

BS4659 BO1 Tool Steel

BS 4659 BO1 tool steel stockholders and suppliers, delivering to the whole of the UK. West Yorkshire Steel are suppliers of BO1 tool steel round bar, flat bar and plate. BO1 is an oil hardening type tool steel which is commonly supplied in the annealed condition. A popular tool steel grade BO1 offers good durability combined with excellent wear resistance and holds a good cutting edge. With these properties it is a popular general purpose tool steel often used where the expense of a high carbon high chromium tool steel would not be justified.

We welcome export enquiries for tool steel. Please contact our sales office and consult our [shipping policy](#) for further details.

Related Specifications

ASTM A681 DIN 17350 BS EN ISO 4957

Alternative BS4659 tool steel grades we supply

[BD2](#) | [BD3](#) | [BO2](#) | [BA2](#) | [BS1](#) | [BH13](#) | [BP20](#) | [BP30](#) | [BM2](#) | [BM35](#) | [BM42](#)

Form of Supply

West Yorkshire Steel are stockholders and suppliers of tool steel BO1 in round bar, flat bar and plate. Round bars can be bandsaw cut to your required lengths as one offs or multiple pieces. Rectangular sections can be sawn from flat bar or plate to your specific sizes. BO1 ground tool steel bar can be supplied, providing a quality precision ground bar to tight tolerances.

Contact our experienced sales team who will assist you with your BS 4659 BO1 tool steel enquiry.

- Sheet
 - Plate
 - Flat
 - Diameter
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Ground Flat Stock

BO1 is available as precision ground flat stock or gauge plate. Stocks are available in a wide range of metric and imperial sizes. Metric sizes are supplied in 500mm and 1000mm lengths and imperial sizes are supplied in 18" and 36" lengths. Subject to size suitability and availability non standard sizes and lengths can be produced in BO1.

BO1 Analysis

Carbon	0.85-1.00%	Manganese	1.10-1.35%
Silicon	0.40% max	Tungsten	0.40-0.60%
Vanadium	0.25% max	Chromium	0.40-0.60%

Forging

Heat the BO1 slowly and begin forging at 980-1000°C. Do not forge below 800°C. After forging cool slowly, preferably in a furnace.

Annealing

BO1 is supplied in the annealed condition. Re-annealing will only be necessary if the steel has been forged or hardened. To anneal, heat the BO1 steel slowly to 760-780°C, soak well and allow to cool in the furnace to 500°C or below, before withdrawing. Annealed hardness will be about 229 Brinell.

Stress Relieving

Heavily machined parts, ground or otherwise and subject to cold work, benefit from stress relieving prior to hardening. Heat the BO1 steel carefully to 670-700°C, soak well and allow to cool in air.

Hardening

Pre heat slowly to 300-500°C before raising to the hardening temperature of 780-820°C. Pre heating is recommended for complex sections. Soak the component allowing 30 minutes per 25mm of ruling section before quenching. Light sections can be quenched in oil from the lower end of the hardening temperature range. Tempering of the tool steel is always necessary after hardening.

Tempering

Temper between 150°C and 300°C. Soak well at the selected temperature and soak for at least one hour per 25mm of total thickness.

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 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 BS4659 BO1.

Quality Assured Supply

BS4659 BO1 tool steel is supplied in accordance with our ISO 9001:2015 registration.