

What Are Studs & Threaded Rods Used For?

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[Fasteners](#), [Bolts](#), [Studs & Threaded Rods](#) Applications

[Bolts](#) · [DIN 939 / DIN 975](#) · [Application guide](#)

Typical applications, the industries that specify studs & threaded rods, and how to choose the right size, material and finish for the joint.

Studs & 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 DIN 939 / DIN 975, 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

DIN 939 / DIN 975

Thread size range

M4 to M48

Category

Bolts

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



Application guide for Studs & Threaded Rods to DIN 939 / DIN 975. The core duty of the type is clamping a joint from both ends where a headed bolt cannot be used, tightened by the nuts rather than by the fastener itself. The typical industries, the how-to-specify checklist, assembly practice and the exclusion cases are set out below. Stocked across roughly M4 to M48, they cover general to heavy-duty work.

Typical Applications for Studs & Threaded Rods

The most common settings where these are specified:

- **Fabrication & metalwork:** bench and on-site assembly of steel frames, enclosures and weldments.
- **Structural steel:** bolting beams, base plates and bracing where a defined preload and property class are required.
- **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.

How to Specify Studs & Threaded Rods for Your Application

- **Size:** Match the nominal size to the mating thread or hole. This product spans M4–M48; 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 DIN 939 / DIN 975. 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 Studs & Threaded Rods

- 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 Studs & Threaded Rods 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 (DIN 939 / DIN 975)

Thread size	Pitch (mm)	Point type	Common lengths (mm)	Reference standard	Notes
M4	0.7	M4	10~100	DIN 939	Stud, equal thread both ends
M5	0.8	M5	10~120	DIN 939	Stud, equal thread both ends
M6	1.0	M6	12~160	DIN 939	Stud, equal thread both ends
M8	1.25	M8	16~200	DIN 939	Stud, equal thread both ends
M10	1.5	M10	20~250	DIN 939	Stud, equal thread both ends
M12	1.75	M12	25~300	DIN 939	Stud, equal thread both ends
M14	2.0	M14	30~300	DIN 939	Stud, equal thread both ends
M16	2.0	M16	35~300	DIN 939	Stud, equal thread both ends
M18	2.5	M18	40~300	DIN 939	Stud, equal thread both ends
M20	2.5	M20	45~300	DIN 939	Stud, equal thread both ends
M22	2.5	M22	50~300	DIN 939	Stud, equal thread both ends
M24	3.0	M24	50~300	DIN 939	Stud, equal thread both ends
M27	3.0	M27	55~300	DIN 939	Stud, equal thread both ends
M30	3.5	M30	60~300	DIN 939	Stud, equal thread both ends
M36	4.0	M36	70~300	DIN 939	Stud, equal thread both ends
M42	4.5	M42	80~300	DIN 940	Stud, equal thread both ends
M48	5.0	M48	90~300	DIN 940	Stud, equal thread both ends
M4	0.7	Fully threaded	1000/2000/3000	DIN 975	Fully threaded rod, cut to length
M5	0.8	Fully threaded	1000/2000/3000	DIN 975	Fully threaded rod, cut to length
M6	1.0	Fully threaded	1000/2000/3000	DIN 975	Fully threaded rod, cut to length
M8	1.25	Fully threaded	1000/2000/3000	DIN 975	Fully threaded rod, cut to length
M10	1.5	Fully threaded	1000/2000/3000	DIN 975	Fully threaded rod, cut to length
M12	1.75	Fully threaded	1000/2000/3000	DIN 975	Fully threaded rod, cut to length
M16	2.0	Fully threaded	1000/2000/3000	DIN 975	Fully threaded rod, cut to length

Thread size	Pitch (mm)	Point type	Common lengths (mm)	Reference standard	Notes
M20	2.5	Fully threaded	1000/2000/3000	DIN 975	Fully threaded rod, cut to length
M24	3.0	Fully threaded	1000/2000/3000	DIN 975	Fully threaded rod, cut to length
M30	3.5	Fully threaded	1000/2000/3000	DIN 975	Fully threaded rod, cut to length

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.



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

How tight should Studs & Threaded Rods 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 Studs & Threaded Rods 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.

Are Studs & Threaded Rods made to a recognized standard?

Yes — they are manufactured to DIN 939 / DIN 975, so dimensions are interchangeable between suppliers when you quote the standard on your order.

What are Studs & Threaded Rods 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 supplied to DIN 939 / DIN 975.

Can I get a quote for Studs & Threaded Rods 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: [Studs & Threaded Rods — specifications & sizes](#)

Studs & Threaded Rods Specification Guides

- [M4 Studs & Threaded Rods size guide](#)
- [A4 stainless Studs & Threaded Rods](#)

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](#)