Duplex Stainless Steel Seamless Pipe

Duplex seamless pipe is designed for demanding environments where both high strength and excellent corrosion resistance are required. Compared with conventional austenitic stainless steel pipe, duplex stainless steel offers improved resistance to pitting corrosion, crevice corrosion and chloride stress corrosion cracking, making it a reliable choice for marine, offshore, seawater and pressure piping systems.

We supply high quality duplex stainless steel seamless pipe in commonly used grades such as duplex 2205 (UNS S31803 / S32205) and super duplex 2507 (UNS S32750) according to ASTM SA789, ASTM SA789M, ASTM SA790, EN 10216-5 etc.. Our products can be supplied in accordance with international standards, with full material traceability, inspection reports and project-specific documentation upon request.

What Is Duplex Seamless Pipe?

Duplex stainless steel seamless pipe combines the advantages of ferritic and austenitic stainless steels. It offers higher strength than standard stainless grades such as 304L and 316L, while providing better resistance to chloride-containing environments. This makes duplex seamless products a reliable choice for marine piping, offshore systems, seawater cooling lines, heat exchangers, pressure equipment and corrosive process applications.

Specification of Duplex Stainless Steel Seamless Pipe:

Product Name	Duplex Stainless Steel Seamless Pipe

Material Grades	UNS S31803 / S32205 (2205), UNS S32750 (2507)
Standards	ASTM A790, ASTM A789, ASTM A928, EN 10216-5
Outside Diameter	6 mm – 610 mm
Wall Thickness	1 mm – 40 mm
Length	Random Length / Fixed Length / Customized
Surface Finish	Annealed, Pickled
Pipe Ends	Plain End / Beveled End
Marking	Standard Marking / Customized Marking
Certification	EN 10204 3.1, 3.2 upon request
Inspection	PMI, Hydrotest, UT, ET, Dimensional Inspection
Applications	Marine, Offshore, Seawater, Heat Exchangers, Chemical Process

Note: ASTM A790 is typically used for pipe, while ASTM A789 is generally used for tube applications. Supply scope should be confirmed according to the actual project requirement.

Grades of Duplex Stainless Steel Seamless Pipe:

- **UNS S31803 / UNS S32205**

2205 is one of the most widely used duplex stainless steel grades. It offers a balanced combination of strength, corrosion resistance and fabrication performance. It is commonly used in marine systems, seawater lines, offshore piping and industrial process equipment.

Typical advantages of 2205:

- Higher strength than 304L and 316L

- Good resistance to pitting and crevice corrosion

- Improved resistance to chloride stress corrosion cracking

- Suitable for marine and industrial corrosive environments

- **UNS S32750**

2507 is a super duplex stainless steel grade intended for more severe service conditions. It provides higher strength and corrosion resistance than 2205, especially in aggressive chloride and seawater environments.

Typical advantages of 2507:

- Excellent corrosion resistance in aggressive chloride environments

- Higher PREN value

- Very high mechanical strength

- Suitable for offshore, seawater and critical process systems

Chemical composition of 2205 and 2507 Duplex Stainless Steel:

Grade	Element	C	Cr	Ni	Mo	N	Mn	Si	P	S
2205	Typical Range (%)	≤ 0.03	22.0 – 23.0	4.5 – 6.5	3.0 – 3.5	0.14 – 0.20	≤ 2.0	≤ 1.0	≤ 0.03	≤ 0.02
2507		≤ 0.03	24.0 – 26.0	6.0 – 8.0	3.0 – 5.0	0.24 – 0.32	≤ 1.2	≤ 0.8	≤ 0.035	≤ 0.02

Physical properties of 2205 and 2507 Duplex Stainless Steel:

Grade	Tensile Strength	Yield Strength	Elongation
2205	≥ 620 MPa	≥ 450 MPa	≥ 25%
2507	≥ 800 MPa	≥ 550 MPa	≥ 15%

Standards of Duplex Stainless Steel Seamless Pipe:

Our duplex stainless steel seamless products can be supplied according to the following standards:

ASTM A790 – Standard Specification for Seamless and Welded Ferritic/Austenitic Stainless Steel Pipe

ASTM A789 – Standard Specification for Seamless and Welded Ferritic/Austenitic Stainless Steel Tubing for General Service

ASTM A928 – Ferritic/austenitic stainless steel tubing

EN 10216-5 – Seamless stainless steel tubes for pressure purposes

How to choose the standards?

Choose ASTM A790 for duplex stainless steel pipe applications

Choose ASTM A789 for duplex stainless steel tubing and heat exchanger applications

Choose EN 10216-5 when European pressure tube standards are required.

Advantages of Duplex Stainless Steel Seamless Pipe:

Duplex seamless pipe is widely selected in demanding industrial and marine projects because of its combined mechanical and corrosion performance.

- High Strength

Duplex stainless steel has higher yield strength than conventional austenitic stainless steel, which may help optimize wall thickness in some systems.

- Good Resistance to Pitting and Crevice Corrosion

Suitable for chloride-containing media and marine environments.

- Improved Resistance to Chloride Stress Corrosion Cracking

A major advantage in offshore, seawater and chemical service.

- Suitable for Marine and Offshore Use

Commonly used in shipbuilding, seawater piping and offshore equipment.

- Available in Pipe and Tube Standards

Supply can be arranged according to ASTM A790 for pipe applications and ASTM A789 for tubing applications.

- Seamless Construction

Suitable for applications requiring reliable pressure performance and uniform structure.

- Traceability and Documentation Support

Full identification and inspection documents are available upon request.

Applications of Duplex Stainless Steel Seamless Pipe:

Duplex seamless pipe and tube are widely used in systems where corrosion resistance and strength are both important.

Marine piping systems

Seawater cooling systems

Ballast water lines

Offshore platform piping

Shipbuilding and ship repair projects

Heat exchangers

General service tubing

Pressure piping systems

Desalination plants

Chemical processing lines

Oil and gas service applications

Package of Duplex Stainless Steel Seamless Pipe:

Our duplex seamless pipe is packed for export shipment and traceable storage.

Bundled packing for standard sizes

Wooden cases for small-size tubes or special requirements

Plastic end caps when required

Waterproof export wrapping

Marking with heat number and specification