --                 | 10,200               | 10,940            | 12,100                                     | 12,060                     | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | Q125 HC          | 7,050                         | 3,352                     | 2,111  | --         | 3,181      | 10,990              | 10,480         | --                 | 10,200               | 10,940            | 12,100                                     | 12,060                     | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | Q125 HP          | 7,500                         | 3,620                     | 2,262  | --         | 3,258      | 12,210              | 10,480         | --                 | 10,200               | 12,150            | 13,440                                     | 12,970                     | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | USS140           | 6,250                         | 3,755                     | 2,361  | --         | 3,549      | 12,310              | 11,740         | --                 | 11,420               | 12,250            | 13,560                                     | 13,510                     | 14.375                         | -- |
| 13 3/8                          | 92.50        | 91.25        | 0.672              | 12.031            | 11.875              | --                        | USS V150         | 6,400                         | 4,023                     | 2,527  | --         | 3,795      | 13,190              | 12,570         | --                 | 12,240               | 13,120            | 14,530                                     | 14,480                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | L80              | 6,190                         | 2,332                     | 1,514  | --         | 2,293      | 7,680               | 6,680          | --                 | 6,530                | 7,640             | 8,430                                      | 8,240                      | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | L80 HC           | 6,720                         | 2,332                     | 1,514  | --         | 2,293      | 7,680               | 6,680          | --                 | 6,530                | 7,640             | 8,430                                      | 8,240                      | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | L80 HP           | 7,120                         | 2,478                     | 1,588  | --         | 2,293      | 8,400               | 6,680          | --                 | 6,530                | 8,340             | 9,200                                      | 8,530                      | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | N80              | 6,190                         | 2,332                     | 1,531  | --         | 2,376      | 7,680               | 6,680          | --                 | 6,530                | 7,640             | 8,430                                      | 8,670                      | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | N80 HC           | 7,120                         | 2,332                     | 1,531  | --         | 2,376      | 7,680               | 6,680          | --                 | 6,530                | 7,640             | 8,430                                      | 8,670                      | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | N80 HP           | 7,640                         | 2,769                     | 1,771  | --         | 2,414      | 9,380               | 6,680          | --                 | 6,530                | 9,330             | 10,290                                     | 9,500                      | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | C90              | 6,630                         | 2,623                     | 1,679  | --         | 2,414      | 8,640               | 7,520          | --                 | 7,340                | 8,590             | 9,480                                      | 9,630                      | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | USS C90          | 6,630                         | 2,623                     | 1,679  | --         | 2,414      | 8,640               | 7,520          | --                 | 7,340                | 8,590             | 9,480                                      | 9,630                      | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | C95              | 6,830                         | 2,769                     | 1,771  | --         | 2,534      | 9,120               | 7,940          | --                 | 7,750                | 9,070             | 10,010                                     | 9,170                      | 14.375                         | -- |

| Dimensional & Grade Designators |              |              |                    |                   |                     |                           |                  | Collapse<br>Resistance<br>psi | TENSION                   |  |                     |                    | Internal Yield |        |                    |                      |        |                            | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter               |    |
|---------------------------------|--------------|--------------|--------------------|-------------------|---------------------|---------------------------|------------------|-------------------------------|---------------------------|--|---------------------|--------------------|----------------|--------|--------------------|----------------------|--------|----------------------------|--|--------------------------------|----|
| O D<br>Size<br>in.              | Weight       |              | NOM<br>Wall<br>in. | NOM<br>I D<br>in. | API<br>Drift<br>in. | Alternate<br>Drift<br>in. | Product<br>Grade |                               | Joint Strength, 1,000 lbs |  |                     |                    | API Historical |        |                    | Lame' - Von Mises    |        | Regular<br>Coupling<br>in. |  | Special Clr<br>Coupling<br>in. |    |
|                                 | T&C<br>lb/ft | P E<br>lb/ft |                    |                   |                     |                           |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | Pipe<br>Body<br>psi | Threaded & Coupled |                |        | Open<br>End<br>psi | Capped<br>End<br>psi |        |                            |  |                                |    |
|                                 |              |              | STC<br>psi         | LTC<br>psi        | BTC<br>psi          |                           |                  |                               |                           |  |                     |                    |                |        |                    |                      |        |                            |  |                                |    |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | T95              | 6,830                         | 2,769                     | 1,771  | --                  | 2,534              | 9,120          | 7,940  | --                 | 7,750                | 9,070  | 10,010                     | 10,130                                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | USS C95          | 6,830                         | 2,769                     | 1,771  | --                  | 2,534              | 9,120          | 7,940  | --                 | 7,750                | 9,070  | 10,010                     | 10,130                                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | USS C100         | 7,010                         | 2,915                     | 1,828  | --                  | 2,414              | 9,600          | 8,350  | --                 | 8,160                | 9,540  | 10,530                     | 9,670                                      | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | C110             | 7,340                         | 3,206                     | --   | --                  | --                 | 10,560         | --     | --                 | --                   | 10,500 | 11,590                     | 11,670                                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | P110 SR16        | 7,340                         | 3,206                     | 2,061  | --                  | 3,017              | 10,560         | 9,220  | --                 | 8,980                | 10,500 | 11,590                     | 11,000                                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | P110             | 7,340                         | 3,206                     | 2,061  | --                  | 3,017              | 10,560         | 9,220  | --                 | 8,980                | 10,500 | 11,590                     | 12,150                                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | P110 HC          | 8,320                         | 3,206                     | 