

# 709M40T (EN19T)

THROUGH HARDENING ENGINEERING STEEL

We are a division of the Smiths Metal Centres Limited Group

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**709M40T (EN19T)** is a low alloy engineering steel containing chromium and molybdenum for good strength and wear resistance.

The product is a through-hardening steel alloy which we supply in bright bars. The engineering product benefits from high tensile and yield strength and good wear resistance and toughness. Good fatigue resistance means that the alloy works well under repetitive loads.

## Chemical Composition (weight, %)

	C	Si	Mn	P	S	Cr	Mo
Min.	0.36	0.10	0.70			0.90	0.25
Max.	0.44	0.40	1.00	0.035	0.040	1.20	0.35

\* Properties as per BS 970

## Corrosion Resistance:

The material provides good corrosion resistance, but product performance is less impressive than stainless steel. The alloy benefits from good atmospheric and alkaline resistance but is vulnerable to acid and chloride. Protective coatings by carburising, nitriding, black oxide and plating can improve corrosion resistance.

## Machining and Welding:

The alloy is machinable and weldable using typical methods. We advise machining with suitable lubricants and cutting tools (carbide or high-speed steel).

The alloy requires preheating before welding. Post-weld heat treatment may be necessary, dependent on the intended application. The welding process includes using a low-hydrogen filler material to avoid cracking. Both options are straightforward following these methods.

The product finds use in applications requiring high mechanical strength, toughness and wear resistance. **709M40T** offers impact and cracking resistance under stress. The alloy is suitable for component and precision machining.

## Applications:

Typical commercial applications for **709M40T** include:

- Gears, shafts, and hydraulic components
- Oil and gas industry components
- Turbine shafts and rotor blades
- Bearings, gearboxes, axles and spindles

Supported markets include aerospace, automotive, oil and gas, power generation and general engineering.

We stock **709M40T** in round and square bars of various diameters. We supply the product in standard lengths or cut to your specific size requirements.