

# 817M40 (EN24)

LOW ALLOY STEEL FOR AEROSPACE APPLICATIONS

We are a division of the Smiths Metal Centres Limited Group

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Page: 1 of 1



**817M40** is a low-alloy steel commonly used for applications requiring high tensile strength, toughness, and fatigue resistance.

It is also known as EN24, AISI 4340, or 34CrNiMo6. The composition of **817M40** steel typically includes carbon, chromium, nickel, molybdenum, and manganese.

### Chemical Composition (weight, %)

	C	Si	Mn	P	S	Cr	Mo	Ni
Min.	0.36	0.10	0.45			1.00	0.20	1.30
Max.	0.44	0.40	0.70	0.035	0.040	1.40	0.35	1.70

\* Properties as per BS 970

### Aerospace Grade:

**817M40** is a British aerospace-grade steel commonly used in the aerospace industry for high-strength applications. It is classified as a low-alloy steel. It is often called an "aerospace-grade" steel due to its high-performance characteristics and ability to withstand demanding environments. This grade is also used in other industries, such as motorsports and oil and gas, where high strength and toughness are required.

### Fatigue Resistance:

The steel has excellent fatigue resistance, which means it can withstand cyclic loading without failing. The fatigue resistance of **817M40** steel is due to its high strength, toughness, and the presence of alloying elements such as nickel and molybdenum. These elements improve the steel's resistance to fatigue by increasing its resistance to crack initiation and propagation.

### Availability:

We stock **817M40** in round and square bars.

### Benefits:

- High strength
- Fatigue-resistant material
- Versatile
- Heat treatable

### Heat-treatment:

Heat treatment can further improve the material, such as quenching and tempering. Heat treatment can enhance the steel's microstructure and mechanical properties, increasing its strength, toughness and wear resistance. Coatings such as chromium or tungsten carbide can also be applied to the surface of the steel to further increase its wear resistance.

### Wear Resistance:

The steel has good wear resistance, making it suitable for applications involving sliding or abrasive wear and where frequent maintenance or replacement is not desirable.