2,061  | --                  | 3,017              | 10,560         | 9,220  | --                 | 8,980                | 10,500 | 11,590                     | 12,150                                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | P110 HP          | 8,850                         | 3,644                     | 2,301  | --                  | 3,017              | 12,350         | 9,220  | --                 | 8,980                | 12,270 | 13,530                     | 13,150                                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | Q125             | 7,730                         | 3,644                     | 2,318  | --                  | 3,258              | 12,000         | 10,480 | --                 | 10,200               | 11,930 | 13,170                     | 13,220                                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | Q125 HC          | 8,630                         | 3,644                     | 2,318  | --                  | 3,258              | 12,000         | 10,480 | --                 | 10,200               | 11,930 | 13,170                     | 13,220                                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | Q125 HP          | 9,170                         | 3,935                     | 2,483  | --                  | 3,258              | 13,340         | 10,480 | --                 | 10,200               | 13,250 | 14,620                     | 14,230                                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | USS140           | 7,990                         | 4,081                     | 2,592  | --                  | 3,620              | 13,440         | 11,740 | --                 | 11,420               | 13,360 | 14,750                     | 14,800                                     | 14.375                         | -- |
| 13 3/8                          | 100.30       | 99.19        | 0.734              | 11.907            | 11.751              | --                        | USS V150         | 8,090                         | 4,372                     | 2,775  | --                  | 3,862              | 14,400         | 12,570 | --                 | 12,240               | 14,320 | 15,800                     | 15,870                                     | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | K55              | 2,890                         | 1,295                     | 782  | --                  | 1,398              | 4,140          | 4,140  | --                 | 4,140                | 4,120  | 4,580                      | 5,240                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | USS GT80S        | 3,390                         | 1,883                     | 1,037  | --                  | 1,661              | 6,020          | 6,020  | --                 | 6,020                | 6,000  | 6,670                      | 6,400                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | L80              | 3,390                         | 1,883                     | 1,037  | --                  | 1,661              | 6,020          | 6,020  | --                 | 6,020                | 6,000  | 6,670                      | 6,400                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | L80 HC           | 4,120                         | 1,883                     | 1,037  | --                  | 1,661              | 6,020          | 6,020  | --                 | 6,020                | 6,000  | 6,670                      | 6,400                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | L80 HP           | 4,380                         | 2,001                     | 1,088  | --                  | 1,713              | 6,570          | 6,570  | --                 | 6,530                | 6,550  | 7,290                      | 6,610                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | N80n             | 3,390                         | 1,883                     | 1,048  | --                  | 1,704              | 6,020          | 6,020  | --                 | 6,020                | 6,000  | 6,670                      | 5,580                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | N80              | 3,390                         | 1,883                     | 1,048  | --                  | 1,704              | 6,020          | 6,020  | --                 | 6,020                | 6,000  | 6,670                      | 6,740                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | N80 HC           | 4,280                         | 1,883                     | 1,048  | --                  | 1,704              | 6,020          | 6,020  | --                 | 6,020                | 6,000  | 6,670                      | 6,740                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | N80 HP           | 4,570                         | 2,236                     | 1,213  | --                  | 1,905              | 7,350          | 6,680  | --                 | 6,530                | 7,320  | 8,140                      | 7,360                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | C90              | 3,600                         | 2,119                     | 1,150  | --                  | 1,809              | 6,770          | 6,770  | --                 | 6,770                | 6,750  | 7,500                      | 7,470                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | USS C90          | 3,600                         | 2,119                     | 1,150  | --                  | 1,809              | 6,770          | 6,770  | --                 | 6,770                | 6,750  | 7,500                      | 7,470                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | C95              | 3,690                         | 2,236                     | 1,213  | --                  | 1,905              | 7,150          | 7,150  | --                 | 7,150                | 7,120  | 7,920                      | 7,130                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | T95              | 3,690                         | 2,236                     | 1,213  | --                  | 1,905              | 7,150          | 7,150  | --                 | 7,150                | 7,120  | 7,920                      | 7,860                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | USS C95          | 3,690                         | 2,236                     | 1,213  | --                  | 1,905              | 7,150          | 7,150  | --                 | 7,150                | 7,120  | 7,920                      | 7,860                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | USS C100         | 3,780                         | 2,354                     | 1,252  | --                  | 1,914              | 7,530          | 7,530  | --                 | 7,530                | 7,500  | 8,340                      | 7,510                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | C110             | 3,910                         | 2,590                     | --   | --                  | --                 | 8,280          | --     | --                 | --                   | 8,250  | 9,170                      | 9,050                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | P110 SR16        | 3,910                         | 2,590                     | 1,411  | --                  | 2,235              | 8,280          | 8,280  | --                 | 8,280                | 8,250  | 9,170                      | 8,550                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | P110             | 3,910                         | 2,590                     | 1,411  | --                  | 2,235              | 8,280          | 8,280  | --                 | 8,280                | 8,250  | 9,170                      | 9,430                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | P110 HC          | 4,690                         | 2,590                     | 1,411  | --                  | 2,235              | 8,280          | 8,280  | --                 | 8,280                | 8,250  | 9,170                      | 9,430                                      | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | P110 HP          | 4,990                         | 2,943                     | 1,576  | --                  | 2,436              | 9,670          | 9,220  | --                 | 8,980                | 9,630  | 10,710                     | 10,180                                     | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | Q125             | 4,030                         | 2,943                     | 1,588  | --                  | 2,479              | 9,410          | 9,410  | --                 | 9,410                | 9,370  | 10,420                     | 10,260                                     | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | Q125 HC          | 4,780                         | 2,943                     | 1,588  | --                  | 2,479              | 9,410          | 9,410  | --                 | 9,410                | 9,370  | 10,420                     | 10,260                                     | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | Q125 HP          | 5,080                         | 3,178                     | 1,701  | --                  | 2,628              | 10,440         | 10,440 | --                 | 10,200               | 10,400 | 11,570                     | 11,020                                     | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | USS140           | 4,060                         | 3,296                     | 1,775  | --                  | 2,766              | 10,540         | 10,540 | --                 | 10,540               | 10,500 | 11,670                     | 11,490                                     | 14.375                         | -- |
