

O2 Tool Steel

O2 tool steel stockholders and suppliers, delivering to the whole of the UK. West Yorkshire Steel are stockholders and suppliers of O2 tool steel round bar. O2 is an oil hardening tool steel type supplied in the annealed condition and characterised by its characteristics of offering good durability, excellent wear resistance and its ability to hold a good cutting edge. O2 tool steel is a good quality 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

AISI ASTM A681 DIN 17350 BS EN ISO 4957

Alternative tool steel grades we supply

[O1](#) | [D2](#) | [D3](#) | [D6](#) | [A2](#) | [S1](#) | [H13](#) | [P20](#) | [P20S](#) | [420](#) | [1.2083](#) | [2767](#) | [M2](#) | [M42](#) | [1.1730](#)

Form of Supply

West Yorkshire Steel are stockholders and suppliers of O2 flat bar and round bar. O2 ground steel bar can be supplied, providing a high quality tool steel precision ground bar to close tolerances.

Contact our experienced sales team who will assist you with your O2 tool steel enquiry.

- Plate
 - Flat
 - Diameter
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Applications

Typical applications for O2 tool steel include medium run dies, press tools, drawing punches, broaches, bushings, lathe centres, chuck jaws, master cavity sinking hobs, plug gauges, thread gauges, thread cutting tools and precision measuring tools. It is also a popular tool steel for cams, cloth cutting knives, cold taps, reamers, collets, cutting hobs, strip slitting cutters, trimmer dies, tube expander rolls, plastic moulds and woodworking knives.

Typical Analysis

Carbon	0.90%	Manganese	1.90%
Chromium	0.50%	Silicon	0.35%
Vanadium	0.15%		

Forging

Heat uniformly to 1000°C. Forge within a range of 850-1050°C reheating if necessary. Cool slowly (preferably in a furnace) to avoid setting up stresses.

Annealing

O2 tool steel is supplied in the annealed and machineable condition. Re-annealing will only be necessary if the steel has been forged or hardened. To anneal, heat uniformly to 720°C, equalise, then furnace cool (hardness about 229 Brinell). Fully machined tools in grade O2 should be packed during annealing.

Hardening

Heat uniformly to 790-820°C until heated through. (If possible pre-heat at 300-500°C). Allow thirty minutes per 25 millimetre of ruling section and quench immediately in oil.

Martempering

Martempering of O2 is an alternative hardening procedure which may be used when suitable salt bath equipment is available.

Tempering

Heat the O2 uniformly and thoroughly at the selected tempering temperatures and hold for at least one hour per inch of total thickness.

Temperature [°C]	100	150	200	250	300	400
Hardness [HRc]	64	63	62	60	56	50

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 O2 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 tool steels.

Final Grinding

Select the correct grade of wheel in consultation with the grinding wheel manufacturer. Ensure the grinding wheel is in good condition by means of a suitable dressing tool. Wet grinding is a preferable option using a copious supply of coolant. If dry grinding is resorted to then use a very soft wheel.

Quality Assured Supply

O2 tool steel is supplied in accordance with our ISO 9001:2015 registration.