

## 40CrMnMoS8-6 Steel

**40CrMnMoS8-6 steel suppliers delivering throughout the UK.** West Yorkshire Steel are stockholders and suppliers of round, flat bar, plate and block. 40CrMnMoS8-6 is high tensile steel popular for plastic mould applications.

### Form of Supply

West Yorkshire Steel are stockholders and suppliers of round bar, flat bar, plate and block. Rectangular pieces can be sawn to your specific sizes. Diameters can be sawn to your required lengths as one offs or multiple pieces. Precision ground bar can be supplied, providing a quality precision ground bar to close tolerances.

Contact our experienced sales team who will assist you with your 40CrMnMoS8-6 steel enquiry.

- Plate
- Flat
- Diameter

### Applications

This grade is commonly used for the production of moulds where improved machinability is required. Typical applications include die holders, zinc die casting dies, backers, bolsters and injection moulds. The versatility of this plastic mould tool steel with its high tensile strength enables uses for a variety of other applications such as shafts and wear strips.

### Analysis

Carbon	0.35-0.45%	Chromium	1.80-2.00%
Manganese	1.40-1.60%	Molybdenum	0.15-0.25%
Sulphur	0.05-0.10%	Silicon	0.30-0.50%
Phosphorous	0.03% max		

### Forging

Heat slowly, allowing sufficient amount of time for the steel to become heated through. Forge at 1050°C, do not forge below 930°C reheating if necessary. Cool very slowly after forging.

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## Stress Relieving

When the steel is heavily machined, stabilising just before finish machining is recommended to relieve machining strains. Heat to 460-500°C. Soak well and allow to air cool.

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## Annealing

Heat uniformly to 710 to 740°C. Soak well, slowly cool in the furnace.

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## Hardening

Heat uniformly to 830 to 870°C until heated through. Quench in oil.

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## Tempering

Heat uniformly and soak at the tempering temperature for at least one hour per 25mm of ruling section. Allow to cool in still air.

<b>Temperature [°C]</b>	100	200	300	400	500	600
<b>Hardness [HRc]</b>	51	50	48	46	42	36
<b>Tensile [N/mm<sup>2</sup>]</b>	1730	1670	1570	1480	1330	1140

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## Flame / Induction Hardening

Induction or flame hardening of will achieve a hardness of 50 to 55HRc. It is preferable to air cool, though smaller components may require forced cooling. Temper immediately after hardening.

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## Heat Treatment

Heat treatment temperatures, including rate of heating, cooling and soaking times can vary due to factors such as the shape and size of each steel component. Other considerations during the heat treatment process include the type of furnace, quenching medium and also the work piece transfer facilities. Please consult your heat treatment provider for full guidance on hardening of 40CrMnMoS8-6.

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## Quality Assured Supply

40CrMnMoS8-6 steel is supplied in accordance with our ISO 9001:2008 registration.