

Inconel 625 Plate and Sheet — Technical Data Sheet

UNS N06625 hot-rolled and cold-rolled plate, sheet, and strip to ASTM B443 / ASME SB443 — minimum room-temperature values per the governing standard.

Chemical Composition (ASTM B443)

Element	Content
Nickel (Ni)	Balance
Chromium (Cr)	20.0–23.0%
Molybdenum (Mo)	8.0–10.0%
Niobium + Tantalum (Nb + Ta)	3.15–4.15%
Iron (Fe)	5.00% max.
Cobalt (Co)	1.00% max.
Carbon (C)	0.10% max.
Manganese (Mn)	0.50% max.
Silicon (Si)	0.50% max.
Phosphorus (P)	0.015% max.
Sulfur (S)	0.015% max.
Aluminum (Al)	0.40% max.
Titanium (Ti)	0.40% max.

Minimum Room-Temperature Mechanical Properties

Product Form	Standard	Condition	Tensile Strength	Yield Strength, 0.2% Offset	Elongation
Cold-rolled sheet and strip	ASTM B443	Grade 1 (annealed ≥ 871 °C)	≥ 827 MPa (120 ksi)	≥ 414 MPa (60 ksi)	≥ 30%
Hot-rolled sheet and hot-rolled plate up to 70 mm	ASTM B443	Grade 1 (annealed)	≥ 758 MPa (110 ksi)	≥ 379 MPa (55 ksi)	≥ 30%
Cold-rolled plate up to 9.5 mm	ASTM B443	Grade 1 (annealed)	≥ 758 MPa (110 ksi)	≥ 379 MPa (55 ksi)	≥ 30%
Plate, sheet, and strip, all sizes	ASTM B443	Grade 2 (solution annealed ≥ 1093 °C)	≥ 690 MPa (100 ksi)	≥ 276 MPa (40 ksi)	≥ 30%

Physical Properties (Approx., annealed)

Property	Value
Density	8.44 g/cm³ (0.305 lb/in³)
Melting Range	1290–1350 °C (2350–2460 °F)
Elastic Modulus	205 GPa (29.8 × 10³ ksi)
Thermal Conductivity	9.8 W/m·°C at 20 °C
Expansion Coefficient	12.8 µm/m·°C (20–100 °C)
PREN (pitting resistance estimate)	Approx. 50–52
Alloy Type	Nickel-chromium-molybdenum, solid-solution strengthened

Product Classification by Thickness (ASTM B443)

Product	Thickness
Hot-rolled plate	3/16 in. (4.8 mm) and over
Cold-rolled plate	3/16 to 3/8 in. (4.8–9.5 mm), incl
Hot-rolled sheet	0.018–0.250 in. (0.46–6.4 mm), incl
Cold-rolled sheet	0.018–0.250 in. (0.46–6.4 mm), incl
Cold-rolled strip	0.005–0.250 in. (0.13–6.4 mm), incl

Standards and Designations

Standard / Designation	Product / Application
ASTM B443 / ASME SB443	Plate, sheet, and strip (Grade 1 / Grade 2)
ASTM B906	General requirements for flat-rolled nickel alloy product
SAE AMS 5599	Sheet, strip, and plate
DIN 17750	Nickel alloy flat product, W.Nr. 2.4856
EN 10095	Heat-resisting nickel alloy flat product (Europe)
ISO 6208	Nickel and nickel alloy plate, sheet, and strip
NACE MR0175 / ISO 15156	Sour-service qualification (reference)
VdTÜV 499	Pressure equipment approval (Europe)
UNS N06625 · W.Nr. 2.4856	Designations

Typical Supply Dimensions

Product Form	Typical Supply Range	Length
Hot-rolled plate	4.8–100 mm thick, widths 1000–2500 mm	Cut to length up to 6000 mm
Cold-rolled plate	4.8–9.5 mm thick, widths up to 1500 mm	Cut to length
Sheet	0.46–6.4 mm thick, widths 1000–1500 mm	2000 / 2440 / 2500 / 3000 mm
Strip and coil	0.13–6.4 mm thick, slit to width	Coil or cut length
Cut blanks	Circles, rings, profile-cut plate	To drawing

Surface Finishes

Surface Condition	Typical Use
Hot rolled, annealed & pickled	Standard plate finish for scrubbers, vessels, and ductwork
Cold rolled 2B / 2D	Smoother sheet surface for liners and visible fabrication
Bright annealed	Scale-free finish for clean service and high-temperature duty
No. 4 / hairline	Brushed finish where appearance is part of the specification
Polished	Reduced roughness for specialty liners and hygienic service

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

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