

"M" and "Y" Data

"M" and "Y" data are to be used for flange designs only as specified in the ASME Boiler and Pressure Vessel Code Division 1, Section VIII, Appendix 2. They are not meant to be used as gasket seating stress values in actual service. Our bolt torque tables give that information and should be used as such.

"M" - Maintenance Factor

A factor that provides the additional preload needed in the flange fasteners to maintain the compressive load on a gasket after internal pressure is applied to a joint. The net operating stress on a pressurized gasket should be at least (m) x (design pressure, psi).

"Y" - Minimum Design Seating Stress

The minimum compressive stress in pounds per square inch (or bar) on the contact area of the gasket that is required to provide a seal at an internal pressure of 2 psig (0.14 bar).

| Style | Thickness | M | Y (psi) |
|-------------------------|-----------|-------|---------|
| ST-706 | 1/16" | 11.4* | 4,800 |
| | 1/8" | 22.0* | 6,500 |
| 3000 | 1/16" | 4.2 | 3,050 |
| | 1/8" | 5.2 | 4,400 |
| 3123 / 3125 | 1/16" | 2.0 | 2,500 |
| | 1/8" | 2.0 | 2,500 |
| 3124 (Wire-inserted) | 1/16" | 2.0 | 2,500 |
| | 1/8" | 2.0 | 2,500 |
| 3125SS | 1/16" | 6.5 | 3,300 |
| | 1/8" | 11.8* | 5,900 |
| 3125TC | 1/16" | 2.6 | 2,500 |
| | 1/8" | 6.0 | 3,000 |
| 3200 / 3400 | 1/16" | 3.5 | 2,100 |
| | 1/8" | 6.6 | 3,000 |
| 3300 | 1/16" | 2.1 | 3,050 |
| | 1/8" | 4.0 | 3,500 |
| 3500 | 1/16" | 5.0 | 2,750 |
| | 1/8" | 5.0 | 3,500 |
| 3504 | 1/16" | 3.0 | 1,650 |
| | 1/8" | 2.5 | 3,000 |
| | 3/16" | 2.5 | 3,000 |
| | 1/4" | 2.5 | 3,000 |
| 3510 | 1/16" | 2.0 | 2,350 |
| | 1/8" | 2.0 | 2,500 |
| 3530 | 1/16" | 2.8 | 1,650 |
| | 1/8" | 2.0 | 1,650 |
| 3535 | 1/4" | 2.0 | 3,000 |
| 3540 | 1/16" | 3.0 | 1,700 |
| | 1/8" | 3.0 | 2,200 |
| | 3/16" | 2.0 | 2,200 |
| | 1/4" | 2.0 | 2,500 |

| Style | Thickness | M | Y (psi) |
|-------------------|-----------|-----|---------|
| 3545 | 1/16" | 2.6 | 1,500 |
| | 1/8" | 2.0 | 2,200 |
| | 3/16" | 2.0 | 2,200 |
| | 1/4" | 7.0 | 3,700 |
| (in envelope) | 1/8" | 2.0 | 800 |
| HP 3560 | 1/16" | 5.0 | 3,500 |
| | 1/8" | 5.0 | 4,000 |
| HP 3561 | 1/16" | 5.0 | 3,500 |
| | 1/8" | 5.0 | 4,000 |
| 3565 | 1/16" | 2.8 | 1,400 |
| | 1/8" | 3.7 | 2,300 |
| | 3/16" | 5.5 | 2,800 |
| | 1/4" | 6.0 | 2,800 |
| 3591 | 1/16" | 4.3 | 1,650 |
| | 1/8" | 2.0 | 1,650 |
| 3594 | 1/16" | 3.0 | 1,650 |
| | 1/8" | 3.0 | 2,500 |
| 3700 | 1/16" | 3.5 | 2,800 |
| | 1/8" | 6.7 | 4,200 |
| IFG® 5500 | 1/16" | 6.6 | 2,600 |
| | 1/8" | 6.6 | 3,300 |
| IFG® 5507 | 1/16" | 3.5 | 2,400 |
| | 1/8" | 5.5 | 3,900 |
| 9800 | 1/16" | 3.5 | 2,350 |
| | 1/8" | 8.0 | 3,200 |
| 9850 | 1/16" | 6.5 | 2,550 |
| | 1/8" | 8.0 | 2,800 |
| G-9900 | 1/16" | 4.5 | 4,100 |
| | 1/8" | 6.0 | 4,100 |
| STRESS SAVER® 370 | 1/8" | 2.0 | 400 |

* These M values, based on ambient temperature leakage with nitrogen, are high. Field experience has shown that lower values would be workable in elevated temperatures. Consult Applications Engineering.

