

STAINLESS STEEL

431S29 - 1.4057



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431S29 is a British stainless steel grade that falls under the standard BS 970. It is known for its high corrosion resistance, particularly in marine and acidic environments, making it suitable for a variety of applications where reliability, durability and resistance to corrosion are crucial. Its chromium content forms a protective oxide layer that enhances its durability against rust and oxidation.

KEY FEATURES

- Good resistance to corrosion
- High strength
- Good torque strength
- Easy to machine in annealed condition
- Pre-heating before welding recommended

CHEMICAL PROPERTIES

Chromium (Cr)	Nickel (Ni)	Manganese (Mn)	Silicone (Si)	Carbon (C)	Phosphorus (P)	Sulphur (S)	Iron (Fe)
17-19%	9-13%	2%	1%	0.08%	0.04%	0.03%	rest

MECHANICAL PROPERTIES

Tensile strength (N/mm ²)	500-700
Yield strength (N/mm ²)	200-400
Elongation (% in 4D)	40-60
Hardness - Rockwell (HRB) max	92-99
Hardness - Brinell (HB) max	200-240

PHYSICAL PROPERTIES

Density (kg/m ³)	7800	
Modulus of elasticity (Gpa)	200	
Mean coefficient of thermal expansion	0-100°C (µm/m/°C)	10.2
	0-350°C (µm/m/°C)	10.6
	0-538°C (µm/m/°C)	10.9
Thermal conductivity	at 100°C (W/m.K)	15.0
	at 500°C (W/m.K)	19.0
Specific Heat 0-100°C (J/kg.K)	500	
Electrical resistivity (nΩ.m)	750	
Melting point (°C)	1450	

MARKET SECTORS



Marine Equipment

Boat shafts, propellers, marine fasteners



Chemical Processing

Tanks, valves, pipework



Food & Beverage Industry

Conveyors, mixers, processing containers



Medical Devices

Surgical tools, dental instruments, orthopedic implants



Oil & Gas Industry

Drilling equipment, valves, pumps



Aerospace Industry

Structural parts, fasteners, landing gear