WESTFIELD FASTENERS

Search Facility

Bolts and Machine Screws - Metric

Metric Nuts

Metric Washers

UNC Bolts, Nuts and Washers

UNF Bolts, Nuts and Washers

Hose Clips & Hose Clamps

Wood Screws

Self Tapping Screws

Self Drilling Screws

Pins and Clips

Marine Hardware

Strength Specifications of Metric Threaded Fasteners

The following table describes the strength specifications for the different property classes of metric steel bolts, screws and studs:

Property Class	Nominal Size Range (mm)	Proof Strength (MPa)	Yield Strength, min(MPa)	Tensile Strength, min(MPa)	Material
4.6	5-100	225	240	400	Low or medium carbon steel
4.8	1.6-16	310	340	420	Low or medium carbon steel; fully or partially annealed
5.8	5-24	380	420	520	Low or medium carbon steel; cold worked
8.8	Under 16 (incl.)	660	640	800	Medium carbon steel; quenched and tempered
8.8	17-72	580	660	830	Medium carbon steel; quenched and tempered
9.8	1.6-16	650	720	900	Medium carbon steel; quenched and tempered
10.9	5-100	830	940	1040	Alloy steel; quenched and tempered
12.9	1.6-100	970	1100	1220	Alloy steel; quenched and tempered

The **tensile strength** or ultimate tensile strength can be defined as the maximum amount of tensile stress that a component can withstand before it fractures.

Thread Lock & Adhesive

Metal Anchors

Reference Section

View Your Order

The **proof strength** can be defined as the maximum amount of tensile stress that a component can withstand before it begins to exhibit plastic or permanent deformation on release of the stress applied.

The **yield strength** can be defined as the amount of tensile stress that a component can withstand when it exhibits 0.2% plastic or permanent deformation.

The **property class** is normally stamped on the head of the bolt. The two figures indicate the tensile and yield strengths of the bolt or screw.

In the case of a 8.8 grade bolt the first figure signifies that the Tensile Strength is at least 800MPa. The second figure signifies that the fastener will begin to yield at 80% of the Ultimate Tensile Strength, i.e. at least 640MPa.

Strength Specifications of Stainless Steel Threaded Fasteners

The following table, taken from BS EN ISO 3506, describes the strength characteristics of different grades of austenitic stainless steel bolts, screws and studs:

Steel Grade	Property Class	Nominal Size Range (mm)	Tensile Strength, min(MPa)	0.2% Proof Stress (MPa)
A1,A2,A3,A4,A5	50	Under 39 (incl.)	500	210
	70	Under 24 (incl.)	700	450
	80	Under 24 (incl.)	800	600

Stainless steel fasteners do not exhibit a yield stress. In this case 0.2% proof stress is used instead, and can be defined as the tensile stress required for the component to exhibit elongation of 0.2%.

Delivery
Payment Methods
Returns Policy
Privacy Policy

Conditions of Sale
Contact Us
Product Sitemap

Westfield Fasteners Limited is a company registered in England and Wales with company number 07215583.
Registered Address: Westfield Fasteners Limited - Westfield Road - Long Crendon - Aylesbury - HP18 9EW - UK
email: enquiries@westfieldfasteners.co.uk