| 13 1/2                          | 81.40        | 80.11        | 0.580              | 12.340            | 12.184              | 12.250                    | USS V150         | 4,060                         | 3,531                     | 1,900  | --                  | 2,958              | 11,290         | 11,290 | --                 | 11,290               | 11,250 | 12,500                     | 12,320                                     | 14.375                         | -- |
| 13 5/8                          | 88.20        | 86.86        | 0.625              | 12.375            | 12.219              | 12.250                    | K55              | 3,360                         | 1,404                     | 752  | --                  | 1,353              | 4,420          | 4,420  | --                 | 4,420                | 4,400  | 4,880                      | 5,600                                      | 14.375                         | -- |

| Dimensional & Grade Designators |        |        |       |        |        |           |                  | Collapse<br>Resistance<br>psi | TENSION                   |                      |     |                  | Internal Yield |                    |     |                   |        |                            | Ductile<br>Rupture<br>Capped<br>End<br>psi | Outside Diameter               |     |
|---------------------------------|--------|--------|-------|--------|--------|-----------|------------------|-------------------------------|---------------------------|----------------------|-----|------------------|----------------|--------------------|-----|-------------------|--------|----------------------------|--|--------------------------------|-----|
| O D<br>Size<br>in.              | Weight |        | NOM   | NOM    | API    | Alternate | Product<br>Grade |                               | Joint Strength, 1,000 lbs |                      |     |                  | API Historical |                    |     | Lame' - Von Mises |        | Regular<br>Coupling<br>in. |  | Special Clr<br>Coupling<br>in. |     |
|                                 | T&C    | P E    | Wall  | ID     | Drift  | Drift     |                  |                               | Yield                     | Threaded and Coupled |     |                  | Pipe           | Threaded & Coupled |     | Open              | Capped |                            |  |                                |     |
|                                 | lb/ft  | lb/ft  | in.   | in.    | in.    | in.       |                  |                               | Pipe Body                 | STC                  | LTC | BTC <sup>a</sup> | Body           | STC                | LTC | BTC               | End    |                            | End  |                                | psi |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | USS GT80S        | 3,980                         | 2,042                     | 997                  | --  | 1,607            | 6,420          | 6,420              | --  | 6,420             | 6,400  | 7,100                      | 6,840                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | L80              | 3,980                         | 2,042                     | 997                  | --  | 1,607            | 6,420          | 6,420              | --  | 6,420             | 6,400  | 7,100                      | 6,840                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | L80 HC           | 4,750                         | 2,042                     | 997                  | --  | 1,607            | 6,420          | 6,420              | --  | 6,420             | 6,400  | 7,100                      | 6,840                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | L80 HP           | 5,040                         | 2,170                     | 1,046                | --  | 1,658            | 7,020          | 6,680              | --  | 6,530             | 6,990  | 7,760                      | 7,080                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | N80n             | 3,980                         | 2,042                     | 1,009                | --  | 1,649            | 6,420          | 6,420              | --  | 6,420             | 6,400  | 7,100                      | 5,970                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | N80              | 3,980                         | 2,042                     | 1,009                | --  | 1,649            | 6,420          | 6,420              | --  | 6,420             | 6,400  | 7,100                      | 7,200                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | N80 HC           | 4,960                         | 2,042                     | 1,009                | --  | 1,649            | 6,420          | 6,420              | --  | 6,420             | 6,400  | 7,100                      | 7,200                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | N80 HP           | 5,300                         | 2,425                     | 1,167                | --  | 1,843            | 7,840          | 6,680              | --  | 6,530             | 7,810  | 8,670                      | 7,880                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | C90              | 4,130                         | 2,297                     | 1,107                | --  | 1,750            | 7,230          | 7,230              | --  | 7,230             | 7,200  | 7,990                      | 7,990                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | USS C90          | 4,130                         | 2,297                     | 1,107                | --  | 1,750            | 7,230          | 7,230              | --  | 7,230             | 7,200  | 7,990                      | 7,990                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | C95              | 4,260                         | 2,425                     | 1,167                | --  | 1,843            | 7,630          | 7,630              | --  | 7,630             | 7,600  | 8,430                      | 7,620                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | T95              | 4,260                         | 2,425                     | 1,167                | --  | 1,843            | 7,630          | 7,630              | --  | 7,630             | 7,600  | 8,430                      | 8,410                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | USS C95          | 4,260                         | 2,425                     | 1,167                | --  | 1,843            | 7,630          | 7,630              | --  | 7,630             | 7,600  | 8,430                      | 8,410                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | USS C100         | 4,370                         | 2,553                     | 1,205                | --  | 1,852            | 8,030          | 8,030              | --  | 8,030             | 8,000  | 8,880                      | 8,030                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | C110             | 4,570                         | 2,808                     | --                   | --  | --               | 8,830          | --                 | --  | --                | 8,800  | 9,760                      | 9,680                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | P110 SR16        | 4,570                         | 2,808                     | 1,358                | --  | 2,163            | 8,830          | 8,830              | --  | 8,830             | 8,800  | 9,760                      | 9,140                                      | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | P110             | 4,570                         | 2,808                     | 1,358                | --  | 2,163            | 8,830          | 8,830              | --  | 8,830             | 8,800  | 9,760                      | 10,090                                     | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | P110 