

# Safe Working Pressure and Bursting Pressure per ASME B31-2007

## For seamless tube:

| ASTM Spec No. | Alloy No. | Temper      | Minimum Tensile, psi | Minimum Yield, psi | Maximum allowable stress in psi at operating temperature, in °F, not exceeding <sup>1</sup> |        |        |        |        |        |        |        |       |       |       |       |       |
|---------------|-----------|-------------|----------------------|--------------------|---------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|
|               |           |             |                      |                    | -20 to 100                                                                                  | 150    | 200    | 250    | 300    | 350    | 400    | 450    | 500   | 550   | 600   | 700   | 750   |
| B42/<br>B75   | C10200    | Annealed    | 30,000               | 9,000              | 6,000                                                                                       | 5,100  | 4,900  | 4,800  | 4,700  | 4,000  | 3,000  |        |       |       |       |       |       |
|               | C12000    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C12200    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C10200    | Drawn       | 36,000               | 30,000             | 10,300                                                                                      | 10,300 | 10,300 | 10,300 | 10,000 | 9,700  | 9,400  |        |       |       |       |       |       |
|               | C12000    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C12200    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C10200    | Hard        | 45,000               | 40,000             | 12,900                                                                                      | 12,900 | 12,900 | 12,500 | 12,500 | 11,800 | 4,300  |        |       |       |       |       |       |
|               | C12000    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C12200    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
| B43           | C23000    | Annealed    | 40,000               | 12,000             | 8,000                                                                                       | 8,000  | 8,000  | 8,000  | 8,000  | 7,000  | 5,000  | 2,000  |       |       |       |       |       |
|               | C23000    | Drawn       | 44,000               | 18,000             | 8,000                                                                                       | 8,000  | 8,000  | 8,000  | 8,000  | 7,000  | 5,000  | 2,000  |       |       |       |       |       |
| B68           | C10200    | Annealed    | 30,000               | 9,000              | 6,000                                                                                       | 5,100  | 4,900  | 4,800  | 4,700  | 4,000  | 3,000  |        |       |       |       |       |       |
|               | C12000    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C12200    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
| B88           | C10200    | Annealed    | 30,000               | 9,000              | 6,000                                                                                       | 5,100  | 4,900  | 4,800  | 4,700  | 4,000  | 3,000  |        |       |       |       |       |       |
|               | C12000    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C12200    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C10200    | Drawn       | 36,000               | 30,000             | 10,300                                                                                      | 10,300 | 10,300 | 10,300 | 10,000 | 9,700  | 9,400  |        |       |       |       |       |       |
|               | C12000    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C12200    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
| B111          | C10200    | Light Drawn | 36,000               | 30,000             | 10,300                                                                                      | 10,300 | 10,300 | 10,300 | 10,000 | 9,700  | 9,400  |        |       |       |       |       |       |
|               | C12000    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C12200    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C10200    | Hard        | 45,000               | 40,000             | 12,900                                                                                      | 12,900 | 12,900 | 12,500 | 12,500 | 11,800 | 4,300  |        |       |       |       |       |       |
|               | C12000    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
|               | C12200    |             |                      |                    |                                                                                             |        |        |        |        |        |        |        |       |       |       |       |       |
| B111          | C23000    | Annealed    | 40,000               | 12,000             | 8,000                                                                                       | 8,000  | 8,000  | 8,000  | 8,000  | 7,000  | 5,000  | 2,000  |       |       |       |       |       |
|               | C44300    | Annealed    | 45,000               | 15,000             | 10,000                                                                                      | 10,000 | 10,000 | 10,000 | 10,000 | 9,800  | 3,500  | 2,000  |       |       |       |       |       |
|               | C70600    | Annealed    | 40,000               | 15,000             | 10,000                                                                                      | 9,700  | 9,500  | 9,300  | 9,000  | 8,800  | 8,700  | 8,500  | 8,000 | 7,000 | 6,000 |       |       |
|               | C71500    | Annealed    | 52,000               | 18,000             | 12,000                                                                                      | 11,600 | 11,300 | 11,000 | 10,800 | 10,500 | 10,300 | 10,100 | 9,900 | 9,800 | 9,600 | 9,500 | 9,400 |
| B280          | C12200    | Annealed    | 30,000               | 9,000              | 6,000                                                                                       | 5,100  | 4,800  | 4,800  | 4,700  | 4,000  | 3,000  |        |       |       |       |       |       |
|               | C12200    | Drawn       | 36,000               | 30,000             | 10,300                                                                                      | 10,300 | 10,300 | 10,300 | 10,00  | 9,700  | 9,400  |        |       |       |       |       |       |
| B466          | C70600    | Annealed    | 38,000               | 13,000             | 8,700                                                                                       | 8,400  | 8,200  | 8,000  | 7,800  | 7,700  | 7,500  | 7,400  | 7,300 | 7,000 | 6,000 |       |       |
|               | C71500    | Annealed    | 50,000               | 18,000             | 12,000                                                                                      | 11,600 | 11,300 | 11,000 | 10,800 | 10,500 | 10,300 | 10,100 | 9,900 | 9,800 | 9,600 |       |       |