Gasket Constants

| Style | Thickness | Gb | a | Gs | S100 | S1000 | S3000 | S5000 | S10000 | Tpmin | Tpmax |
|--------|-----------|-------|-------|----------|-------|--------|--------|--------|--------|--------|---------|
| 3123 | 1/16" | 970 | 0.384 | 0.05 | 5,686 | 13,765 | 20,989 | 25,537 | 33,325 | — | — |
| 3125SS | 1/16" | 816 | 0.377 | 0.066 | 4,631 | 11,033 | 16,694 | 20,240 | 26,284 | — | — |
| 3125TC | 1/16" | 1400 | 0.324 | 0.01 | 6,225 | 13,126 | 18,738 | 22,110 | 27,678 | — | — |
| 3500 | 1/16" | 949 | 0.253 | 2.60E+00 | 3,043 | 5,448 | 7,194 | 8,187 | 9,756 | 373 | 16,890 |
| | 1/8" | 1980 | 0.169 | 3.93E-01 | 4,313 | 6,365 | 7,663 | 8,354 | 9,393 | 223 | 25,375 |
| 3504 | 1/16" | 183 | 0.357 | 4.01E-03 | 947 | 2,155 | 3,190 | 3,828 | 4,903 | 3,097 | 14,817 |
| | 1/8" | 1008 | 0.221 | 2.23E+00 | 2,793 | 4,649 | 5,928 | 6,638 | 7,739 | 141 | 72,992 |
| 3510 | 1/16" | 289 | 0.274 | 6.61E-11 | 1,021 | 1,918 | 2,592 | 2,981 | 3,605 | 11,881 | 25,501 |
| | 1/8" | 444 | 0.332 | 1.29E-02 | 2,048 | 4,399 | 6,336 | 7,507 | 9,449 | 1,770 | 17,550 |
| 3535 | 3/8" | 430 | 0.286 | 1.69E-09 | 1,605 | 3,101 | 4,245 | 4,913 | 5,991 | 373 | — |
| 3540 | 1/16" | 550 | 0.304 | 7.64E-01 | 2,230 | 4,491 | 6,272 | 7,326 | 9,044 | 973 | 23,670 |
| 3545 | 1/16" | 162.1 | 0.379 | 1.35E-09 | 927 | 2,217 | 3,361 | 4,079 | 5,303 | 18,209 | 61,985 |
| | 1/8" | 92.48 | 0.468 | 2.50E-03 | 799 | 2,349 | 3,930 | 4,992 | 6,907 | 4,460 | 53,307 |
| | 3/16" | 628 | 0.249 | 7.93E-05 | 1,977 | 3,507 | 4,611 | 5,236 | 6,222 | 373 | — |
| 3561 | 1/16" | 72.3 | 0.466 | 2.16E-01 | 618 | 1,808 | 3,016 | 3,827 | 5,286 | 1,688 | 21,755 |
| 3591 | 1/16" | 35 | 0.582 | 1.90E-04 | 517 | 1,975 | 3,745 | 5,041 | 7,547 | 1,410 | 29,194 |
| 3594 | 1/16" | 151 | 0.41 | 1.64E-05 | 998 | 2,564 | 4,023 | 4,961 | 6,591 | 10,318 | 41,724 |
| | 1/8" | 66 | 0.523 | 4.98E-06 | 739 | 2,462 | 4,373 | 5,712 | 8,208 | 6,308 | 24,174 |
| 3700 | 1/8" | 1,318 | 0.258 | 6.00E-01 | 4,324 | 7,833 | 10,400 | 11,865 | 14,188 | 373 | — |
| 5500 | 1/16" | 1,247 | 0.249 | 1.10E+01 | 3,925 | 6,964 | 9,155 | 10,397 | 12,356 | 373 | — |
| 9850 | 1/16" | 1,591 | 0.239 | 9.30E+00 | 4,783 | 8,292 | 10,782 | 12,182 | 14,377 | 141 | 110,005 |
| 9900 | 1/16" | 2,322 | 0.133 | 1.80E+01 | 4,284 | 5,819 | 6,735 | 7,208 | 7,904 | 199 | 128,434 |
| ST-706 | 1/16" | 2,455 | 0.267 | 6.22E-01 | 8,396 | 15,526 | 20,818 | 23,860 | 28,711 | — | — |

Gb = stress at which seal is initiated; "a" = the slope of the log/log tightness curve; Gs = intersection of the unload curve with the vertical axis (Tp1).

Note: For a 5" OD gasket at 800 psig, Tp100 = 102ml/min. leakage, Tp1,000 = 1.02ml/min. leakage, Tp10,000 = 0.01 ml/min. leakage.