HC          | 5,520                         | 2,808                     | 1,358                | --  | 2,163            | 8,830          | 8,830              | --  | 8,830             | 8,800  | 9,760                      | 10,090                                     | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | P110 HP          | 5,870                         | 3,191                     | 1,516                | --  | 2,357            | 10,320         | 9,220              | --  | 8,980             | 10,280 | 11,410                     | 10,900                                     | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | Q125             | 4,800                         | 3,191                     | 1,527                | --  | 2,399            | 10,040         | 10,040             | --  | 10,040            | 10,000 | 11,100                     | 10,980                                     | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | Q125 HC          | 5,650                         | 3,191                     | 1,527                | --  | 2,399            | 10,040         | 10,040             | --  | 10,040            | 10,000 | 11,100                     | 10,980                                     | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | Q125 HP          | 6,010                         | 3,446                     | 1,637                | --  | 2,542            | 11,150         | 10,480             | --  | 10,200            | 11,100 | 12,320                     | 11,800                                     | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | USS140           | 4,940                         | 3,574                     | 1,708                | --  | 2,677            | 11,240         | 11,240             | --  | 11,240            | 11,200 | 12,430                     | 12,290                                     | 14.375                         | --  |
| 13 5/8                          | 88.20  | 86.86  | 0.625 | 12.375 | 12.219 | 12.250    | USS V150         | 4,970                         | 3,829                     | 1,828                | --  | 2,862            | 12,040         | 12,040             | --  | 12,040            | 11,990 | 13,310                     | 13,170                                     | 14.375                         | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | L80              | 6,740                         | 2,654                     | --                   | --  | --               | 8,000          | --                 | --  | --                | 7,950  | 8,760                      | 8,600                                      | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | L80 HC           | 7,210                         | 2,654                     | --                   | --  | --               | 8,000          | --                 | --  | --                | 7,950  | 8,760                      | 8,600                                      | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | L80 HP           | 7,640                         | 2,820                     | --                   | --  | --               | 8,740          | --                 | --  | --                | 8,680  | 9,560                      | 8,890                                      | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | N80n             | 6,740                         | 2,654                     | --                   | --  | --               | 8,000          | --                 | --  | --                | 7,950  | 8,760                      | 7,480                                      | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | N80              | 6,740                         | 2,654                     | --                   | --  | --               | 8,000          | --                 | --  | --                | 7,950  | 8,760                      | 9,050                                      | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | N80 HC           | 7,660                         | 2,654                     | --                   | --  | --               | 8,000          | --                 | --  | --                | 7,950  | 8,760                      | 9,050                                      | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | N80 HP           | 8,220                         | 3,152                     | --                   | --  | --               | 9,770          | --                 | --  | --                | 9,710  | 10,690                     | 9,910                                      | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | C90              | 7,260                         | 2,986                     | --                   | --  | --               | 9,000          | --                 | --  | --                | 8,940  | 9,850                      | 10,050                                     | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | USS C90          | 7,260                         | 2,986                     | --                   | --  | --               | 9,000          | --                 | --  | --                | 8,940  | 9,850                      | 10,050                                     | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | C95              | 7,500                         | 3,152                     | --                   | --  | --               | 9,500          | --                 | --  | --                | 9,440  | 10,400                     | 9,570                                      | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | T95              | 7,500                         | 3,152                     | --                   | --  | --               | 9,500          | --                 | --  | --                | 9,440  | 10,400                     | 10,580                                     | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | USS C95          | 7,500                         | 3,152                     | --                   | --  | --               | 9,500          | --                 | --  | --                | 9,440  | 10,400                     | 10,580                                     | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | USS C100         | 7,720                         | 3,318                     | --                   | --  | --               | 10,000         | --                 | --  | --                | 9,940  | 10,940                     | 10,100                                     | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | C110             | 8,130                         | 3,649                     | --                   | --  | --               | 11,000         | --                 | --  | --                | 10,930 | 12,040                     | 12,180                                     | --                             | --  |
| 14                              | --     | 112.89 | 0.800 | 12.400 | 12.244 | --        | P110 SR16        | 8,130                         | 3,649                     | --                   | --  | --               | 11,000         | --                 | --  | --                | 10,930 | 12,040                     | 11,480                                     | --                             | --  |

| Dimensional & Grade Designators |           |           |              |             |               |                     |               | TENSION                 |                           |                          |     |                  | Internal Yield |                    |         |         |                   | Ductile Rupture |                | Outside Diameter     |                          |
|---------------------------------|-----------|-----------|--------------|-------------|---------------|---------------------|---------------|-------------------------|---------------------------|--------------------------|-----|------------------|----------------|--------------------|---------|---------|-------------------|-----------------|----------------|----------------------|--------------------------|
| O D Size in.                    | Weight    |           | NOM Wall in. | NOM I D in. | API Drift in. | Alternate Drift in. | Product Grade | Collapse Resistance psi | Joint Strength, 1,000 lbs |                          |     |                  | Pipe Body psi  | Threaded & Coupled |         |         | Lame' - Von Mises |                 | Capped End psi | Regular Coupling in. | Special Clr Coupling in. |
|                                 | T&C lb/ft | P E lb/ft |              |             |               |                     |               |                         | Yield Pipe Body           | Threaded and Coupled STC | LTC | BTC <sup>a</sup> |                | STC psi            | LTC psi | BTC psi | Open End psi      | Capped End psi  |                |                      |                          |
