

EN19T (709M40T)

HIGH STRENGTH ENGINEERING STEEL

PRODUCT OVERVIEW

EN19T (709M40T) is a bright drawn engineering steel which is suitable for a variety of commercial applications where high tensile strength and high load strength is a requirement. Benefitting from added molybdenum, EN19T not only offers high tensile strength but also high shock and load tolerance characteristics. Supplied in the 'T' condition, the steel's tensile strength performance can be as high as 1000 N/mm².

MACHINABILITY

EN19T (709M40T) can be machined to fine dimensional tolerances and is therefore highly suitable in the production of precision components. Machinability of the steel is generally good though the product is more difficult to machine when compared to free machining engineering steels. A high-quality appearance can also be achieved by using carbide tipped tools. EN19T (709M40T) displays good ductility and resistance to wear – the grade can also be flame induction hardened or nitrided to maximise the wear and abrasion characteristics of the material. This can result in a core hardness of 50 HRC or greater.

EN19T is also suitable for use in elevated temperature applications whilst offering reasonable impact properties in low temperature atmospheres.

MATERIAL SPECIFICATIONS

BRITISH BS 970:1991	709M40T
BRITISH BS 970:1995	EN19T
GERMAN DIN	42CrM04
FRENCH AFNOR	42CD4
SWEDISH SS	2244
AMERICAN SAE	4140
EUROPEAN STEEL NO.	1.7225
EUROPEAN STEEL NAME	42CrM04
EUROPEAN STANDARD	EN10277-5

PRODUCT AVAILABILITY

A variety of shapes and sizes supplied in the 'T' condition.



OTHER CHARACTERISTICS

EN19T (709M40T) is classed as a low alloy chromium molybdenum through-hardening steel. Unlike the majority of engineering steels, EN19T does offer fair corrosion resistance. Due to the materials' high tensile strength, EN19T is suitable for high-load applications such as gearboxes. Initially, EN19T was developed and introduced specifically for the automotive and machine tool market although now attracts a much broader customer base, extending into new market areas such as oil, gas and petrochemical. EN19T (709M40T) lends itself well to any commercial application where strength is a primary consideration.

EN19T (709M40T) is produced to much tighter sectional tolerances when compared to general mild steel. This creates a flatter, straighter material with a much more consistent cross structure and this consistency will help to reduce your machining costs. We supply EN19T in a wide range of sizes which often negates the need for you to machine the material down.

FOR CHEMICAL AND MECHANICAL PROPERTIES, PLEASE REFER TO THE REVERSE SIDE OF THIS TECHNICAL DATASHEET

PRODUCT BENEFITS

- High tensile and load strength
- High shock and load tolerance
- Good ductility and wear resistance
- Can be flame induction hardened or nitrided
- Suitable for elevated temperature applications
- Reasonable impact properties at low temperature
- Supplied in the 'T' condition

APPLICATIONS

EN19T (709M40T) is a popular engineering steel for high strength applications and therefore has a broad market audience. Examples include:

- Gearboxes, axles and crankshafts
- Connecting rods, gears
- High tensile bolts, studs and fasteners
- Propeller shaft joints, rifle barrels
- Automotive and oil & gas sector applications

CHEMICAL COMPOSITION (weight %)

	C	Mn	Cr	Mo	Si	S	P
Min	0.35	0.50	0.90	0.20	0.10		
Max	0.45	0.80	1.50	0.40	0.35	0.05	0.035

MECHANICAL PROPERTIES (subject to ruling section)

Condition	Tensile N/mm ²	Yield N/mm ²	Elongation %	Izod KCVJ	Hardness Brinell
S	775 - 925	555	13	22	223 - 277
T	850 - 1000	680	13	50	248 - 302
U	925 - 1000	755	12	42	269 - 331

ABOUT THAMES STOCKHOLDERS

Thames Stockholders is one of the UK's leading suppliers of engineering steels. We stock EN19T (709M40T) in a variety of shapes and sizes which are supplied in the 'T' condition. We offer our stock products to both domestic and International customers. We can also process your products internally and cut your material to your exact size requirements. With ideal proximity to the UK's main motorway network and ports, our location is ideal for the supply and distribution of high-quality engineering steels.

To discover more about our products and to receive a competitive quotation, please call Thames Stockholders today to speak to a member of our technical team on +44 (0)20 8805 3282.