



# 080A42 (EN8)

MEDIUM CARBON ENGINEERING STEEL

We are a division of the Smiths Metal Centres Limited Group

Revision: tsm/heat-treated/080a42/14-03-23

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**080A42** is a medium-carbon steel with a chemical composition of 0.4% carbon, 0.6% manganese, and small amounts of sulphur and phosphorus.

It can be annealed for improved machinability, normalised for enhanced strength and toughness, or quenched and tempered for higher strength and hardness. At a lower cost than an alloy, this is an exceptional alternative.

## Chemical Composition (weight, %)

	C	Si	Mn	P	S
Min.	0.40	0.10	0.70		
Max.	0.45	0.40	0.90	0.05	0.05

\* Properties as per BS 970

### Machinability:

The machinability of **080A42** steel can be attributed to its composition and properties, which make it easier to cut, shape, and form.

### Cost-effective:

The cost-effectiveness of **080A42** steel is partly due to its relatively low carbon content, making it less expensive to produce than higher-carbon steels. In terms of its use in various applications, **080A42** steel is often selected for its strength, toughness, and affordability. It is commonly used in applications such as gears, shafts, and axles, where its mechanical properties and cost-effectiveness make it a good choice.

### Availability:

We stock **080A42** in round and square bars in standard lengths or cut to specific sizes.

### Versatility:

By varying the heat treatment process, the product becomes a very versatile steel to achieve various mechanical properties, making it suitable for various applications.

### Strength:

The strength of **080A42** steel can vary depending on how it has been heat-treated and processed. However, as a medium carbon steel, it generally has good strength properties. In its normalised condition, **080A42** steel typically has a tensile strength of around 580-740 MPa (84-107 ksi) and a yield strength of about 330-460 MPa (48-67 ksi). These values can be further improved through various heat treatment processes, such as quenching and tempering.

Our product is used in applications requiring superior properties than mild steel. This is an unalloyed carbon steel with adequate tensile strength. Utilising heat treatment methods, this steel provides good surface hardness.



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