

ASTM F594W

FERRITIC STAINLESS STEEL

BOLTING MATERIAL FOR GENERAL PURPOSE USE

ASTM F594W Specification covers the requirements for stainless steel nuts 0.25"-1.50" inclusive in nominal diameter in a number of alloys in common use and intended for service application requiring general corrosion resistance. Seven group of stainless steel alloys are covered including 10 AUSTENITIC, 2 FERRITIC, 4 MARTENSITIC & 1 PRECIPITATION HERDENING. Suitable Bolts, hex cap screws & studs used with these nuts shall confirm to the requirements of specification F593 & shall be of the same alloy group.

Chemical Properties

| Stainless Alloy Group Group 4 | UNS No. | Composition, % maximum except as shown | | | | | | | | |
|----------------------------------|---------|--|---------|------------|----------|---------|-----------|--------|--------|------------|
| | | Carbon | Magnese | Phosphorus | Sulfur | Silicon | Chromium | Nickel | Copper | Molybdenum |
| 430 | S43000 | 0.12 | 1.00 | 0.040 | 0.030 | 1.00 | 16.0-18.0 | - | - | - |
| 430F | S43020 | 0.12 | 1.25 | 0.060 | 0.15 min | 1.00 | 16.0-18.0 | - | - | 0.60 max |

Mechanical Properties

| Alloy | Marking | Size | Proof Stress | Hardness |
|-------|---------|----------------|--------------|-----------|
| 4 | F594W | 3/4" To 1 1/2" | 55 Ksi Min | B65 TO 95 |

Heat Treatment

Annealed and cold worked. Sizes 0.75 in and larger may be hot worked and solution annealed

Tensile Stress Areas and Threads Per Inch

| Size | Coarse Thread (UNC) | | Fine Thread (UNF) | | 8 Thread series (8 UN) | |
|--------|---------------------|-------------|-------------------|-------------|------------------------|-------------|
| | Threads | Stress Area | Threads | Stress Area | Threads | Stress Area |
| 1/4" | 20 | 0.0318 | 28 | 0.0364 | -- | -- |
| 5/16" | 18 | 0.0524 | 24 | 0.0364 | -- | -- |
| 3/16" | 16 | 0.0775 | 24 | 0.0878 | -- | -- |
| 7/16" | 14 | 0.1063 | 20 | 0.1187 | -- | -- |
| 1/2" | 13 | 0.1419 | 20 | 0.1599 | -- | -- |
| 9/16" | 12 | 0.1820 | 18 | 0.2030 | -- | -- |
| 5/8" | 11 | 0.2260 | 18 | 0.2560 | -- | -- |
| 3/4" | 10 | 0.3340 | 16 | 0.3730 | -- | -- |
| 7/8" | 9 | 0.4620 | 14 | 0.5090 | -- | -- |
| 1" | 8 | 0.6060 | 12 | 0.6630 | -- | -- |
| 1 1/8" | 7 | 0.7630 | 12 | 0.8560 | 8 | 0.790 |
| 1 1/4" | 7 | 0.9690 | 12 | 1.0730 | 8 | 1.000 |
| 1 3/8" | 6 | 1.1550 | 12 | 1.3150 | 8 | 1.233 |
| 1 1/2" | 6 | 1.4050 | 12 | 1.5810 | 8 | 1.492 |

CUSTOMER ASSISTANCE : customer@TorqBolt.com

#4/217, Deccan Bank Bldg,
R. R. Roy Road, Mumbai - 400 004,
Maharashtra, INDIA

Email: info@TorqBolt.com

Web: www.TorqBolt.com

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