

ASTM F568 10.9.3

WEATHERING STEEL

BOLTING MATERIAL FOR STRUCTURAL PURPOSE

ASTM F568 defines materials used for manufacturing a broad category of fasteners with a wide variety of materials strengths. All metric fasteners are made using materials that are specified in ASTM F568. Some classes of bolts in the F568 family that are essentially equivalent to some common types of structural bolts are the following: Class 10.9.3 mechanical properties are essentially the same as A490 Type 3, a weathering steel.

Chemical Properties

Alloy	C	Mn Min	P Max	S Max	Si Max	Cr Min	Ni Min	Mo Min	V	Cu Min
10.9.3A	0.31-0.42	0.86-1.24	0.045	0.055	0.13-0.37	0.42-0.68	0.22-0.48	-	-	0.22-0.48
10.9.3B	0.36-0.50	0.67-0.93	0.06-0.125	0.055	0.25-0.55	0.47-0.83	0.47-0.83	0.07	-	0.17-0.43
10.9.3C	0.14-0.26	0.76-1.39	0.040	0.045	0.13-0.37	0.27-0.53	0.22-0.53	-	0.010	0.17-0.53
10.9.3D	0.14-0.26	0.36-1.24	0.045	0.055	0.20-0.55	0.45-1.05	0.47-0.83	0.11	-	0.27-0.53
10.9.3E	0.18-0.27	0.56-1.04	0.045	0.045	0.13-0.37	0.55-0.95	0.27-0.63	-	-	0.27-0.63
10.9.3F	0.19-0.26	0.86-1.24	0.045	0.045	0.13-0.37	0.42-0.68	0.17-0.43	-	-	0.17-0.43

Mechanical Properties

Alloy	Yield strength	Tensile strength	Elongation	Reduction	Hardness
	Mpa	Mpa	%	%	BHN
	min	min	min	min	
10.9.3A	940	1040	9	35	33-39
10.9.3B	940	1040	9	35	33-39
10.9.3C	940	1040	9	35	33-39
10.9.3D	940	1040	9	35	33-39
10.9.3E	940	1040	9	35	33-39
10.9.3F	940	1040	9	35	33-39

Proof Load Values, kN

Nominal Product Diameter & Thread Pitch

	M5 X 0.8	M6 X 1	M8 X 1.25	M10 X 1.5	M12 X 1.75	M14 X 2	M16 X 2	M20 X 2.5	M22 X 2.5	M24 X 3	M27 X 3
Method 1	11.8	16.7	30.4	48.1	70.0	95.5	130	203	251	293	381
Method 2	13.3	18.9	34.4	54.5	79.2	108	148	230	285	332	431

M30 X 3.5	M36 X 4	M42 X 4.5	M48 X 5	M56 X 5.5	M64 X 6	M72 X 6	M80 X 6	M90 X 6	M100 X 6
466	678	930	1220	1680	2220	2870	3600	4640	5800
527	763	1050	1380	1910	2520	3250	4080	5250	6570

Heat Treatment

Quenched & Tempered @ 425°C

CUSTOMER ASSISTANCE : customer@TorqBolt.com