THAMES
STOCKHOLDERS

431 Stainless

MARTENSITIC STAINLESS STEEL

Product Overview

Type 431 stainless steel alloy is highly suitable for shaft manufacture due to the material's high torsional and tensile strength.

The hardenable martensitic stainless steel finds use in applications requiring corrosion resistance with good toughness and overall strength. Our product offers impressive saltwater resistance, making the alloy popular in marine hardware and component applications. Type 431 stainless offers good machinability once annealed, but weldability may prove difficult. The alloy should be preheated before welding to reduce the risk of cracking.

We stock 431 martensitic stainless steel in round bars. We also offer dedicated billeting services to cut your round bars to size.

Key Features

- Heat-treatable martensitic stainless steel
- High tensile and torsional strength
- Highly suitable for shaft manufacture
- Impressive saltwater corrosion resistance

Applications

- Valve stems
- Aircraft components
- Marine systems
- Pump & propeller shafts

* Chemical Composition (weight, %)

	C	Mn	Si	P	S	Cr	Ni
Min.	0.12					15.00	1.50
Max.	0.22	1.50	1.00	0.04	0.03	17.00	2.50

* Properties as per BS EN 10088-3, 1.4057

* Mechanical Properties

Ultimate Tensile Strength	800 - 950	MPa
Proof Stress	600 min	MPa
Elongation A5	12	%

* Properties as per BS EN 10088-3, 1.4057 (QT800, 60-160mm)

Physical Properties

Density	7800	kg/m³
Modulus of Elasticity	200	GPa
Electrical Resistivity	720	n. Ω.m
Thermal Conductivity at 100°C	20.2	W/m.K

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