Data sheet DIN 976-1 — threaded rods and studs

Dimensions in mm. DIN 976-1 covers metric threaded rods with continuous thread: form A are rods of 1,000, 2,000 or 3,000 mm with sawn ends, form B are studs cut to length with chamfered ends. Pitch to ISO 261 (coarse thread), stress area As to ISO 898-1. Breaking load = As × minimum tensile strength of the class; it is the load at which the rod breaks, not the allowable load (apply a safety factor; for anchoring follow the anchor data sheet).

Sizes, weight and breaking load

size	pitch P	As (mm²)	weight steel (kg/m)	breaking load 4.8 (kN)	breaking load 8.8 (kN)	breaking load A2-70 / A4-70 (kN)
M3	0.5	5.03	0.045	2.1	4	3.5
M4	0.7	8.78	0.08	3.7	7	6.1
M5	0.8	14.2	0.125	6	11.4	9.9
M6	1	20.1	0.185	8.4	16.1	14.1
M8	1.25	36.6	0.33	15.4	29.3	25.6
M10	1.5	58	0.52	24.4	46.4	40.6
M12	1.75	84.3	0.77	35.4	67.4	59
M14	2	115	1.05	48.3	92	80.5
M16	2	157	1.38	65.9	125.6	109.9
M18	2.5	192	1.73	80.6	159.4	134.4
M20	2.5	245	2.15	102.9	203.3	171.5
M22	2.5	303	2.68	127.3	251.5	212.1
M24	3	353	3.14	148.3	293	247.1
M27	3	459	4.07	192.8	381	–
M30	3.5	561	4.92	235.6	465.6	–
M33	3.5	694	6.05	291.5	576	–
M36	4	817	7.2	343.1	678.1	–

Materials and classes

4.8	steel, tensile strength 420 N/mm², yield 340 N/mm² (ISO 898-1); zinc plated or plain
8.8	steel, tensile strength 800 N/mm² (830 above M16), yield 640 N/mm²; zinc plated or hot-dip galvanised
A2-70	stainless steel AISI 304, tensile strength 700 N/mm², 0.2 % proof stress 450 N/mm² (ISO 3506-1), up to M24; larger sizes class 50 (500 N/mm²)
A4-70 / A4-80	stainless steel AISI 316 (seawater and chloride resistant), tensile strength 700 and 800 N/mm²
brass CuZn	non-magnetic, conductive, corrosion resistant indoors and in water; low strength (approx. 360 N/mm²)

Nuts and coupling

- Hexagon nut DIN 934 / ISO 4032 and washer DIN 125 in the same material and class (8.8 → nut class 8).
- Hot-dip galvanised rods carry a thicker zinc layer: use nuts with oversize thread (ISO 10684, tolerance 6AZ), otherwise the nut seizes.
- Coupling nut DIN 6334 (height 3 × d) joins two rods in line; screw each rod in at least 1.5 × d.
- Stainless on stainless: tighten gently and use anti-seize paste to avoid galling.
- Cutting: run a nut on first, cut with a hacksaw or cutting disc, deburr and run the nut off so the thread is clean again.

Chemical anchoring (guide values)

size	drill diameter	embedment depth
M8	10 mm	80 mm
M10	12 mm	90 mm
M12	14 mm	110 mm
M16	18 mm	125 mm
M20	24 mm	170 mm
M24	28 mm	210 mm