# 708M40

Quality 708M40 cut and delivered in rounds or flats, whatever size you need.

**708M40 steel stockholders and suppliers, delivering to the whole of the UK.**

West Yorkshire Steel are suppliers of bright drawn bar and hot rolled black bar. 708M40 is a similar grade to 709M40 but with a variation in the molybdenum content. As a high quality alloy steel specification 708M40 is usually supplied heat treated to 'T' condition. This grade offers good ductility and shock resisting properties combined with resistance to wear. With these characteristics it is a popular high tensile engineering steel with a tensile of 850°-1000N/mm$^2$. At low temperatures it has reasonably good impact properties. It is also suitable for a variety of elevated temperature applications. For maximum wear and abrasion resistance the steel can be nitrided to give a shallow depth wear resistant case. Flame or induction hardening of 708M40T can give a case hardness of 50HRc or higher.

**Alternative alloy steel grades we supply**

605M36 | 709M40 | 817M40 | 826M40 | 835M30
535A99 | 080A15 | 655M13 | 722M24 | 905M39

## Form of Supply

West Yorkshire Steel are stockholders and suppliers of 708M40T round bar and flat section bandsaw cut. Diameters in 708M40T can be sawn to your required lengths as one offs or multiple cut pieces. 708M40T 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 enquiry.

- Flat
- Plate
- Diameter

## Applications
Commonly used for general engineering applications 708M40T is suitable for applications such as high tensile shafts, bolts and nuts, gears, pinions spindles and the like.

## Analysis

| | | | |
|---|---|---|---|
| Carbon | 0.36-0.44% | Silicon | 0.10-0.35% |
| Manganese | 0.70-1.00% | Chromium | 0.90-1.20% |
| Molybdenum | 0.20-0.40% | Phosphorous | 0.035% max |
| Sulphur | 0.05% max | | |

## Forging
Pre heat carefully, then raise temperature to 850-1200°C for forging. Do not forge below 850°C. After forging cool slowly in still air.

## Annealing
Heat the 708M40T slowly to 680-700°C. Cool in air.

## Hardening
This steel grade is commonly supplied ready heat treated. If further heat treatment is required annealed 708M40 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.

## Tempering
Heat carefully to a suitable temperature selected by reference to a tempering chart or table. Soak at the temperature for 2 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 reduce the impact value.

## Typical Mechanical Properties*

| Condition | Tensile $N/mm^2$ | Yield $N/mm^2$ | Elongation % | Izod KCV J | Hardness Brinell |
|---|---|---|---|---|---|
| S | 777-925 | 555 | 13 | 22 | 223-277 |
| T | 850-1000 | 650 | 13 | 35 | 248-302 |
| U | 925-1075 | 755 | 12 | 42 | 269-331 |

(subject to ruling section*)

## 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 steel 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 708M40T alloy steel.

## Certification
708M40T alloy steel is available with cast and analysis certificate or a BS EN 10204 3.1 mill certificate, please request when placing any orders.

## Quality Assured Supply
708M40T is supplied in accordance with our ISO 9001:2015 registration.

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