

## 709M40 Alloy Steel

**709M40 709M40T steel suppliers and stockholders delivering to the whole of the UK.** West Yorkshire Steel are suppliers of bright drawn bar and hot rolled black bar. This is a similar grade to [708M40](#) but with a variation in the molybdenum content and is usually supplied heat treated to 'T' condition. This grade offers good ductility and shock resisting properties combined with resistance to wear. At low temperatures it has reasonably good impact properties. 709M40T is a popular high tensile engineering steel with a tensile of 850-1000N/mm<sup>2</sup>. This grade can be nitrided and flame or induction hardened which will give the steel maximum wear and abrasion resistance characteristics.

We welcome export enquiries for alloy steel. Contact our sales office and consult our [shipping policy](#) for further details.

### Alternative grades we supply

[605M36T](#) | [708M40T](#) | [817M40T](#) | [826M40W](#) | [835M30](#) | [535A99](#) | [655M13](#) | [722M24](#) | [905M39](#)

### Form of Supply

West Yorkshire Steel are stockholders and suppliers of round bar and flat section in bandsaw cut pieces. Diameters can be sawn to your required lengths as one offs or multiple cut pieces. Centreless ground steel bar can be supplied, providing a high tensile steel precision ground bar to tight tolerances.

Contact our experienced sales team who will assist you with your 709M40T enquiry.

- Flat
- Diameter

### Applications

Widely used in areas such as the motor, oil and gas industries. Suitable for components such as shafts, gears, spindles, bolts, studs and a wide variety of applications where a good quality high tensile steel grade is required.

### Analysis

Carbon	0.36-0.44%	Chromium	0.90-1.50%
Manganese	0.70-1.00%	Molybdenum	0.25-0.35%
Silicon	0.10-0.35%	Sulphur	0.040% max
		Phosphorous	0.035% max

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## Forging

Preheat the steel carefully, then raise temperature to 850-1200°C for forging. Do not forge below 850°C. After forging 709M40, cool slowly in still air.

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## Annealing

Heat the steel slowly to 680-700°C. Cool in air.

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## Hardening

709M40 is commonly supplied ready heat treated at 'T' condition. If further heat treatment is required annealed 709M40 should be heated slowly to 860-890°C and after adequate soaking at this temperature quench in oil. Temper as soon as tools reach room temperature.

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## Tempering

Heat the component carefully to a suitable temperature selected by reference to a tempering chart or table, soak at the temperature for two hours per 25mm of ruling section, then allow to cool in air. Tempering between 250-375°C is not advised as tempering within this range will seriously reduce the impact value.

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## Typical Mechanical Properties\*

Condition	Tensile N/mm <sup>2</sup>	Yield N/mm <sup>2</sup>	Elongation %	Izod KCV J	Hardness Brinell
S	775-925	585	14	16	223-277
T	850-1000	650	13	35	248-302
U	925-1075	755	12	42	269-331

(\*subject to ruling section)

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## Heat Treatment

Heat treatment temperatures, including rate of heating, cooling and soaking times will vary due to factors such as the shape and size of each 709M40 component. Other considerations during the heat treatment process include the type of furnace, quenching medium and work piece transfer facilities. Please consult your heat treatment provider for full guidance on heat treatment of alloy steel.

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## Certification

709M40T alloy steel is available with BS EN 10204 3.1 mill certificate, please request when placing any orders.

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## Quality Assured Supply

709M40T is supplied in accordance with our ISO 9001:2015 registration.