BH DÖVME METAL SANAYİ ve TİCARET LTD. ŞTİ.
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Grade	Code	UNS	Nickel Alloys
Incoloy 800	Alloy 800 (1.4876)	N08800	

Nickel Alloy Properties

Incoloy 800 / Alloy 800 is a Ni-Fe-Cr-based austenitic nickel alloy that provides resistance to oxidation, carburization and general corrosion at elevated temperatures. Its nickel content supports austenitic phase stability, while chromium improves oxidation resistance; titanium and aluminum additions contribute to structural stability at high temperatures. When long-term load carrying, creep resistance and stress-rupture strength at higher temperatures are critical, Incoloy 800H or 800HT should be evaluated instead of **Incoloy 800 / Alloy 800**.

Chemical Analysis (Incoloy 800 / Alloy 800)

Ni %	Cr %	C %	Fe %	Mn %	Si %	S %	Cu %	Al %	Ti %
30,00 – 35,00	19,00 – 23,00	0,10 max.	39,50 min.	1,50 max.	1,00 max.	0,015 max.	0,75 max.	0,15 – 0,60	0,15 – 0,60

Mechanical Properties (Solution Annealed)

Product form	Rp0.2, MPa	Rm, MPa	Elongation, %	Hardness, HB	Density, g/cm³
Round Bar / Bar	≥ 210	≥ 500	≥ 30	≤ 192*	8,00
Plate	≥ 210	≥ 500	≥ 30	≤ 192*	8,00

** Note: The ≤192 HB value is given as a general datasheet reference for 1.4876 / Alloy 800.*

Application Areas

Industry	Products
Heat treatment and industrial furnaces	Furnace baskets, furnace trays, furnace fixtures
Chemical and petrochemical	Heat exchangers, process piping systems, nitric acid service equipment
Petrochemical cracking processes	Cracker tubes, pigtail pipes, header/manifold components
Electrical heating and resistance systems	Heating element sheaths, resistance protection tubes, electrical heater sleeves
Power generation and nuclear	Steam generator tubes, high-temperature piping components, heat exchanger tubes
Pulp and process plants	Digester-liquor heaters, process heater tubes, heat-transfer equipment for chemical media
Oil refining / process cooling	Air-cooled heat exchangers, process-fluid cooler tubes, refinery heat-transfer equipment

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Description

Incoloy 800 / Alloy 800 can be readily formed and welded due to its austenitic structure; it can be welded by standard methods such as TIG, MIG and shielded metal arc welding. However, as it tends to work harden like other nickel alloys, sharp tools, rigid clamping and low-to-medium cutting speeds should be preferred in machining. Cold forming is possible, but intermediate annealing may be required after heavy deformation. Post-weld heat treatment is generally not mandatory; however, the welding procedure and filler metal selection should be carefully controlled for high-temperature or critical corrosion service.

Specification

Incoloy 800, Alloy 800, Nickel Alloy 800, UNS N08800, W.Nr. 1.4876, X10NiCrAlTi32-20

Standards

Product form	ASTM	AMS	Scope / description
Round Bar / Bar	ASTM B408 / ASME SB408	AMS 5766	Covers hot-worked or cold-worked bar products in Incoloy 800 / UNS N08800. AMS 5766 also covers forgings and forging stock.
Plate / sheet / strip	ASTM B409 / ASME SB409	AMS 5871	Covers rolled plate, sheet and strip products in Incoloy 800 / UNS N08800. For pressure equipment applications, the relevant ASME equivalents should also be checked.
Seamless pipe / tube	ASTM B407 / ASME SB407	—	Used for seamless pipe and tube products.
Seamless heat-exchanger / condenser tube	ASTM B163 / ASME SB163	—	Applicable to seamless tubes used in heat-exchanger and condenser applications.
Welded pipe	ASTM B514 / ASME SB514	—	Covers welded, cold-worked and annealed pipe products.
Welded boiler / heat-exchanger / condenser tube	ASTM B515 / ASME SB515	—	Used for welded boiler, heat-exchanger and condenser tubes.

Alternative Grades

1. Incoloy 800H
2. Inconel 600
3. Inconel 601

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