TorqBolt Inc.

MATERIAL GRADE DATA SHEET

ASTM F594M

AUSTENITIC STAINLESS STEEL

BOLTING MATERIAL FOR GENERAL PURPOSE USE

ASTM F594M 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 aplication 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	UNS No.	Composition, % maximum except as shown								
Group 3		Carbon	Magnese	Phosphorus	Sulfur	Silicon	Chromium	Nickel	Copper	Molybdenum
321	S32100	0.08	2.00	0.045	0.030	1.00	17.0-19.0	9.0-12.0	-	-
347	S34700	0.08	2.00	0.045	0.030	1.00	17.0-19.0	9.0-13.0	-	-

Mechanical Properties

Alloy	Marking	Size	Proof Stress	Hardness
3	F594M	3/4" TO 1 1/2"	85 Ksi Min	B80 To C 32,

Heat Treatment

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

Tensil 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

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