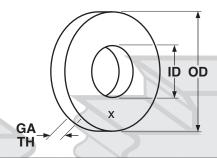
USS Flat





| USS Low Carbon & Stainless Washers ASME B18.21.1- 2009 | | | | | | | | | | |
|---|------------------|-------|-------|-----------------|-------|-------|---------------------------------|------|------|---|
| Bolt Size | Outside Diameter | | | Inside Diameter | | | Thickness | | | Approximate |
| | Nominal | Max | Min | Nominal | Max | Min | American Standard (Gauge) | Max | Min | Number of STEEL washers per 50 Pounds |
| 3/16 | 9/16 | 0.577 | 0.557 | 1/4 | 0.265 | 0.245 | 18 (3/64) | .065 | .036 | 18050 |
| 1/4 | 3/4 | 0.749 | 0.727 | 5/16 | 0.327 | 0.307 | 16 (1/16) | .080 | .051 | 7450 |
| 5/16 | 7/8 | 0.905 | 0.868 | 3/8 | 0.390 | 0.370 | 14 (5/64) | .104 | .064 | 4350 |
| 3/8 | 1 | 1.030 | 0.993 | 7/16 | 0.453 | 0.433 | 14 (5/64) | .104 | .064 | 3350 |
| 7/16 | 1-1/4 | 1.280 | 1.243 | 1/2 | 0.515 | 0.495 | 14 (5/64) | .104 | .064 | 2050 |
| 1/2 | 1-3/8 | 1.405 | 1.368 | 9/16 | 0.577 | 0.557 | 12 (7/64) | .132 | .086 | 1300 |
| 9/16 | 1-1/2 | 1.499 | 1.462 | 5/8 | 0.640 | 0.620 | 21 (7/64) | .132 | .086 | 1100 |
| 5/8 | 1-3/4 | 1.780 | 1.743 | 11/16 | 0.718 | 0.681 | 10 (9/64) | .160 | .108 | 650 |
| 3/4 | 2 | 2.030 | 1.993 | 13/16 | 0.842 | 0.805 | 9 (5/32) | .177 | .122 | 455 |
| 7/8 | 2-1/4 | 2.280 | 2.243 | 15/16 | 0.968 | 0.931 | 8 (11/64) | .192 | .136 | 325 |
| 1 | 2-1/2 | 2.530 | 2.493 | 1-1/16 | 1.092 | 1.055 | 8 (11/64) | .192 | .136 | 265 |
| 1-1/8 | 2-3/4 | 2.780 | 2.743 | 1-1/4 | 1.280 | 1.243 | 8 (11/64) | .192 | .136 | 225 |
| 1-1/4 | 3 | 3.030 | 2.993 | 1-3/8 | 1.405 | 1.368 | 8 (11/64) | .192 | .136 | 190 |
| 1-3/8 | 3-1/4 | 3.295 | 3.240 | 1-1/2 | 1.545 | 1.490 | 7 (3/16) | .213 | .153 | 150 |
| 1-1/2 | 3-1/2 | 3.545 | 3.490 | 1-5/8 | 1.670 | 1.615 | 7 (3/16) | .213 | .153 | 130 |
| 1-5/8 | 3-3/4 | 3.795 | 3.740 | 1-3/4 | 1.795 | 1.740 | 7 (3/16) | .213 | .153 | 115 |
| 1-3/4 | 4 | 4.045 | 3.990 | 1-7/8 | 1.920 | 1.865 | 7 (3/16) | .213 | .153 | 100 |
| 1-7/8 | 4-1/4 | 4.295 | 4.240 | 2 | 2.045 | 1.990 | 7 (3/16) | .213 | .153 | 90 |
| 2 | 4-1/2 | 4.545 | 4.490 | 2-1/8 | 2.170 | 2.115 | 7 (3/16) | .213 | .153 | 79 |
| 2-1/4 | 4-3/4 | 4.795 | 4.740 | 2-3/8 | 2.420 | 2.365 | 5 (7/32) | .248 | .193 | 60 |
| 2-1/2 | 5 | 5.045 | 4.990 | 2-5/8 | 2.670 | 2.615 | 4 (15/64) | .280 | .210 | 52 |
| 2-3/4 | 5-1/4 | 5.315 | 5.240 | 2-7/8 | 2.940 | 2.865 | 3 (1/4) | .310 | .228 | 45 |
| 3 | 5-1/2 | 5.565 | 5.490 | 3-1/8 | 3.190 | 3.115 | 2 (5/32) | .327 | .249 | 43 |

| Description | A thin, flat, circular metal part with a centrally located hole. | | | | | |
|---|---|--|---------------|--|--|--|
| Applications/ Advantages Washers are designed for assembly around a bolt or screw, between the bearing surface of the fastener and the part to which i washers are used to improve stress distribution, and to span large clearance holes. USS washers are designed to meet the manufacturing, maintenance and repair. | | | | | | |
| | Steel | Stainless | | | | |
| Material | Plain washers shall be punched from hot-rolled, hot-rolled and pickled, or cold-rolled steel, or shall be machined from bar stock or tubing, or many be forged at the maufacturer's option. | 18-8 Stainless | 316 Stainless | | | |
| Plating | See Appendix-A for information about the plating of low carbon flat washers. | Stainless USS flat washers are typically furnished plain or with a black oxide finish. | | | | |