

ASTM F568 12.9

ALLOY STEEL

BOLTING MATERIAL FOR STRUCTURAL PURPOSE

ASTM F568 Specification covers Grade 12.9 Bolts/Screws/Studs manufactured from quenched & tempered Alloy Steel within size range of M1.6 upto M100 & minimum Tensile Strength of 1220 Mpa. Caution is advised when considering the use of property class 12.9 products. The capabilities of the fastener manufacturer, as well as the anticipated service environment, should be carefully considered. Some environments may cause stress corrosion cracking of nonplated, as well as electroplated, products. The proof load is the maximum working load of the bolt which is at an acceptable level below the yield point, for a class 12.9 it normally 90% of yield and for 10.9 and under a figure of 60% of yield is normally used.

The class numbers tell you the strength of the bolt in question. A 12.9 has an ultimate tensile strength of 1200MPa and a yield strength 90% of ultimate.

Chemical Properties

C Max	P Max	S Max
0.31-0.65	0.045	0.045

Mechanical Properties

Yield strength Mpa min	Tensile strength Mpa min	Elongation % min	Reduction % min	Hardness BHN
1100	1220	8	35	38-44

Proof Load Values, kN

Nominal Product Diameter & Thread Pitch

	M16 X 0.35	M2 X 0.4	M2.5 X 0.45	M3 X 0.5	M3.5 X 0.6	M4 X 0.7	M5 X 0.8	M6 X 1	M8 X 1.25	M10 X 1.5	M12 X 1.75
Method 1	1.20	2.01	3.29	4.88	6.58	8.52	13.8	19.5	35.5	56.3	81.8
Method 2	1.40	2.28	3.73	5.53	7.13	9.66	15.6	22.1	40.3	63.8	92.7

M14 X 2	M16 X 2	M20 X 2.5	M24 X 3	M30 X 3.5	M36 X 4	M42 X 4.5	M48 X 5	M56 X 5.5	M64 X 6	M72 X 6
112	152	238	342	544	792	1090	1430	1970	2600	3360
127	173	270	388	617	899	1230	1620	2230	2850	3810

M80 X 6	M90 X 6	M100 X 6
4210	5420	6780
4770	6150	7690

Heat Treatment

Quenched & Tempered @ 425°C

CUSTOMER ASSISTANCE : customer@TorqBolt.com