

212A42 (EN8DM)

LOW ALLOY ENGINEERING STEEL

We are a division of the Smiths Metal Centres Limited Group

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212A42 steel is a low-alloy medium carbon steel with chromium and molybdenum as its main elements.

It is also known as AISI 4140 steel. It is widely utilised in the aerospace, oil and gas, and automotive industries due to its high strength, toughness, and fatigue resistance. The carbon steel can be heat treated to achieve various mechanical properties, such as high tensile strength and hardness.

Chemical Composition (weight, %)

	C	Si	Mn	P	S
Min.	0.40		1.00		0.12
Max.	0.45	0.25	1.30	0.06	0.20

* Properties as per BS 970

Strength:

212A42 steel is a high-strength material with excellent mechanical properties, making it suitable for applications requiring high strength and durability.

The tensile strength of **212A42** steel is typically in the range of 1100-1400 MPa (megapascals), depending on the heat treatment and processing conditions. It also exhibits high yield strength, typically in the range of 900-1200 MPa, which means it can withstand high stress and load without deformation or failure. In addition to its high strength, our product exhibits good toughness and impact resistance, even at low temperatures, making it suitable for use in applications that require resistance to fatigue and failure.

The excellent strength properties of steel are achieved through a combination of its chemical composition and heat treatment processes such as quenching and tempering. These processes create a fine-grained microstructure in the material, which enhances its strength and toughness.

Benefits:

- High Strength
- Robust
- Good wear resistance
- Versatile material

Availability:

We stock **212A42** in round and square bars of various diameters. We supply the product in standard lengths or cut to your specific size requirements.

Wear Resistance:

212A42 steel has excellent wear resistance due to its high hardness and toughness. Its chemical composition enhances its wear-resistance properties, making it suitable for use in applications requiring high wear and abrasion resistance. Its fatigue resistance also makes it ideal for use in applications that require high cyclic loading, such as in the aerospace and automotive industries.

