HONGCHEN METAL
INDUSTRIAL METAL MATERIALS

PRODUCT DATA SHEET
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PRODUCT SPECIFICATIONS · PIPE

Duplex Steel 2507 Pipe

Chemical composition, mechanical properties and material characteristics

Features

- 2507 duplex stainless steel is a special ferritic-austenitic duplex stainless steel with excellent corrosion resistance.
- It achieves comprehensive protection against point corrosion, crevice corrosion and uniform corrosion through the unique ratio of chromium and molybdenum elements.

Typical Applications

- Selected for more aggressive chloride / seawater service than 2205, including higher-temperature seawater systems, desalination and harsh process streams. Follow PREN and fabrication PQRs.

Product Parameters

Product Name	2507 Super Duplex Stainless Steel Pipe
Type	Super Duplex Stainless Steel (UNS S32750)
Standard	Super Duplex UNS S32750; EN 1.4410; ASTM A789/A790; EN 10216-5 for seamless pipe.
Surface	Pickled/annealed, bright annealed, or mechanically polished; pickled/passivated finish preferred for seawater service.
Delivery Condition	Solution annealed and pickled (or equivalent condition per order).
Scope of Application	Selected for more aggressive chloride / seawater service than 2205, including higher-temperature seawater systems, desalination and harsh process streams. Follow PREN and fabrication PQRs.
Certificate	EN 10204 3.1 mill test certificate as standard; 3.2, PMI, ferrite, ASTM A923 / G48 and impact tests available on request. NACE MR0175 / ISO 15156 compliance available when specified.
Production Technology	Hot- or cold-worked, then solution annealed to restore the balanced ferrite–austenite microstructure and corrosion resistance. Cutting, leveling, slitting and end finishing available. Seamless or welded supply routes depending on size; cut-to-length and end preparation available.
Edge Processing	Plain, beveled or threaded ends available on request; end finishing and length tolerance per order.
Round Tube OD	4–200 mm
Square Tube	10 × 10–100 × 100 mm
Rectangular Tube	10 × 20–50 × 100 mm
Wall Thickness	0.6–6.0 mm
Length	1–6 m; custom lengths.

Chemical Composition

C	Si	Mn	Cr	Ni	Mo	S	P
≤ 0.03	≤ 0.8	≤ 1.2	24.0～26.0	6.0～8.0	3.0～5.0	≤ 0.02	≤ 0.035

Mechanical Properties

Tensile Strength Kb (MPa)	Yield Strength σ0.2 (MPa)	Elongation D5 (%)	Hardness
≥795	≥550	≥15	≤310HB

Physical Performance

Density(g/cm³)	Modulus of Elasticity(Gpa)	Coefficient of Thermal Expansion(10 -6 /°C)	Coefficient of Thermal Conductivity(W/m * K)	Resistivity(MΩ. cm)
7.75	200	13.0	17.0	80

Selection note: verify PREN, toughness and welding procedure against the chloride service and design code.

Related Properties

Corrosion Resistance	Super-duplex grade aimed at more aggressive chloride service than 2205, including higher-temperature seawater and harsh process streams. Selection should follow PREN, toughness requirements and fabrication procedure qualification.
Strength Advantage	Yield and tensile strength are typically higher than common austenitic stainless of similar thickness, which can allow thinner wall or higher allowable stress where the design code permits. Confirm mechanical values against the ordered condition and product form.
Weldability	Can be welded with GTAW, GMAW and SMAW when heat input, interpass temperature and duplex-matched filler are controlled to keep a balanced ferrite–austenite weld microstructure. Poor practice may reduce toughness or corrosion resistance in the HAZ.
Forming & Fabrication	Cold forming is feasible but needs higher force and springback allowance than 304/316 because of the higher strength. Hot forming and subsequent solution annealing should follow the grade procedure to restore corrosion performance.
Service Window	Best suited to chloride-bearing aqueous service inside a limited temperature window. Prolonged holding in the 300–550 °C embrittlement range should be avoided unless the grade data explicitly allow it.

Material guidance for your next project

Send your grade, size and application requirements to our team.

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