Duplex Alloy 2507, UNS S32750

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated Specifications: ASTM A240

Duplex Alloys 2507 Alloy Description

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Duplex 2507 is a super duplex stainless steel with high strength and good corrosion resistance. It has excellent resistance to chloride stress corrosion cracking, high thermal conductivity, and a low coefficient of thermal expansion. The high chromium, molybdenum and nitrogen levels provide excellent resistance to pitting, crevice and general corrosion. The impact strength is also high. Duplex 2507 is not recommended for applications which require long exposures to temperatures above 600°F (316°C). Both toughness and corrosion resistance can be reduced

Applications

Screens and other components for the pulp and paper industry
Well screens for oil and gas industry
Marine applications
Components for the chemical processing industry

Chemistry

Carbon: 0.03 max
Manganese: 1.2 max
Phosphorus: 0.035 max
Sulfur: 0.020 max
Silicon: 0.80 max

Chromium: 24.00 – 26.00
Nickel: 6.00 – 8.00
Molybdenum: 3.00 – 5.00
Nitrogen: 0.24 – 0.32
Copper: 0.50 max
Iron: Balance

Physical Properties

Density: 0.280 lbs/in^3, 7.75 g/cm^3

Thermal Conductivity: BTU-ft/hr/ft^2/F (W/m-°K)
At 68-212°F (20-100°C): 9.0 (17.0)

Mean Coefficient of Thermal Expansion: in/in/°F (µm/m•K)
32- 212°F: 7.2 x 10^{-6}(13)

Modulus of Elasticity: KSI (MPa)
29.0x 10^3 (200 x 10^3) in tension

Melting Point: 2570/2660°F (1410/1460°C)

Mechanical Properties at Room Temperature

Annealed Typical
Ultimate Tensile Strength: 116 KSI min (800 MPa min)
Yield Strength: (0.2 % offset) 80 KSI min (551 MPa min)
Elongation: 15% min
Hardness: Rc32 max

Properties Tempered
Duplex 2507 can be cold rolled to achieve the temper properties required by specific customers and/or manufacturing requirements. Contact Ulbrich Wire for details.

Additional Properties

Corrosion Resistance

Refer to NACE (National Association of Corrosion Engineers) for recommendations

Standard Wire Finishes

Extra Clean: Extra clean is also referred to as “bright annealed” or “bright annealed and cold rolled”

Grease (round wire only): Drawn in a heavy grease produces an “Ultra bright” finish for decorative applications

Soap (round wire only): Soap is used as a lubricant in the drawing process and is not removed. It acts as a lubricant during customer part forming operation. A soap finish is available in tempered products.

Plated: Many plating options are available.

*Special finishes are available: Contact Ulbrich Wire Sales with special finish and plating requests

Forms

Continuous Coils

Cut to length

Precision cutting

Heat Treatment

Duplex 2507 Cannot be hardened by heat treatment

Welding

For best results refer to: SSINA’s “Welding of Stainless Steels and Other Joining Methods”

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