

# EN16 (605M36T)

## HIGH STRENGTH, HIGH TENSILE ENGINEERING STEEL

### PRODUCT OVERVIEW

Known as a commercially popular 'all-rounder', EN16 (605M36T) is a low alloyed manganese-molybdenum through-hardening steel. Offering high strength and tensile characteristics, EN16 displays similar mechanical properties to EN8 but benefits from improved frictional wear, shear loading and shock resistance. EN16 is considered to be a viable alternative to other steel specifications containing chromium and nickel. EN16 (605M36T) also offers excellent ductility and is readily machinable.

The equivalent British specification for EN16 is 605M36T.

### MACHINABILITY

Machinability of EN16 (605M36T) is generally good although generous amounts of lubricant must be used throughout the machining process so that the steel does not rip in a similar fashion to EN8 under the same conditions. EN16 is more difficult to polish to a bright finish when compared with other engineering steels in the range.

EN16 can be hardened and tempered to the T condition. It is an ideal steel product for use in greater tensile strength applications achieving an overall strength of 770 N/mm<sup>2</sup> in normal use, although even greater strength can be achieved in smaller sections (up to 930 N/mm<sup>2</sup>). EN16 (605M36T) is highly suitable for use in most high load and shock applications – due to the ductility of the material it has plenty of 'give' before breaking and resists shearing / bending. EN16 does not suffer from temper embrittlement when heated. EN16 offers good hardenability up to a diameter of 39mm and can be welded although a precautionary pre / post heat treatment is advisable.

### PRODUCT AVAILABILITY

Bar

### MATERIAL SPECIFICATIONS

BRITISH BS 970:1991	605M36T
BRITISH BS 970:1955	EN16T



### PRODUCT CONSISTENCY

EN16 benefits from being a bright steel, cold drawn material because it offers good dimensional precision and a consistent cross-section; it is straighter and flatter than a comparable mild steel product, which in turn results in more cost-effective machining. When purchasing from Thames, we offer a depth of stock which is in closer incremental sizes. This means that you can purchase EN16 (605M36T) bright steel cold drawn bars from us that are closer to your finished size requirements. This is of considerable benefit to engineers and fabricators because in certain cases there may be no need to machine the material down. Our ability to cut bars to size using our in-house processing facilities also has a positive impact on the supply chain process, especially as we can offer rapid response times.

The only potential downside in the use of EN16 (605M36T) is the raw material cost which can be a little higher than other engineering steel products, however the steel's versatile characteristics make it a popular choice.

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

## PRODUCT BENEFITS

- A commercially popular 'all-rounder'
- High strength and tensile characteristics
- Improved frictional wear
- Good loading and shock resistance
- Excellent ductility
- Readily machinable
- Versatile

## APPLICATIONS

EN16 (605M36T) is a versatile and popular engineering steel and therefore has a wide range of commercial applications. Examples include:

- Connection rods, pistons, high load couplings
- Hubs, bolts, shafts and axles
- Crankshafts, lifting gear
- Applications requiring high shock resistance

## CHEMICAL COMPOSITION (weight %)

	C	Mn	Mo	Si	S	P
Min	0.30	1.30	0.20	0.10		
Max	0.40	1.80	0.35	0.35	0.05	0.035

## MECHANICAL PROPERTIES (subject to ruling section)

Condition	Tensile N/mm <sup>2</sup>	Yield N/mm <sup>2</sup>	Elongation %	Izod KCVJ	Hardness Brinell
R	700 - 850	525	17	28	201 - 255
S	775 - 925	585	15	50	223 - 277
T	850 - 1000	680	13	50	248 - 302

## ABOUT THAMES STOCKHOLDERS

Thames Stockholders is one of the UK's leading suppliers of engineering steels. We stock EN16 (605M36T) in bright bar which is 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.