Contact: **01937 584440**
sales@westyorkssteel.com

EN40B Nitriding Steel

EN40B nitriding steel stockholders and suppliers, delivering to the whole of the UK. EN40B is a chromium molybdenum steel specification usually supplied in the hardened and tempered ‘T’ condition, which offers high wear resistance together with good toughness and ductility. EN40B in T condition has a tensile of 850-1000 N/mm². It is characterised by its suitability for nitriding, which can give a hard wear resistant case in the range of 61-65Rc. The relatively low temperature of the nitriding process produces EN40B components with a scale free surface, with minimum distortion during the heat treatment process. EN40B may be used in its supply condition (usually ‘T’) for applications and components which require a high tensile steel strength and high creep strength at temperatures up to 600°C.

We welcome export enquiries for nitriding steel. Contact our sales office and consult our shipping policy for further details.

Alternative grades we supply

EN16T | EN19T | EN24T | EN26W | EN30B | EN31 | EN32 | EN36 | EN41B |

Form of Supply

West Yorkshire Steel are steel stockholders and suppliers of round bar and some flat bar sizes. EN40B can be sawn to your required lengths as one offs or multiple cut pieces. EN40 EN40B EN40BT ground steel bar can be supplied, providing a high tensile engineering steel precision ground bar to tight tolerances.

Contact our experienced sales team who will assist you with your EN40B alloy nitriding steel enquiry.

- Flat
- Diameter

Applications

EN40B is suited for applications that require excellent resistance to wear and abrasion combined with high fatigue strength. Typical applications include shafts, extruders, gear wheels, drills, guides, pins, spindles and bolts. Widely used in the automotive, textile and general engineering industries.

Analysis

Carbon	0.20-0.30%	Chromium	2.90-3.50%
Silicon	0.10-0.35%	Nickel	0.40% max.
Manganese	0.40-0.65%	Phosphorous	0.05% max
Molybdenum	0.40-0.70%	Sulphur	0.05% max.

Forging

Preheat carefully, then raise temperature to 850-1200°C for forging. Do not forge below 850°C. After forging EN40B alloy steel, cool slowly in still air.

Annealing

Heat slowly to 680-700°C. Cool in air.

Hardening

EN40BT is supplied ready heat treated. If further heat treatment is required annealed EN40B should be heated slowly to 880-910°C and after adequate soaking at this temperature quench in oil/polymer or water. Temper as soon as tools reach room temperature.

Tempering

Heat carefully to a suitable temperature, selected by reference to a tempering chart or table (usually between 570-700°C). Soak at the temperature for 2 hours per 25mm of ruling section, then allow to cool in the air.

Typical Mechanical Properties*

Condition	Tensile N/mm²	Yield N/mm²	Elongation %	Izod KCV J	Hardness Brinell
Condition	Tensile N/mm²	Yield N/mm²	Elongation %	Izod KCV J	Hardness Brinell
S	775-925	585	15	50	223-277
T	850-1000	680	13	50	248-302
U	925-1075	755	12	42	269-331

*subject to ruling section

Heat Treatment

Heat treatment temperatures, including rate of heating, cooling and soaking times will vary due to factors such as the shape and size of each steel component. Other considerations during the heat treatment process include the type of furnace, quenching medium and work piece transfer facilities. Please consult your heat treatment provider for full guidance on heat treatment of EN40B alloy steel.

Certification

EN40B alloy steel is available with a cast and analysis certificate or a BS EN 10204 3.1 mill certificate, please request when placing any orders.

Quality Assured Supply

EN40B is supplied in accordance with our ISO 9001:2015 registration.