Hastelloy C-276 Square Bar (UNS N10276 / W.Nr. 2.4819) — Technical Data Sheet

Square Bar supplied to ASTM B574 and ASME SB574 for UNS N10276 — the standard sets one solution-annealed condition for rod and bar across eleven grades, with DIN 17752, ISO 9723 and VdTÜV 400 covering European and international orders.

Chemical Composition — ASTM B574 limits, UNS N10276

Element	Content
Nickel (Ni)	57.0% min. (balance)
Molybdenum (Mo)	15.0–17.0%
Chromium (Cr)	14.5–16.5%
Tungsten (W)	3.0–4.5%
Iron (Fe)	4.0–7.0%
Cobalt (Co)	2.50% max.
Manganese (Mn)	1.00% max.
Vanadium (V)	0.35% max.
Silicon (Si)	0.08% max.
Carbon (C)	0.010% max.
Phosphorus (P)	0.040% max.
Sulphur (S)	0.030% max.

Minimum Mechanical Properties (ASTM B574, solution annealed)

Condition and Grade	Tensile Strength, min.	Yield Strength (0.2%), min.	Elongation, min.
Solution Annealed — UNS N10276	≥690 MPa (100 ksi)	≥283 MPa (41 ksi)	40%

Physical Properties (Approx.)

Property	Value
Alloy	Hastelloy C-276
UNS	N10276
Werkstoff	2.4819
Density	Approx. 8.89 g/cm³
Melting Range	Approx. 1325–1370 °C
Elastic Modulus	Approx. 205 GPa
Thermal Conductivity	Approx. 10.2 W/m·°C at 20 °C
Specific Heat	Approx. 427 J/kg·°C
Expansion Coefficient	Approx. 11.2 µm/m·°C (20–100 °C)
Electrical Resistivity	Approx. 1.30 µΩ·m at 20 °C
Alloy Type	Nickel-molybdenum-chromium with tungsten
Strengthening	Solid solution and cold work
Magnetic Behaviour	Practically non-magnetic at ambient temperature

Standards and Designations

Standard	Product or Application
ASTM B574 / ASME SB574	Nickel-chromium-molybdenum-tungsten rod and bar, UNS N10276 among eleven grades
DIN 17752 / ISO 9723	German and international bar documents
VdTÜV 400 / NACE MR0175	German data sheet and sour-service qualification

Heat Treatment (solution anneal and release)

Condition	Typical Treatment
Solution Annealed	Held between 1120 and 1160 °C, then water quenched to dissolve the precipitates that follow slow cooling
Hot-Worked	Delivered as-rolled or as-forged, with the anneal agreed where the order calls for it
Cold-Drawn	Drawn after annealing, with the reduction recorded so the higher yield strength is documented
Slow-Cool Hazard	Cooling slowly through the 650–1090 °C band precipitates µ and P phases, so a rapid quench follows every anneal
Sour-Service Release	NACE MR0175 orders carry a per-lot hardness record against the 35 HRC ceiling

Surface Finishes (Square Bar)

Surface Condition	Typical Use
Hot-Worked	As-rolled or as-forged surface on this square bar, for parts that will be machined all over.
Solution Annealed and Pickled	Annealing followed by acid descaling leaves this square bar scale-free for wet chlorine and reducing-acid duty.
Rough Turned	A turned surface on this square bar where the finishing cut is left to your shop.

Typical Supply Dimensions — Square Bar

Product Form	Typical Supply	Length
Square Bar	10–150 mm	Cut to length or random
Hot-Worked Square Bar	25–150 mm	Cut to length or random
Annealed Square Bar	10–150 mm	Cut to length
Peeled Square Bar	20–100 mm	Cut to length
Cold-Drawn Square Bar	10–80 mm	Cut to length
Forged Square Bar	100–300 mm	Cut to length
Custom Square Bar	To drawing	Custom

Values are for reference; the mill test certificate prevails for final acceptance. Designations, heat-treatment conditions, and surface finishes are confirmed at quotation.