

Stud Bolt Technical Information

Grades of Alloy Steel for Stud Bolts & Nuts



Milsons offer a range of B7, B8M, and L7 studs in diameters ranging from 1/2" to 2-1/2". These are widely used in the Petrochemical Industry to bolt flanges in high and low temperature environments. We offer a cut to measure service to allow maximum flexibility with your stud length – simply tell us the length you require, and we will make it happen. Furthermore, we also can get our stud bolt finished in Yellow Zinc, Micron 25 Yellow Zinc, Galv as required. Size Range: 1/2" – 2-1/2"

Finish Options:

- Plain
- Yellow Zinc (Gold Passivated)
- Micron 25 Yellow Zinc
- Galvanised

	Stud Bolts			Nuts		
Marking Symbol Grade	B7	L7	B8M CLASS 2	2H	7	8M
Temperature Range	Min: -30°C Max: 400°C	Min: -100°C Max: -30°C	Min: -250°C Max: 600°C	Min: -30°C Max: 400°C	Min: -100°C Max: 565°C	Min: -250°C Max: 600°C
Material Specification	ASTMA193/ A193M AISI 4140	ASTMA320/ A320M AISI 4140	ASTM- 193/A193M AISI Type 316	ASTMA194/ A194M Carbon Steel	ASTMA194/ A194M 4140	ASTMA194/ A194M AISI Type 316
Chemical Composition						
Carbon	0.37-0.49	0.38-0.48	0.08 max	0.40 min	0.37-0.49	0.08 max
Silicon	0.15-0.35	0.15-0.35	1.00 max	0.40 max	0.15-0.35	1.00 max
Manganese	0.65-1.10	0.75-1.00	2.00 max	1.00 max	0.65-1.10	2.00 max
Nickel			10.00-14.00			10.00-14.00
Chromium	0.75-1.20	0.80-1.10	16.00-18.00		0.75-1.20	16.00-18.00
Molybdenum	0.15-0.25	0.15-0.25	2.00-3.00		0.15-0.25	2.00-3.00
Vanadium						
Sulphur	0.040 max	0.040 max	0.030 max	0.050 max	0.040 max	0.030 max
Phosphorus	0.035 max	0.035 max	0.045 max	0.040 max	0.035 max	0.045 max
Mechanical Properties						
Limiting Ruling Section	2.1/2" and under	2.1/2" and under	-	1.1/2" and under	1.1/2" and under	1.1/2" and under
Minimum Tensile Strength	860Mpa	860Mpa	515Mpa			
Yield Strength Min. 0.2% Offset	720Mpa	725Mpa	205Mpav			
Minimum Elongation in 4D%	16	16	30			
Minimum Reduction of Area%	50	50	50			
Brinell Hardness			223HB or 96HRB	248-327HB	248-327HB	126-300HB
Brinell Hardness (after Treatment)				179HB min	201HB min	

ⓘ The data provided in this document is for general guidance only and should not be solely relied upon when working to stringent specifications. We recommend consulting with qualified experts regarding any technical queries. This information may change without written notice.