

# EN3B (080A15)

## LOW CARBON ENGINEERING STEEL

### PRODUCT OVERVIEW

Utilised in a variety of general engineering applications, EN3B (080A15) is a bright mild steel product which is used in general engineering and welding applications. EN3B is often specified where good welding characteristics are required as the material is easily welded. It is suitable in applications where heavy stresses and heat treatments are generally not involved. At one time, EN3B was one of the most popular bright mild steel products on the market, however it has been replaced in certain application areas with steel products offering superior chemical composition.

### EXCELLENT WELDABILITY

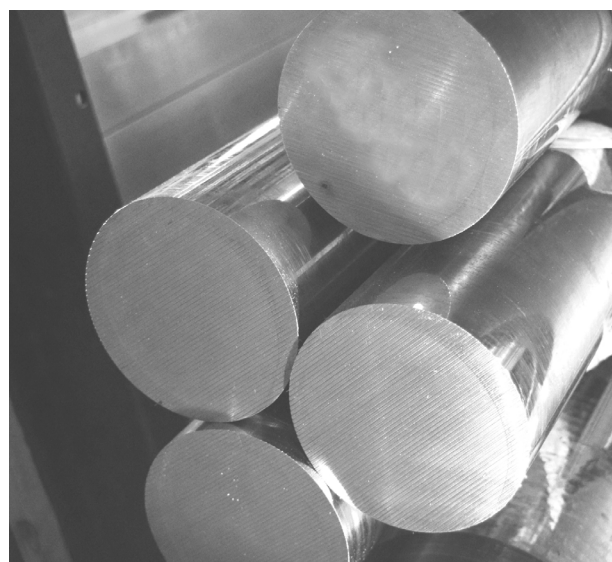
EN3B (080A15) is commonly supplied as bright drawn bar although it can also be supplied hot rolled. It is chosen specifically for its welding capabilities as it maintains good flow and strength characteristics during and after welding. EN3B is a low strength material and will yield and distort under stress. It will also bend before shearing therefore the material is not suitable for stressed applications. Therefore, it is the weldability of EN3B that defines its use – if good weldability is not a consideration and greater machinability is required then a free cutting steel such as EN1A should be considered as an appropriate alternative.

### MATERIAL SPECIFICATIONS

British BS 970:1991	080A15
Swedish SS	1370
German DIN	CK20
American SAE	1021
French AFNOR	XC18
European Standard	EN10083-1
European Steel No.	1.1151
European Steel Name	C22E

### PRODUCT AVAILABILITY

Round bar, flat bar, square bar and hexagon.



### MACHINABILITY

EN3B can be machined at reasonably high speed with moderate feeds; although machinability is relatively easy it should be noted that surface ripping is a common problem unless an adequate lubricant is used during the machining process. The surface finish of EN3B (080A15) is also good after only minimal polishing. Screw cutting is also a simple task when performed with a suitable cutting oil.

Wear resistance of EN3B can be improved with case hardening but hardenability is generally poor. Generally, bright mild steels are superior when compared with black hot rolled steel. The dimensions, straightness and flatness of hot rolled products are not particularly precise whilst bright drawn steels are produced to much tighter dimensional tolerances. As a consequence, EN3B can be purchased in incremental sizes which will be much closer to your finished size requirements.

When supplied in the cold drawn condition, EN3B (080A15) can endure higher levels of stress, especially on smaller diameters.

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

## PRODUCT BENEFITS

- Excellent weldability
- Used in production of lightly stressed parts
- Can be machined at reasonably high speeds
- Good dimensional tolerances
- Good surface finish
- For general engineering applications
- Used extensively in welding applications

## APPLICATIONS

EN3B (080A15) is used in a broad range of commercial applications – for example, bright flats are used commonly in the tooling industry. Other engineering applications include:

- Lightly stressed fixing such as shafts, spacers, hubs
- Bushings and bolts
- Brackets, linkages and baseplates
- Welded and riveted structures
- Forgings, machine parts and hot pressings

## CHEMICAL COMPOSITION (weight %)

	C	Mn	Si	P	S
Min	0.13	0.70	0.10		
Max	0.18	0.90	0.40	0.05	0.05

## MECHANICAL PROPERTIES

Condition	Tensile Strength MPa min.	Yield Strength MPa min.	Elongation %
Cold drawn	560	440	110
Turned & Polished	430	215	21

## ABOUT THAMES STOCKHOLDERS

Thames Stockholders is a stockholder and one of the UK's leading suppliers of engineering steels. We stock EN3B (080A15) in round, flat, square and hexagonal bar and offer our products to both UK 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.