

Bolt Property Classes

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[Fasteners/Engineering Reference/Bolt Property Classes](#)

[Engineering Reference](#) · Bolt Property Classes

10 catalogued sizes, dimensioned to ISO 898-1. Pick any row and the technical drawing redraws to it.

Bolt Property Classes to ISO 898-1: the full dimensional table is reproduced below. 10 sizes are held in the table below, and the technical drawing redraws to whichever row you select.

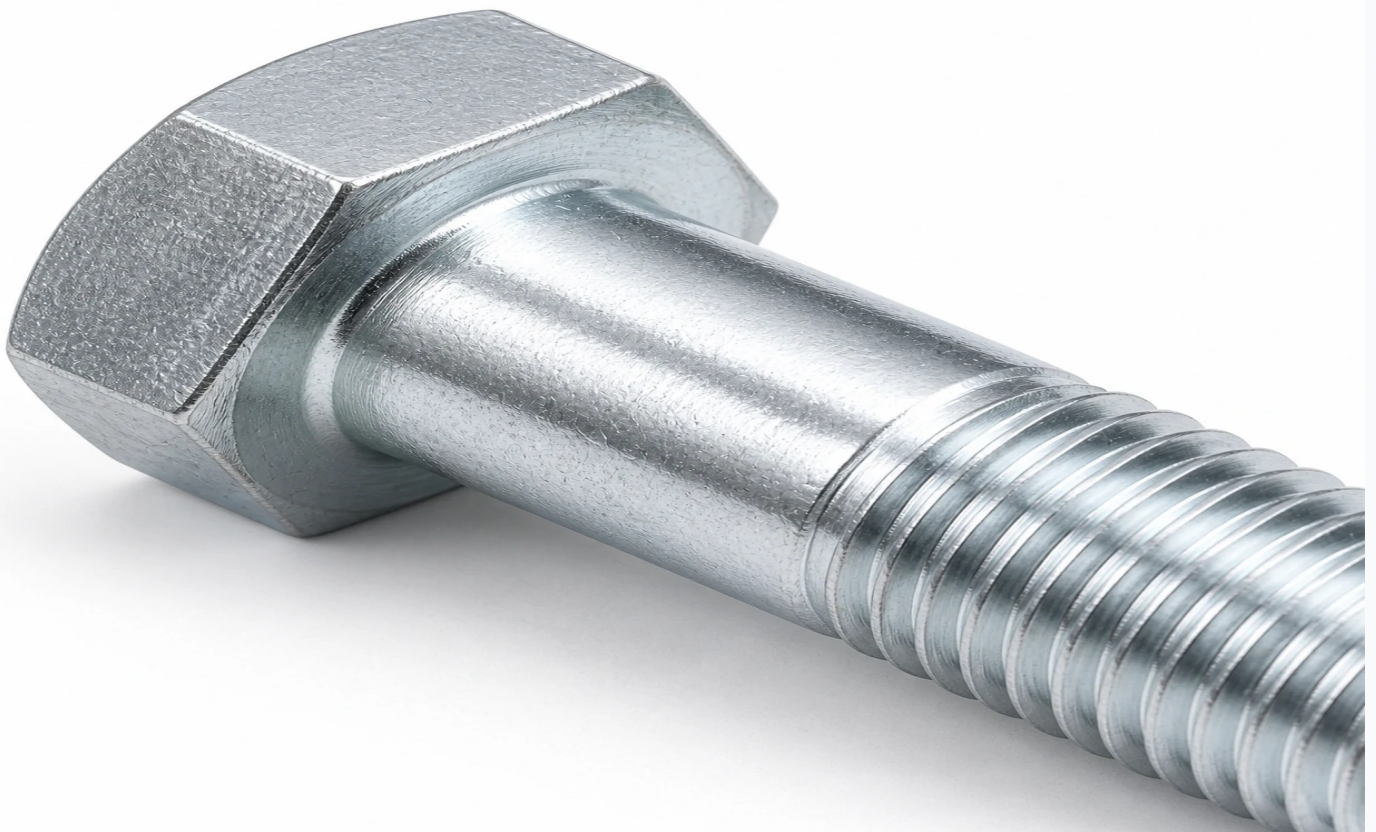
Standard

ISO 898-1

Catalogued sizes

10

Dimensions are nominal values from the governing standard. Confirm the tolerance class for your application before ordering.