| 14                              | --        | 112.89    | 0.800        | 12.400      | 12.244        | --                  | P110          | 8,130                   | 3,649                     | --                       | --  | --               | 11,000         | --                 | --      | --      | 10,930            | 12,040          | 12,690         | --                   | --                       |
| 14                              | --        | 112.89    | 0.800        | 12.400      | 12.244        | --                  | P110 HC       | 9,050                   | 3,649                     | --                       | --  | --               | 11,000         | --                 | --      | --      | 10,930            | 12,040          | 12,690         | --                   | --                       |
| 14                              | --        | 112.89    | 0.800        | 12.400      | 12.244        | --                  | P110 HP       | 9,630                   | 4,147                     | --                       | --  | --               | 12,860         | --                 | --      | --      | 12,770            | 14,060          | 13,720         | --                   | --                       |
| 14                              | --        | 112.89    | 0.800        | 12.400      | 12.244        | --                  | Q125          | 8,650                   | 4,147                     | --                       | --  | --               | 12,500         | --                 | --      | --      | 12,420            | 13,680          | 13,800         | --                   | --                       |
| 14                              | --        | 112.89    | 0.800        | 12.400      | 12.244        | --                  | Q125 HC       | 9,420                   | 4,147                     | --                       | --  | --               | 12,500         | --                 | --      | --      | 12,420            | 13,680          | 13,800         | --                   | --                       |
| 14                              | --        | 112.89    | 0.800        | 12.400      | 12.244        | --                  | Q125 HP       | 10,000                  | 4,479                     | --                       | --  | --               | 13,890         | --                 | --      | --      | 13,790            | 15,190          | 14,840         | --                   | --                       |
| 14                              | --        | 112.89    | 0.800        | 12.400      | 12.244        | --                  | USS140        | 9,040                   | 4,645                     | --                       | --  | --               | 14,000         | --                 | --      | --      | 13,910            | 15,320          | 15,450         | --                   | --                       |
| 14                              | --        | 112.89    | 0.800        | 12.400      | 12.244        | --                  | USS V150      | 9,220                   | 4,976                     | --                       | --  | --               | 15,000         | --                 | --      | --      | 14,910            | 16,420          | 16,560         | --                   | --                       |
| 16                              | 65.00     | 62.64     | 0.375        | 15.250      | 15.062        | --                  | H40           | 630                     | 736                       | 439                      | --  | --               | 1,640          | 1,640              | --      | --      | 1,640             | 1,850           | 1,770          | 17.000               | --                       |
| 16                              | 75.00     | 72.86     | 0.438        | 15.124      | 14.936        | --                  | J55           | 1,020                   | 1,178                     | 710                      | --  | 1,200            | 2,630          | 2,630              | --      | 2,630   | 2,630             | 2,960           | 2,600          | 17.000               | --                       |
| 16                              | 75.00     | 72.86     | 0.438        | 15.124      | 14.936        | --                  | K55           | 1,020                   | 1,178                     | 752                      | --  | 1,331            | 2,630          | 2,630              | --      | 2,630   | 2,630             | 2,960           | 3,300          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | J55           | 1,410                   | 1,326                     | 817                      | --  | 1,351            | 2,980          | 2,980              | --      | 2,980   | 2,970             | 3,340           | 2,950          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | K55           | 1,410                   | 1,326                     | 865                      | --  | 1,499            | 2,980          | 2,980              | --      | 2,980   | 2,970             | 3,340           | 3,740          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | USS GT80S     | 1,480                   | 1,929                     | 1,155                    | --  | 1,861            | 4,330          | 4,330              | --      | 4,330   | 4,320             | 4,850           | 4,560          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | L80           | 1,480                   | 1,929                     | 1,155                    | --  | 1,861            | 4,330          | 4,330              | --      | 4,330   | 4,320             | 4,850           | 4,560          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | L80 HC        | 1,820                   | 1,929                     | 1,155                    | --  | 1,861            | 4,330          | 4,330              | --      | 4,330   | 4,320             | 4,850           | 4,560          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | L80 HP        | 1,940                   | 2,050                     | 1,214                    | --  | 1,934            | 4,730          | 4,730              | --      | 4,730   | 4,720             | 5,310           | 4,720          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | N80n          | 1,480                   | 1,929                     | 1,167                    | --  | 1,898            | 4,330          | 4,330              | --      | 4,330   | 4,320             | 4,850           | 3,980          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | N80           | 1,480                   | 1,929                     | 1,167                    | --  | 1,898            | 4,330          | 4,330              | --      | 4,330   | 4,320             | 4,850           | 4,800          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | N80 HC        | 1,850                   | 1,929                     | 1,167                    | --  | 1,898            | 4,330          | 4,330              | --      | 4,330   | 4,320             | 4,850           | 4,800          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | N80 HP        | 1,970                   | 2,291                     | 1,354                    | --  | 2,153            | 5,290          | 5,290              | --      | 5,290   | 5,280             | 5,930           | 5,250          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | C95           | 1,480                   | 2,291                     | 1,354                    | --  | 2,153            | 5,140          | 5,140              | --      | 5,140   | 5,130             | 5,760           | 5,080          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | P110 SR16     | 1,480                   | 2,652                     | 1,575                    | --  | 2,518            | 5,950          | 5,950              | --      | 5,950   | 5,940             | 6,670           | 6,090          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | P110          | 1,480                   | 2,652                     | 1,575                    | --  | 2,518            | 5,950          | 5,950              | --      | 5,950   | 5,940             | 6,670           | 6,710          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | P110 HC       | 1,930                   | 2,652                     | 1,575                    | --  | 2,518            | 5,950          | 5,950              | --      | 5,950   | 5,940             | 6,670           | 6,710          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | P110 HP       | 2,050                   | 3,014                     | 1,762                    | --  | 2,772            | 6,960          | 6,960              | --      | 6,960   | 6,950             | 7,800           | 7,260          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | Q125          | 1,480                   | 3,014                     | 1,773                    | --  | 2,809            | 6,770          | 6,770              | --      | 6,770   | 6,750             | 7,580           | 7,300          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | Q125 HC       | 1,940                   | 3,014                     | 1,773                    | --  | 2,809            | 6,770          | 6,770              | --      | 6,770   | 6,750             | 7,580           | 7,300          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | Q125 HP       | 2,070                   | 3,255                     | 1,901                    | --  | 2,991            | 7,520          | 7,520              | --      | 7,520   | 7,500             | 8,430           | 7,850          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | USS140        | 1,480                   | 3,376                     | 1,983                    | --  | 3,138            | 7,580          | 7,580              | --      | 7,580   | 7,560             | 8,490           | 8,180          | 17.000               | --                       |
