

What Are Stud / Threaded Rod Used For?

Engineering Hardware & Fasteners · engineeringhardware.com/applications/cad-svg-154-stud

Fasteners Bolts Stud / Threaded Rod — ISO / DIN (Series 154)/Applications

Bolts - ISO / DIN - Application guide

Typical applications, the industries that specify stud / threaded rod, and how to choose the right size, material and finish for the joint.

Stud / Threaded Rods are used for clamping a joint from both ends where a headed bolt cannot be used, tightened by the nuts rather than by the fastener itself. They are manufactured to ISO / DIN, and the choice of size, property class and finish is driven by the load in the joint and the environment it sits in.

Primary duty

Clamping a joint from both ends where a headed bolt cannot be used, tightened by the nuts rather than by the fastener itself

Governing standard

ISO / DIN

Thread size range

M6 to M36

Category

Bolts

Application notes are general engineering guidance. Verify the property class and any approval requirement against your own design calculation.



Stud / Threaded Rods are selected when an assembly calls for clamping a joint from both ends where a headed bolt cannot be used, tightened by the nuts rather than by the fastener itself. This application guide to the ISO / DIN type covers concrete end-uses, the specification checklist, correct installation, and where an alternative fastener performs better. Stocked across roughly M6 to M36, they cover general to heavy-duty work.

Typical Applications for Stud / Threaded Rod — ISO / DIN (Series 154)

The most common settings where these are specified:

- **Automotive & transport:** chassis, suspension and powertrain mounting points subject to vibration.
- **Heavy machinery:** securing gearboxes, frames and guarding on plant that sees shock loads.
- **Energy & infrastructure:** tower, pylon and pipework supports exposed to weather and long service life.
- **General machine building:** fastening covers, brackets, motors and sub-assemblies on production equipment.
- **Maintenance & repair (MRO):** a stocked size for servicing existing plant where the original fastener spec must be matched.

How to Specify Stud / Threaded Rod — ISO / DIN (Series 154) for Your Application

- **Size:** Match the nominal size to the mating thread or hole. This product spans M6–M36; check the full table below for the exact dimensions of each size.
- **Strength class:** Choose the property class (e.g. 8.8, 10.9, 12.9 or A2/A4 stainless) for the load and environment, and tighten to the matching torque so the joint relies on preload, not friction.
- **Environment:** For damp, coastal or chemical exposure prefer A4/316 stainless or a suitable coating; indoors, plated steel or A2 is usually sufficient.
- **Standard:** This product is supplied to ISO / DIN. Quoting the standard on your order guarantees interchangeable dimensions between suppliers.

Installation & Assembly Practice

- Tighten to the torque for the size and property class with a calibrated wrench — the joint is held by preload, not by the thread friction alone.
- Ensure at least one full thread projects beyond the nut after tightening, and never re-use a bolt that has been tightened into yield.
- Under slotted or oversized holes, fit a hardened washer so the preload does not relax into the hole edge.

Common Selection Mistakes with Stud / Threaded Rod — ISO / DIN (Series 154)

- Specifying class 12.9 "to be safe" in a corrosive environment — high classes are more sensitive to hydrogen embrittlement and stress corrosion; 8.8 hot-dip galvanized often outlasts them outdoors.
- Choosing a length that puts the shear plane through the threaded portion when a plain shank (partially threaded bolt) was available.
- Mixing stainless bolts with plated-steel nuts: the joint loses its corrosion logic and can gall or seize.

Where Stud / Threaded Rod — ISO / DIN (Series 154) Are Not the Right Choice

Not for permanent joints that will never be opened (a rivet or weld is cheaper), and not where the head must sit flush — use a countersunk screw instead.

Technical Drawing

Customize the parameters below — every spec field is editable, and the drawing redraws to match the values you choose. Changing the size will snap the other fields to that size's standard values; you can then override any individual value.

Sends the selected values to the quote form below.

Request a Quote

The form below follows the current technical drawing configuration. Change the drawing values above and the request details update automatically.

Dimensions & Specifications (ISO / DIN)

Thread size	Pitch (mm)	Length L (mm)	Engagement depth bm (mm)	Material	Reference standard
M6	1.0	50	8	Cl. 8.8 alloy steel	DIN 939 / GB/T 901
M8	1.25	60	10	Cl. 8.8 alloy steel	DIN 939 / GB/T 901
M10	1.5	80	15	Cl. 8.8 alloy steel	DIN 939 / GB/T 901
M12	1.75	100	18	Cl. 8.8 alloy steel	DIN 939 / GB/T 901
M14	2.0	120	21	Cl. 8.8 alloy steel	DIN 939 / GB/T 901
M16	2.0	150	24	Cl. 8.8 alloy steel	DIN 939 / GB/T 901
M20	2.5	180	30	Cl. 8.8 alloy steel	DIN 939 / GB/T 901
M24	3.0	200	36	Cl. 8.8 alloy steel	DIN 939 / GB/T 901
M30	3.5	240	45	Cl. 8.8 alloy steel	DIN 939 / GB/T 901
M36	4.0	280	54	Cl. 8.8 alloy steel	DIN 939 / GB/T 901

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

Which industries use Stud / Threaded Rod — ISO / DIN (Series 154)?

They are commonly specified in heavy machinery, energy & infrastructure and general machine building, among other sectors.

How do I choose the right size of Stud / Threaded Rod — ISO / DIN (Series 154)?

Match the nominal size to the mating thread or hole. This product is available from M6 to M36; the full dimension table on this page lists each size.

How tight should Stud / Threaded Rod — ISO / DIN (Series 154) be torqued?

Tighten to the torque for the size and property class so the joint is held by bolt preload. The size pages and torque reference table give recommended values; use a calibrated torque wrench for anything structural.

What material should Stud / Threaded Rod — ISO / DIN (Series 154) be for outdoor use?

For damp, coastal or chemical environments specify A4 (316) stainless or a suitably coated steel. For indoor or dry use, A2 (304) stainless or zinc-plated steel is normally adequate.

Can I get a quote for Stud / Threaded Rod — ISO / DIN (Series 154) in the size and material I need?

Yes. Use the technical drawing and quote form on this page to set the size and options, then send the exact configuration to our team for pricing and lead time.

Related Pages

Product page: [Stud / Threaded Rod — ISO / DIN \(Series 154\) — specifications & sizes](#)

Stud / Threaded Rod — ISO / DIN (Series 154) Specification Guides

- [M6 Stud / Threaded Rod — ISO / DIN \(Series 154\) size guide](#)
- [A4 stainless Stud / Threaded Rod — ISO / DIN \(Series 154\)](#)

Related Fastener Applications

- [Carriage Bolts applications](#)
- [Clamping Handle Screw \(Long\) — DIN 6336 / GN 313 \(Series 044\) applications](#)
- [Clamping Handle Screw \(Medium\) — DIN 6336 / GN 313 \(Series 043\) applications](#)
- [Clamping Handle Screw \(Short\) — DIN 6336 / GN 313 \(Series 042\) applications](#)
- [Equal-End Stud Bolt — GB/T 901 / DIN 939 \(Series 093\) applications](#)
- [Eye Bolts applications](#)