1) Maximum allowable stress values taken from ASME B 31.1 Appendix A, Table A-6

## For welded tube:

| ASTM Spec No. | Alloy No. | Temper   | Minimum Tensile, ksi | Minimum Yield, ksi | Maximum allowable stress in psi at operating temperature, in °F, not exceeding <sup>1</sup> |        |        |        |        |        |       |       |       |       |       |     |     |
|---------------|-----------|----------|----------------------|--------------------|---------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-----|-----|
|               |           |          |                      |                    | -20 to 100                                                                                  | 150    | 200    | 250    | 300    | 350    | 400   | 450   | 500   | 550   | 600   | 700 | 750 |
| B467          | C70600    | Annealed | 40,000               | 15,000             | 8,500                                                                                       | 8,300  | 8,100  | 7,900  | 7,700  | 7,500  | 7,400 | 7,200 | 6,300 | 5,700 | 4,300 |     |     |
| B476          | C71500    | Annealed | 50,000               | 20,000             | 11,300                                                                                      | 10,900 | 10,700 | 10,400 | 10,200 | 10,000 | 9,700 | 9,600 | 9,400 | 9,200 | 9,100 |     |     |

1) Maximum allowable stress values taken from ASME B 31.1 Appendix A, Table A-6

## For Aluminum Tube:

| ASTM Spec No. | Alloy No. | Temper       | Minimum Tensile, psi | Minimum Yield, psi | Maximum allowable stress in psi at operating temperature, in °F, not exceeding <sup>1</sup> |       |        |       |       |       |       |     |     |     |     |     |     |
|---------------|-----------|--------------|----------------------|--------------------|---------------------------------------------------------------------------------------------|-------|--------|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|
|               |           |              |                      |                    | -20 to 100                                                                                  | 150   | 200    | 250   | 300   | 350   | 400   | 450 | 500 | 550 | 600 | 700 | 750 |
| B210          | A93003    | O Annealed   | 14,000               | 5,000              | 3,400                                                                                       | 3,400 | 34,000 | 3,000 | 2,400 | 1,800 | 1,400 |     |     |     |     |     |     |
|               | A93003    | H14 1/2 hard | 20,000               | 17,000             | 5,700                                                                                       | 5,700 | 5,700  | 4,900 | 4,300 | 3,000 | 2,300 |     |     |     |     |     |     |
| B234          | A93003    | H14 1/2 hard | 20,000               | 17,000             | 5,700                                                                                       | 5,700 | 5,700  | 4,900 | 4,300 | 3,000 | 2,400 |     |     |     |     |     |     |
| B241          | A93003    | O Annealed   | 14,000               | 5,000              | 3,400                                                                                       | 3,400 | 3,400  | 3,000 | 2,400 | 1,800 | 1,400 |     |     |     |     |     |     |
|               | A93003    | H18 Hard     | 27,000               | 24,000             | 7,800                                                                                       | 7,800 | 7,700  | 6,300 | 5,400 | 3,500 | 2,500 |     |     |     |     |     |     |

1) Maximum allowable stress values taken from ASME B 31.1 Appendix A, Table A-7