

Duplex & Super Duplex Stainless Steel – Technical Data Sheet

Duplex and Super Duplex Stainless Steel grades are advanced stainless steels that combine excellent corrosion resistance, high mechanical strength, and outstanding durability. These materials are widely used in marine, offshore, chemical processing, oil & gas, desalination, power generation, and industrial applications where superior performance is required in aggressive environments. Their unique microstructure provides an excellent balance of strength and corrosion resistance, making them a preferred choice for demanding engineering projects.

What is Duplex Stainless Steel?

Duplex Stainless Steel is a stainless steel grade that combines the beneficial properties of austenitic and ferritic stainless steels. It offers higher strength than conventional stainless steel grades while providing excellent resistance to pitting, crevice corrosion, and stress corrosion cracking.

What is Super Duplex Stainless Steel?

Super Duplex Stainless Steel is an enhanced version of Duplex Stainless Steel developed for highly corrosive environments. It provides superior corrosion resistance, exceptional strength, and excellent performance in chloride-rich and seawater applications.

Key Features

- Excellent corrosion resistance.
- Superior resistance to pitting and crevice corrosion.
- High mechanical strength.
- Excellent resistance to stress corrosion cracking.
- Good weldability and fabrication properties.
- Outstanding durability in aggressive environments.
- Long service life with reduced maintenance costs.

Technical Data Sheet – Duplex Stainless Steel 2205

UNS Designation:	S32205 / S31803
Density:	7.80 g/cm ³
Tensile Strength:	620 MPa (Min)
Yield Strength:	450 MPa (Min)
Elongation:	25% (Min)
Hardness:	293 HB (Max)

Melting Range:	1350°C – 1450°C
Common Standards:	ASTM A240, ASTM A276, ASTM A790, ASTM A182

Technical Data Sheet – Super Duplex Stainless Steel 2507

UNS Designation:	S32750
Density:	7.80 g/cm ³
Tensile Strength:	800 MPa (Min)
Yield Strength:	550 MPa (Min)
Elongation:	15% (Min)
Hardness:	310 HB (Max)
Melting Range:	1350°C – 1400°C
Common Standards:	ASTM A240, ASTM A276, ASTM A790, ASTM A182

Typical Applications

Offshore platforms, subsea equipment, heat exchangers, pressure vessels, desalination plants, marine piping systems, chemical processing equipment, storage tanks, oil and gas infrastructure, water treatment facilities, and power generation systems.

Available Product Forms

Sheets, plates, coils, pipes, tubes, round bars, flat bars, rods, fittings, flanges, fasteners, forgings, and custom-fabricated components.

Why Choose Duplex & Super Duplex Stainless Steel?

These materials offer an excellent combination of corrosion resistance, mechanical strength, and long-term reliability. Their performance in challenging environments helps improve operational efficiency, reduce maintenance costs, and extend equipment service life.

Maintenance and Care

Regular inspection and proper maintenance practices help preserve performance and appearance. Routine cleaning and monitoring of operating conditions can maximize service life in demanding environments.

Conclusion

Duplex and Super Duplex Stainless Steel are trusted materials for applications requiring exceptional strength, corrosion resistance, and durability. Their proven performance makes them a preferred choice

across marine, offshore, chemical processing, and energy industries.