

STAINLESS STEEL

440C - 1.4125



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1.4125 is a martensitic stainless steel grade also known as X105CrMo17 in European standards or AISI 440C in the American designation. It is known for its balance of hardness, corrosion resistance, and machinability, making it suitable for a variety of industrial and specialty applications where these properties are critical. Proper heat treatment and machining practices are crucial to harness its full potential in various engineering applications.

KEY FEATURES

- High hardness and strength
- Excellent wear resistance
- Good corrosion resistance
- Good machinability
- Heat treatment can influence properties

CHEMICAL PROPERTIES

Chromium (Cr)	Manganese (Mn)	Silicone (Si)	Carbon (C)	Molybdenum (Mo)	Phosphorus (P)	Sulphur (S)	Iron (Fe)
16-18%	1%	1%	0.95-1.2%	0.5-1%	0.04%	0.03%	rest

MECHANICAL PROPERTIES

Tensile strength (N/mm ²)	750-1000
Yield strength (N/mm ²)	450-800
Elongation (% in 4D)	14-25
Hardness - Rockwell C (HRC) max	58-62
Hardness - Brinell (HB) max	200-250

PHYSICAL PROPERTIES

Density (kg/m ³)	7700	
Modulus of elasticity (Gpa)	200	
Mean coefficient of thermal expansion	0-100°C (µm/m/°C)	10.5
	0-350°C (µm/m/°C)	11.1
	0-538°C (µm/m/°C)	11.6
Thermal conductivity	at 100°C (W/m.K)	26.0
	at 500°C (W/m.K)	30.0
Specific Heat 0-100°C (J/kg.K)	460	
Electrical resistivity (nΩ.m)	600	
Melting point (°C)	1400	

MARKET SECTORS



Automotive Industry

Precision bearings, bearing components, mechanical parts



Chemical Processing

pump shafts, valve components, bearings



Kitchen Equipment

High performance knives, blades



Medical Devices

Scalpels, forceps, dental tools



Engineered Components

Drill bits, milling cutters, blades, ball bearings



Aerospace Industry

Aircraft components, fasteners, gears