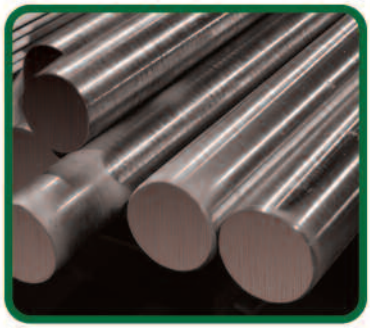
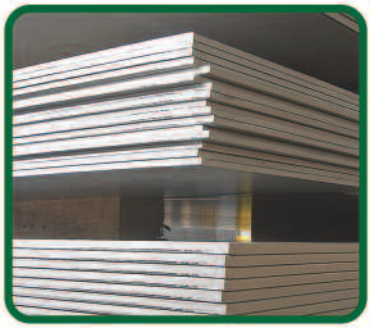
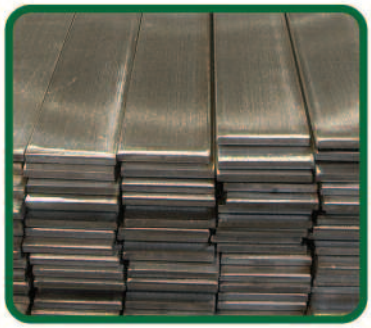
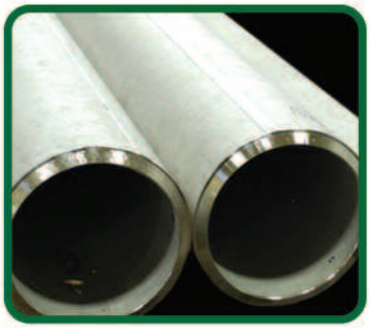
Duplex 2507 Specifications: UNS S32750

DUPLEX 2507 (UNS S32750)

Penn Stainless inventory now includes Duplex 2507 (UNS S32750) in sheet, sheet coil, plate, round bar, processed flat bar and tubular products.

GENERAL PROPERTIES

Duplex 2507 is a super duplex, 25% chromium, 4% molybdenum, and 7% nickel, stainless steel that is used for applications that require exceptional strength and corrosion resistance. The high chromium, molybdenum, and nickel content results in outstanding resistance to pitting, crevice, and general corrosion, while the duplex structure provides exceptional resistance to chloride stress corrosion cracking. Duplex 2507 should not be used in applications above 600°F (316°C) because exposure to elevated temperatures over an extended period of time can reduce Duplex 2507's toughness and corrosion resistance.

APPLICATIONS

Applications that consistently use Duplex 2507 include:

- Desalination equipment
- Chemical process pressure vessels, piping, and heat exchangers
- Oil and gas industry equipment
- Offshore oil production/technology
- Firefighting systems
- Power industry FGD systems
- Marine Applications
- Utility and industrial scrubber systems

STANDARDS DUPLEX 2507

ASTM/ASME .....UNS S32750
EURONORM FeMi35Cr20Cu4Mo2
DIN 2.4660

Duplex 2507 (UNS S32750) can be processed by Penn Stainless utilizing the following methods:

- Shear Cutting
- Plasma Cutting
- HQ Plasma Cutting
- Dynamic Water Jet Cutting
- Laser Cutting
- Saw Cutting
- Gauer Processing
- Machine Cutting

Product Offering:

- Sheet
- Plate
- Round bar
- S/E processed bar
- Tubular products
- Structurals

CORROSION RESISTANCE

- High chromium and molybdenum content provides excellent resistance to uniform corrosion by organic acids
- Also demonstrates good resistance to inorganic acids, especially those that contain chlorides
- Can be used in dilute hydrochloric acid
- Low carbon content greatly lowers he risk of carbide precipitation at the grain boundaries during heat treatment—highly resistant to carbide related intergranualr corrosion
- Duplex structure provides excellent resistance to chloride stress corrosion cracking
- Superior to Duplex 2205 in corrosion resistance and strength
- Highly resistant to crevice corrosion

WELDING CHARACTERISTICS

- Possess good weldability
- Filler metal is suggested when welding because it will produce the appropriate duplex weld structure
- Preheating is not necessary except to prevent condensation on cold metal
- Interpass welding temperature should not exceed 300°F (149°C)

HEAT TREATMENT

- Should be annealed and quenched after hot and cold forming
- Solution annealing done at a minimum of 1925°F (1052°C)

CHEMICAL PROPERTIES

Type	C	Mn	P	Si	Cr	Ni	Mo	N	Fe	Cu
2507	0.03 max	1.2 max	0.035 max	0.02 max	min: 24.0 max: 26.0	min: 6.0 max: 8.0	min:3.0 max: 5.0	min: 0.24 max: 0.320	balance	0.5 max

MECHANICAL PROPERTIES

Grade	Tensile Strength ksi (MPa) min	Yield Strength 0.2% offset ksi (MPa) min	Elongation (% in 50mm) min	Hardness (Brinell) MAX	Hardness (Rockwell B) MAX
Duplex 2507	116 (795)	80 (550)	15	310	32[j]

PHYSICAL PROPERTIES

	Duplex 2307
Density	lbm/in^3
at 68°F (20°C)	0.28
Modulus of Elasticity	**psi x 10^6**
at 68°F to 212°F (20 to 100°C)	29
Coefficient of Thermal Expansion	**x10^{-6}/°F**
at 68°F to 212°F (20 to 100°C)	7.2
Thermal Conductivity	**Btu/h ft °F**
at 68°F to 212°F (20 to 100°C)	8.7
Heat Capacity	**Btu/lb/°F**
at 68°F to 212°F (20 to 100°C)	0.12
Electrical Resitivity	**W-in x 10^{-6}**
at 68°F to 212°F (20 to 100°C)	31.5

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