| 16                              | 84.00     | 82.05     | 0.495        | 15.010      | 14.822        | --                  | USS V150      | 1,480                   | 3,617                     | 2,123                    | --  | 3,356            | 8,120          | 8,120              | --      | 8,120   | 8,100             | 9,100           | 8,770          | 17.000               | --                       |
| 16                              | 97.00     | 94.81     | 0.575        | 14.850      | 14.662        | --                  | J55           | 1,950                   | 1,533                     | 967                      | --  | 1,561            | 3,460          | 3,460              | --      | 3,460   | 3,450             | 3,860           | 3,440          | 17.000               | --                       |
| 16                              | 97.00     | 94.81     | 0.575        | 14.850      | 14.662        | --                  | K55           | 1,950                   | 1,533                     | 1,023                    | --  | 1,732            | 3,460          | 3,460              | --      | 3,460   | 3,450             | 3,860           | 4,350          | 17.000               | --                       |
| 16                              | 97.00     | 94.81     | 0.575        | 14.850      | 14.662        | --                  | USS GT80S     | 2,270                   | 2,229                     | 1,367                    | --  | 2,151            | 5,030          | 5,030              | --      | 5,030   | 5,020             | 5,610           | 5,320          | 17.000               | --                       |
| 16                              | 97.00     | 94.81     | 0.575        | 14.850      | 14.662        | --                  | L80           | 2,270                   | 2,229                     | 1,367                    | --  | 2,151            | 5,030          | 5,030              | --      | 5,030   | 5,020             | 5,610           | 5,320          | 17.000               | --                       |
| 16                              | 97.00     | 94.81     | 0.575        | 14.850      | 14.662        | --                  | L80 HC        | 2,700                   | 2,229                     | 1,367                    | --  | 2,151            | 5,030          | 5,030              | --      | 5,030   | 5,020             | 5,610           | 5,320          | 17.000               | --                       |
| 16                              | 97.00     | 94.81     | 0.575        | 14.850      | 14.662        | --                  | L80 HP        | 2,860                   | 2,368                     | 1,435                    | --  | 2,235            | 5,500          | 5,500              | --      | 5,500   | 5,480             | 6,130           | 5,500          | 17.000               | --                       |
| 16                              | 97.00     | 94.81     | 0.575        | 14.850      | 14.662        | --                  | N80n          | 2,270                   | 2,229                     | 1,381                    | --  | 2,194            | 5,030          | 5,030              | --      | 5,030   | 5,020             | 5,610           | 4,640          | 17.000               | --                       |
| 16                              | 97.00     | 94.81     | 0.575        | 14.850      | 14.662        | --                  | N80           | 2,270                   | 2,229                     | 1,381                    | --  | 2,194            | 5,030          | 5,030              | --      | 5,030   | 5,020             | 5,610           | 5,600          | 17.000               | --                       |

| Dimensional & Grade Designators |              |              |             |           |              |              |                  | Collapse Resistance<br>psi | TENSION                   |  |    |       | Internal Yield      |                |            |            |                    |                      | Ductile Rupture<br>Capped<br>End<br>psi | Outside Diameter           |                                |
|---------------------------------|--------------|--------------|-------------|-----------|--------------|--------------|------------------|----------------------------|---------------------------|--|----|-------|---------------------|----------------|------------|------------|--------------------|----------------------|---|----------------------------|--------------------------------|
| O D<br>Size<br>in.              | Weight       |              | NOM         | NOM       | API          | Alternate    | Product<br>Grade |                            | Joint Strength, 1,000 lbs |  |    |       | Pipe<br>Body<br>psi | API Historical |            |            | Lame' - Von Mises  |                      |   | Regular<br>Coupling<br>in. | Special Clr<br>Coupling<br>in. |
|                                 | T&C<br>lb/ft | P E<br>lb/ft | Wall<br>in. | ID<br>in. | Drift<br>in. | Drift<br>in. |                  |                            | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> |    |       |                     | STC<br>psi     | LTC<br>psi | BTC<br>psi | Open<br>End<br>psi | Capped<br>End<br>psi |   |                            |                                |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | N80 HC           | 2,760                      | 2,229                     | 1,381  | -- | 2,194 | 5,030               | 5,030          | --         | 5,030      | 5,020              | 5,610                | 5,600                                   | 17.000                     | --                             |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | N80 HP           | 2,940                      | 2,647                     | 1,601  | -- | 2,488 | 6,150               | 5,800          | --         | 6,080      | 6,130              | 6,860                | 6,120                                   | 17.000                     | --                             |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | C95              | 2,340                      | 2,647                     | 1,601  | -- | 2,488 | 5,970               | 5,970          | --         | 5,970      | 5,960              | 6,670                | 5,920                                   | 17.000                     | --                             |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | P110 SR16        | 2,340                      | 3,065                     | 1,863  | -- | 2,910 | 6,920               | 6,920          | --         | 6,920      | 6,900              | 7,720                | 7,100                                   | 17.000                     | --                             |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | P110             | 2,340                      | 3,065                     | 1,863  | -- | 2,910 | 6,920               | 6,920          | --         | 6,920      | 6,900              | 7,720                | 7,830                                   | 17.000                     | --                             |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | P110 HC          | 2,930                      | 3,065                     | 1,863  | -- | 2,910 | 6,920               | 6,920          | --         | 6,920      | 6,900              | 7,720                | 7,830                                   | 17.000                     | --                             |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | P110 HP          | 3,110                      | 3,483                     | 2,083  | -- | 3,204 | 8,090               | 7,970          | --         | 8,090      | 8,060              | 9,020                | 8,470                                   | 17.000                     | --                             |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | Q125             | 2,340                      | 3,483                     | 2,097  | -- | 3,246 | 7,860               | 7,860          | --         | 7,860      | 7,840              | 8,770                | 8,520                                   | 17.000                     | --                             |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | Q125 HC          | 2,960                      | 3,483                     | 2,097  | -- | 3,246 | 7,860               | 7,860          | --         | 7,860      | 7,840              | 8,770                | 8,520                                   | 17.000                     | --                             |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | Q125 HP          | 3,150                      | 3,762                     | 2,249  | -- | 3,457 | 8,730               | 8,730          | --         | 8,730      | 8,710              | 9,740                | 9,160                                   | 17.000                     | --                             |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | USS140           | 2,340                      | 3,901                     | 2,346  | -- | 3,626 | 8,800               | 8,800          | --         | 8,800      | 8,780              | 9,820                | 9,540                                   | 17.000                     | --                             |