Manufactured to ISO 898-1, Bolt Property Classes are engineering reference supplied by Engineering Hardware. The dimensional data, materials and selection notes are summarized here.

About This Reference

This is an engineering reference table for bolt property classes based on ISO 898-1. Use it alongside our fastener catalog when selecting and specifying parts.

Reference Data (ISO 898-1)

Property class	Material	Tensile strength Rm (MPa)	Yield strength Re min (MPa)	Yield ratio	Diameter range	Application	Reference standard
4.6	Low-carbon steel	400	240	0.6	M5~M100	General purpose	ISO 898-1
4.8	Low-carbon steel (annealed)	420	340	0.8	M1.6~M16	General purpose	ISO 898-1
5.6	Low/medium-carbon steel	500	300	0.6	M5~M100	General purpose	ISO 898-1
5.8	Low/medium-carbon steel	520	420	0.8	M1.6~M24	General purpose	ISO 898-1
6.8	Low/medium-carbon steel	600	480	0.8	M1.6~M24	General purpose	ISO 898-1
8.8	Medium-carbon steel (quenched & tempered)	830	660	0.8	M16~M72	High strength, most common	ISO 898-1
8.8	Low-alloy steel (quenched & tempered)	800	640	0.8	M1.6~M16	High strength, most common	ISO 898-1
9.8	Medium-carbon steel	900	720	0.8	M1.6~M16	High strength	ISO 898-1
10.9	Alloy steel (quenched & tempered)	1040	940	0.9	M5~M100	Ultra-high strength	ISO 898-1
12.9	Alloy steel (quenched & tempered)	1220	1100	0.9	M1.6~M100	Very high strength, common for socket screws	ISO 898-1

Inside the plant

Manufactured in our own plant

This part is cold-formed, threaded, heat-treated and finished in-house. The stages below are where its class and finish are actually decided.



1.

01

Cold heading

Wire rod is drawn to size and cold-formed into blanks. Forming rather than cutting keeps the grain flow continuous around the head, which is where a bolt is most likely to fail.

Head dimensions and under-head radius checked at set-up and per shift.



2.

02

Thread rolling

Threads are rolled between hardened dies rather than cut. Rolled threads are stronger in fatigue than cut threads and hold pitch and flank angle far more consistently across a batch.

Go / no-go ring gauges to ISO 965 tolerance class 6g.

3.



03

Heat treatment

Quench-and-temper brings carbon and alloy steel to the property class ordered — 8.8, 10.9 or 12.9 — with the furnace charge tracked so a finished lot can be traced back to it.

Core hardness and tensile tested per lot to ISO 898-1.

4.



04

Surface treatment

Zinc, zinc-nickel, hot-dip galvanizing, black oxide, phosphate and Dacromet, selected against the service environment rather than against the price list.

Coating thickness and neutral salt spray hours to ISO 9227.

Frequently Asked Questions

What does the Bolt Property Classes reference table cover?

Bolt Property Classes is an engineering reference table aligned with ISO 898-1. Use the values alongside our fastener catalog when selecting and specifying parts.

How do I request a quotation?

Use the parametric drawing on this page to set the exact configuration (size, material, finish) and click "Request this configuration" — a specialist from Engineering Hardware will respond within one business day.

More Engineering Reference

[← PreviousMetric Thread DimensionsISO 724 / ISO 965Next →Tightening Torque ReferenceISO 898 \(reference\)](#)