

2205 Duplex Stainless Steel

Typical Analysis (Ave. values %)	C	Si	Mn	Cr	Ni	Mo	N
	≤0.03	1.0	2.0	22.0	5.5	3.0	0.02
NEAREST STANDARD	DIN		UNS		ASTM		
	1.4462 X2CrNiMoN22 5 3		S31803		A240		

DESCRIPTION	<p>2205 is a duplex stainless steel with high general, localized and stress corrosion resistance properties in addition to high strength and excellent impact toughness. 2205 provides pitting and crevice corrosion resistance superior to 316L or 317L austenitic stainless steels in almost all corrosion media. It also has high corrosion and erosion fatigue properties as well as lower thermal expansion and higher thermal conductivity than austenitic steels. The yield strength is about twice that of austenitic stainless steels 2205 is particularly suitable for applications covering the temperature range of -45°C to 320°C.</p>
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APPLICATIONS	<ul style="list-style-type: none"> ➤ Pressure vessels, tanks, piping and heat exchangers in the chemical processing industry. ➤ Piping, tubing and handling of gas and oil. ➤ Effluent scrubbing systems. ➤ Pulp and paper industry digesters, bleaching equipment, and stock handling systems. ➤ Rotors, fans, shafts, and press rolls requiring combined strength and corrosion resistance. ➤ Cargo tanks for ships and trucks. ➤ Food processing equipment.
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MECHANICAL PROPERTIES & COMPARISONS (annealed)	2205 provides a stainless steel with twice the yield strength of the standard austenitic alloys and an upgrade in general corrosion resistance.			
	Grade	Tensile Strength MPa	Yield Strength MPa	Elong %
	2205	620	450	>25
	304	520	210	40
	316	520	210	40
	317	520	210	35

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HEAT TREATMENT	Anneal	1040°C. water quench.
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PHYSICAL PROPERTIES	Density (kg/dm ³)	7.80
	Modulus of elasticity 10 ³ N/mm ²	200
	Thermal conductivity W/(m.K)	15
	Electric resistivity Ohm.mm ² /m	0.80
	Specific heat capacity J/(kg.K)	500
	Thermal expansion 10 ⁶ m/(m.K)	13

WELDING	Use Fox CN22/9N electrodes or CN229/9N MIG (99.996% Argon) Back purging with pure Argon should be carried out. For highly stressed walled constructions the limited preheat temperature of 150°C maximum is recommended.
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Round Centreless ground h9									
SIZE RANGE	31.75	44.45	57.15	69.85	82.55	101.6			
	38.1	50.8	63.5	76.2	88.9				

Sizes normally stocked in Australia. Some branches may not hold the entire range.
Other sizes available on request.

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