| 16                              | 97.00        | 94.81        | 0.575       | 14.850    | 14.662       | --           | USS V150         | 2,340                      | 4,180                     | 2,511  | -- | 3,879 | 9,430               | 9,430          | --         | 9,430      | 9,410              | 10,520               | 10,230                                  | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | J55              | 2,560                      | 1,739                     | 1,116  | -- | 1,772 | 3,950               | 3,950          | --         | 3,950      | 3,930              | 4,380                | 3,940                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | K55              | 2,560                      | 1,739                     | 1,181  | -- | 1,965 | 3,950               | 3,950          | --         | 3,950      | 3,930              | 4,380                | 4,990                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | USS GT80S        | 3,080                      | 2,530                     | 1,578  | -- | 2,441 | 5,740               | 5,740          | --         | 5,740      | 5,720              | 6,370                | 6,090                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | L80              | 3,080                      | 2,530                     | 1,578  | -- | 2,441 | 5,740               | 5,740          | --         | 5,740      | 5,720              | 6,370                | 6,090                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | L80 HC           | 3,710                      | 2,530                     | 1,578  | -- | 2,441 | 5,740               | 5,740          | --         | 5,740      | 5,720              | 6,370                | 6,090                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | L80 HP           | 3,940                      | 2,688                     | 1,657  | -- | 2,536 | 6,270               | 5,800          | --         | 6,080      | 6,250              | 6,970                | 6,300                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | N80n             | 3,080                      | 2,530                     | 1,594  | -- | 2,489 | 5,740               | 5,740          | --         | 5,740      | 5,720              | 6,370                | 5,310                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | N80              | 3,080                      | 2,530                     | 1,594  | -- | 2,489 | 5,740               | 5,740          | --         | 5,740      | 5,720              | 6,370                | 6,410                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | N80 HC           | 3,830                      | 2,530                     | 1,594  | -- | 2,489 | 5,740               | 5,740          | --         | 5,740      | 5,720              | 6,370                | 6,410                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | N80 HP           | 4,090                      | 3,004                     | 1,848  | -- | 2,823 | 7,010               | 5,800          | --         | 6,080      | 6,990              | 7,780                | 7,020                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | C95              | 3,320                      | 3,004                     | 1,848  | -- | 2,823 | 6,820               | 6,820          | --         | 6,820      | 6,790              | 7,570                | 6,780                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | USS C100         | 3,380                      | 3,162                     | 1,911  | -- | 2,870 | 7,180               | 7,180          | --         | 7,180      | 7,150              | 7,970                | 6,470                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | C110             | 3,470                      | 3,478                     | 2,135  | -- | 3,254 | 7,890               | 7,890          | --         | 7,890      | 7,870              | 8,770                | 7,810                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | P110 SR16        | 3,470                      | 3,478                     | 2,151  | -- | 3,302 | 7,890               | 7,890          | --         | 7,890      | 7,870              | 8,770                | 8,130                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | P110             | 3,470                      | 3,478                     | 2,151  | -- | 3,302 | 7,890               | 7,890          | --         | 7,890      | 7,870              | 8,770                | 8,980                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | P110 HC          | 4,160                      | 3,478                     | 2,151  | -- | 3,302 | 7,890               | 7,890          | --         | 7,890      | 7,870              | 8,770                | 8,980                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | P110 HP          | 4,420                      | 3,953                     | 2,405  | -- | 3,636 | 9,230               | 7,970          | --         | 8,360      | 9,190              | 10,240               | 9,700                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | Q125             | 3,520                      | 3,953                     | 2,422  | -- | 3,684 | 8,970               | 8,970          | --         | 8,970      | 8,940              | 9,960                | 9,770                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | Q125 HC          | 4,230                      | 3,953                     | 2,422  | -- | 3,684 | 8,970               | 8,970          | --         | 8,970      | 8,940              | 9,960                | 9,770                                   | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | Q125 HP          | 4,500                      | 4,269                     | 2,597  | -- | 3,923 | 9,960               | 9,060          | --         | 9,500      | 9,930              | 11,060               | 10,500                                  | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | USS140           | 3,520                      | 4,427                     | 2,708  | -- | 4,115 | 10,050              | 10,050         | --         | 10,050     | 10,010             | 11,160               | 10,930                                  | 17.000                     | --                             |
| 16                              | 109.00       | 107.60       | 0.656       | 14.688    | 14.500       | --           | USS V150         | 3,520                      | 4,743                     | 2,900  | -- | 4,402 | 10,760              | 10,760         | --         | 10,760     | 10,730             | 11,950               | 11,720                                  | 17.000                     | --                             |
| 18 5/8                          | 87.50        | 84.59        | 0.435       | 17.755    | 17.567       | --           | H40              | 630                        | 994                       | 559  | -- | --    | 1,640               | 1,640          | --         | --         | 1,630              | 1,840                | 1,760                                   | 20.000                     | --                             |
| 18 5/8                          | 87.50        | 84.59        | 0.435       | 17.755    | 17.567       | --           | J55              | 630                        | 1,367                     | 754  | -- | 1,329 | 2,250               | 2,250          | --         | 2,250      | 2,250              | 2,540                | 2,220                                   | 20.000                     | --                             |
| 18 5/8                          | 87.50        | 84.59        | 0.435       | 17.755    | 17.567       | --           | K55              | 630                        | 1,367                     | 794  | -- | 1,427 | 2,250               | 2,250          | --         | 2,250      | 2,250              | 2,540                | 2,810                                   | 20.000                     | --                             |
