



THAMES
STOCKHOLDERS

416 Stainless

MARTENSITIC STAINLESS STEEL

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Product Overview

Type 416 stainless is a martensitic alloy steel with excellent machining capabilities thanks to additional sulphur in the alloying process.

The alloy offers the best machining capabilities of any stainless steel and enhanced non-galling properties too, but these benefits come at a cost. The added sulphur limits overall corrosion resistance, and formability and weldability are also limited. However, with such high machinability and relatively low material cost, 416 stainless steel is a popular engineering raw material.

Our product is available unhardened, hardened and highly tempered, and we stock the product in solid round bars.

Key Features

- The best machining capabilities of all stainless steels
- Improved non-galling characteristics
- Limited corrosion resistance
- Poor weldability

Applications

- Automotive components
- Valves & pumps
- Gears
- General engineering applications

* Chemical Composition (weight, %)

	C	Cr	Mn	Si	P	S	Mo	Fe
Min.	0.06	12.00				0.15		
Max.	0.15	14.00	1.50	1.00	0.04	0.35	0.60	Bal

* Properties as per BS EN 10088-3, 1.4005

* Mechanical Properties

Tensile strength	650 - 850	MPa
Proof Stress	450 min	MPa
Elongation A5	12 min	%

* Mechanical properties can vary greatly (tensile strength up to 1400MPa) according to the heat treatment that the material has undergone.

* Stated properties as per BS EN 10088-3, 1.4005 (QT650)

Physical Properties

Density	7.75	g/cm ³
Modulus of Elasticity	200	GPa
Electrical Resistivity	0.057	x10 ⁻⁶ Ω.m
Thermal Conductivity 2	4.9	W/m.K
Thermal Expansion	9.9	x10 ⁻⁶ /K



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