Inconel 600 Forged Bar (UNS N06600) — Technical Data Sheet

Forged Bar supplied to ASTM B166 / ASME SB166 — values are minimum requirements for the annealed / as-worked condition per the governing specification.

Chemical Composition (ASTM B166)

Element	Content
Nickel (Ni)	72.0% min.
Chromium (Cr)	14.0–17.0%
Iron (Fe)	6.0–10.0%
Carbon (C)	0.15% max.
Manganese (Mn)	1.00% max.
Silicon (Si)	0.50% max.
Sulfur (S)	0.015% max.
Copper (Cu)	0.50% max.

Minimum Room-Temperature Mechanical Properties

Condition	Tensile Strength	Yield Strength, 0.2% Offset	Elongation
Cold-worked / hot-worked, annealed	≥80 ksi (550 MPa)	≥35 ksi (240 MPa)	≥30%
Hot-worked, as worked	≥85–95 ksi (585–655 MPa)	≥35–45 ksi (240–310 MPa)	≥20–30%
Cold-worked, as worked	≥105–120 ksi (725–825 MPa)	≥80–90 ksi (550–620 MPa)	≥7–12%

Physical Properties (Approx.)

Property	Value
Alloy	Inconel 600
UNS	N06600
Werkstoff	2.4816
Density	Approx. 8.47 g/cm³
Melting Range	Approx. 1370–1413°C
Alloy Type	Nickel-chromium-iron
Strengthening	Solid solution / cold work

Standards and Designations

Standard	Product / Application
ASTM B166	Nickel-chromium-iron alloy rod, bar and wire
ASME SB166	ASME specification for pressure equipment applications
SAE AMS 5665	Nickel alloy 600 bars, forgings and rings
UNS N06600	Material designation for Inconel 600
W.Nr. 2.4816	European material number
DIN 17742	Nickel alloy wrought products, chemistry
DIN 17750 / 17754	Related nickel alloy product specifications
BS 3076 NA14	Nickel alloy bars and sections
ISO 9723	Nickel and nickel alloy bar

Surface Finishes

Surface Condition	Typical Characteristics / Applications
Hot Finished	Supplied in the as-hot-worked condition; suitable for general industrial applications and subsequent machining
Cold Drawn	Improved dimensional accuracy and surface finish, with increased strength from cold working
Bright Finished	Smooth, bright surface with improved dimensional control; suitable for applications requiring a cleaner surface appearance
Peeled	Machined surface with controlled diameter and improved surface uniformity, typically supplied for further machining
Centerless Ground	Precision-ground surface with close dimensional tolerances and consistent diameter
Polished	Fine surface finish for applications requiring reduced surface roughness

Typical Supply Dimensions — Forged Bar

Product Form	Typical Supply	Length
Forged Round Bar	100–500 mm dia.	Custom
Forged Square Bar	100–300 mm	Custom
Forged Flat Bar	20–150 mm thick × 50–400 mm wide	Custom
Rough-Turned Forged Bar	100–500 mm dia.	Custom
Forged Block	To drawing	Custom
Forging Stock	100–400 mm sections	Custom
Upset Forged Bar	To drawing	Custom
Custom Forged Section	To drawing	Custom

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