| 18 5/8                          | 94.50        | 90.84        | 0.468       | 17.689    | 17.501       | --           | K55              | 780                        | 1,468                     | 865  | -- | 1,533 | 2,420               | 2,420          | --         | 2,420      | 2,420              | 2,720                | 3,030                                   | 20.000                     | --                             |
| 18 5/8                          | 106.00       | 103.83       | 0.537       | 17.551    | 17.363       | --           | K55              | 1,180                      | 1,678                     | 1,011  | -- | 1,752 | 2,780               | 2,780          | --         | 2,780      | 2,770              | 3,120                | 3,480                                   | 20.000                     | --                             |

| Dimensional & Grade Designators |              |              |             |            |              |              |                  | TENSION                       |                           |  |            |            | Internal Yield      |                |                    |                      |                   | Ductile         | Outside Diameter                           |         |             |
|---------------------------------|--------------|--------------|-------------|------------|--------------|--------------|------------------|-------------------------------|---------------------------|--|------------|------------|---------------------|----------------|--------------------|----------------------|-------------------|-----------------|--|---------|-------------|
| O D<br>Size<br>in.              | Weight       |              | NOM         | NOM        | API          | Alternate    | Product<br>Grade | Collapse<br>Resistance<br>psi | Joint Strength, 1,000 lbs |  |            |            | Pipe<br>Body<br>psi | API Historical |                    |                      | Lame' - Von Mises |                 | Ductile<br>Rupture<br>Capped<br>End<br>psi | Regular | Special Clr |
|                                 | T&C<br>lb/ft | P E<br>lb/ft | Wall<br>in. | I D<br>in. | Drift<br>in. | Drift<br>in. |                  |                               | Yield<br>Pipe Body        | Threaded and Coupled<br>STC LTC BTC <sup>a</sup> | STC<br>psi | LTC<br>psi |                     | BTC<br>psi     | Open<br>End<br>psi | Capped<br>End<br>psi | Coupling<br>in.   | Coupling<br>in. |  |         |             |
| 18 5/8                          | 117.50       | 114.31       | 0.593       | 17.439     | 17.251       | --           | K55              | 1,510                         | 1,848                     | 1,129  | --         | 1,929      | 3,070               | 3,070          | --                 | 3,070                | 3,060             | 3,430           | 3,850                                      | 20.000  | --          |
| 20                              | 94.00        | 91.59        | 0.438       | 19.124     | 18.936       | --           | H40              | 520                           | 1,077                     | 581  | 673        | --         | 1,530               | 1,530          | 1,530              | --                   | 1,530             | 1,730           | 1,650                                      | 21.000  | --          |
| 20                              | 94.00        | 91.59        | 0.438       | 19.124     | 18.936       | --           | J55              | 520                           | 1,480                     | 783  | 907        | 1,402      | 2,110               | 2,110          | 2,110              | 2,110                | 2,100             | 2,380           | 2,080                                      | 21.000  | --          |
| 20                              | 94.00        | 91.59        | 0.438       | 19.124     | 18.936       | --           | K55              | 520                           | 1,480                     | 823  | 955        | 1,479      | 2,110               | 2,110          | 2,110              | 2,110                | 2,100             | 2,380           | 2,630                                      | 21.000  | --          |
| 20                              | 106.50       | 104.23       | 0.500       | 19.000     | 18.812       | --           | J55              | 770                           | 1,685                     | 913  | 1,056      | 1,596      | 2,410               | 2,410          | 2,410              | 2,410                | 2,410             | 2,710           | 2,380                                      | 21.000  | --          |
| 20                              | 106.50       | 104.23       | 0.500       | 19.000     | 18.812       | --           | K55              | 770                           | 1,685                     | 959  | 1,113      | 1,683      | 2,410               | 2,410          | 2,410              | 2,410                | 2,410             | 2,710           | 3,010                                      | 21.000  | --          |
| 20                              | 133.00       | 131.45       | 0.635       | 18.730     | 18.542       | --           | J55              | 1,500                         | 2,125                     | 1,192  | 1,379      | 2,012      | 3,060               | 3,060          | 3,060              | 3,060                | 3,050             | 3,420           | 3,030                                      | 21.000  | --          |
| 20                              | 133.00       | 131.45       | 0.635       | 18.730     | 18.542       | --           | K55              | 1,500                         | 2,125                     | 1,252  | 1,453      | 2,123      | 3,060               | 3,060          | 3,060              | 3,060                | 3,050             | 3,420           | 3,840                                      | 21.000  | --          |
| 20                              | 133.00       | 131.45       | 0.635       | 18.730     | 18.542       | --           | N80              | 1,600                         | 3,091                     | 1,706  | 1,973      | 2,877      | 4,450               | 4,450          | 4,450              | 4,450                | 4,440             | 4,980           | 4,090                                      | 21.000  | --          |
| 20                              | 133.00       | 131.45       | 0.635       | 18.730     | 18.542       | --           | N80 HC           | 1,990                         | 3,091                     | 1,706  | 1,973      | 2,877      | 4,450               | 4,450          | 4,450              | 4,450                | 4,440             | 4,980           | 4,090                                      | 21.000  | --          |
| 20                              | 133.00       | 131.45       | 0.635       | 18.730     | 18.542       | --           | N80 HP           | 1,120                         | 3,670                     | 1,984  | 2,293      | 3,340      | 5,430               | 4,710          | 5,010              | 4,920                | 5,420             | 6,080           | 4,500                                      | 21.000  | --          |
| 20                              | 133.00       | 131.45       | 0.635       | 18.730     | 18.542       | --           | USS C100         | 1,600                         | 3,863                     | 2,056  | 2,375      | 3,458      | 5,560               | 5,560          | 5,560              | 5,560                | 5,550             | 6,220           | 4,140                                      | 21.000  | --          |
| 20                              | 133.00       | 131.45       | 0.635       | 18.730     | 18.542       | --           | C110             | 1,600                         | 4,250                     | 2,292  | 2,649      | 3,859      | 6,120               | 6,120          | 6,120              | 6,120                | 6,100             | 6,840           | 4,990                                      | 21.000  | --          |
| 20                              | 163.00       | 160.46       | 0.781       | 18.438     | 18.250       | --           | K55              | 2,290                         | 2,594                     | 1,565  | 1,815      | 2,591      | 3,760               | 3,240          | 3,440              | 3,380                | 3,750             | 4,180           | 4,740                                      | 21.000  | --          |
| 20                              | 169.00       | 166.56       | 0.812       | 18.376     | 18.188       | --           | K55              | 2,500                         | 2,692                     | 1,631  | 1,892      | 2,689      | 3,910               | 3,240          | 3,440              | 3,380                | 3,900             | 4,340           | 4,940                                      | 21.000  | --          |