

# 080M46 (C45)

HIGH TENSILE ENGINEERING STEEL

We are a division of the Smiths Metal Centres Limited Group

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**080M46** steel is a high tensile strength steel with good machinability and wear resistance.

Its medium carbon content makes it easy to weld and form. The addition of molybdenum improves the strength and hardenability of the steel, allowing it to be heat-treated to achieve even higher levels of strength. **080M46** is equivalent to the European Standard C45 steel.

### Chemical Composition (weight, %)

	C	Si	Mn	P	S
Min.	0.42	0.10	0.60		
Max.	0.50	0.40	1.00	0.05	0.05

\* Properties as per BS 970

### Tensile Strength:

**080M46** is a medium carbon steel with a typical tensile strength of 700-850 N/mm<sup>2</sup>, depending on the heat treatment and processing conditions. The exact tensile strength of this steel can vary based on factors such as the thickness and shape of the material, the heat treatment used, and any additional processing or finishing steps applied during production.

### Wear Resistance:

This grade of steel has good wear-resistance properties. The wear resistance of the material can be improved when heat treatment processes such as quenching and tempering are applied, which increase the hardness and strength of the material. Adding alloying elements such as chromium and nickel can also improve the wear resistance of **080M46** steel. These elements form carbides and nitrides in the steel matrix, increasing the hardness and wear resistance.

### Benefits:

- Moderate tensile strength
- Good wear resistance
- Durable
- Good machinability

### Availability:

We stock **080M46** in round and square bars of various diameters. We supply the product in standard lengths or cut to your specific size requirements.

### Durability:

The medium carbon content of the steel provides a balance of strength and toughness, allowing the material to withstand a wide range of mechanical stresses, harsh environments and impacts without deformation or failure.

