Stainless steel 2205 Duplex | 1.4462 | X2CrNiMoN 22-5-3

Stainless Steel 2205 Duplex offers high strength and chloride resistance for marine parts.

Mechanical properties

Ultimate tensile strength	620 - 700 MPa
Yield strength	425 - 500 MPa
Young's modulus (modulus of elasticity)	195 - 205 GPa
Elongation at break	14 - 28 %

Physical properties

Corrosion resistance	Excellent
Magnetism	Magnetic
UV resistance	Excellent
Weldability	Good

Thermal properties

Maximum service temperature	335 - 365 °C
Thermal expansion coefficent	13.5 - 18.2 10^-6/ºC
Thermal conductivity	14.4 - 15.6 W/(m·°C)

Electrical properties

Electrical resistivity	78.4 - 81.6 µΩ*cm

Post treatments

Post-Processing	Hardening
Anodizing compatibility	Not suitable

Common applications

Acetic acid distillation components	
Flue gas filters	
Chemical tanks	
Heat exchangers	
Environments containing chlorides and hydrogen sulphide	

Stainless Steel 2205 Duplex CNC Machining Applications & Parts

Stainless Steel 2205 Duplex offers a combination of austenitic and ferritic microstructures, providing exceptionally high strength and excellent resistance to stress corrosion cracking. We are equipped to handle the machining challenges of this tough, durable alloy.

Typical Parts We Machine from Stainless Steel 2205 Duplex:

- **Chemical Processing Equipment:** Pressure vessels, heat exchangers, reactor tanks
- **Oil & Gas Exploration:** Downhole instrumentation housings, flow line equipment, subsea components
- **High-Strength Structural:** Fasteners, beams, connectors for corrosive environments

Our Machining Advantage:

We utilize specialized tool geometries and rigid machining setups to effectively cut through the tough duplex structure of 2205, maintaining tight tolerances and preventing work hardening.

Get an Instant Quote for your custom Stainless Steel 2205 Duplex parts today.