UNS S31254 (1.4547, F44)

Smiths Advanced Metals

Seawater Corrosion Resistance

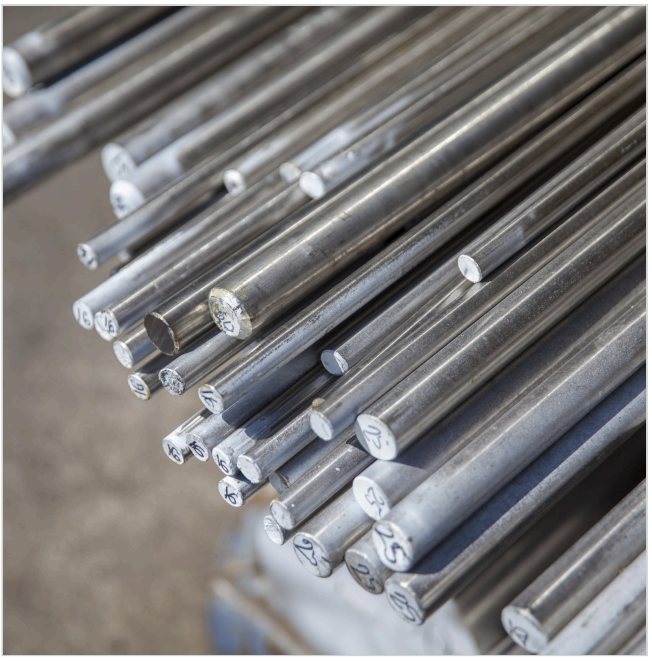
6% molybdenum super austenitic stainless steel.

UNS S31254 is a 6% molybdenum super austenitic stainless steel, with excellent corrosion resistance in seawater and many industrial environments.

A typical PREN of 42–44 gives high resistance to pitting, with good crevice corrosion resistance. Ductility is high, and notch toughness is very good at ambient and sub-zero temperatures.

It replaces 300 series grades such as Type 316 where more strength or better pitting and crevice resistance is needed. Its pitting resistance is comparable to super duplex.

We stock UNS S31254 as round bar in a broad range of sizes.



Grades / Specifications

- UNS S31254
- 1.4547
- ASTM A182 F44
- NORSOK M-630
- NACE MR0175

Key Applications

- Seawater systems
- Offshore oil & gas equipment
- Desalination plant
- Pulp & paper bleaching
- Chemical processing

* Chemical Composition (weight %)

	C	Mn	Si	S	P	Cr	Ni	Mo	N	Cu
min.						19.50	17.50	6.00	0.18	0.50
max.	0.020	1.00	0.70	0.010	0.030	20.50	18.50	7.00	0.25	1.00

* As per EN 10088-3 1.4547

* Mechanical Properties (minimum)

Tensile Strength	650–850 MPa
0.2% Proof Strength	300 MPa min
Elongation	35% min
Hardness	260 HB max

* As per BS EN 10088-3, solution annealed

Physical Properties

Density	8.0 g/cm³
Thermal Conductivity	14 W/m·K
Thermal Expansion (20–100 °C)	16.5 µm/m·°C
Modulus of Elasticity	195 GPa
Electrical Resistivity	0.85 µΩ·m
Magnetic	No

Compared with Super Duplex

UNS S31254 has much lower yield strength than super duplex such as UNS S32750, but similar pitting resistance and higher ductility. Machining and welding present no particular problems.

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UKAS TESTING 1930

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