

1.2080 Tool Steel

1.2080 steel suppliers and stockholders delivering to the whole of the UK. West Yorkshire Steel supply high carbon high chromium 1.2080 flats cut from block and a limited range in round bar diameters. This tool steel specification is noted for its resistance to abrasion. It offers excellent dimensional stability in hardening. After heat treatment the tool steel is hard, durable, dense, and is immune from sinking in use. It offers a measure of corrosion resistance when polished. In general, the applications of 1.2080 tool steel resemble those of [1.2379](#) but it should be remembered that 1.2080 has better wear resistance of the two steels and is preferred for such items as shear blades. Owing to its higher wear resistance, 1.2080 tool steel is slightly more difficult to grind than 1.2379.

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

Form of Supply

West Yorkshire Steel are stockholders and suppliers of 1.2080 tool steel block. Rectangular pieces can be sawn from flat bar or block to your specific sizes as 1 offs or multiple cut pieces.

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

- Flat
- Diameter

Applications

As a quality tool steel 1.2080 is suitable for applications such as complex blanking and forming tools for long runs and for hard and abrasive materials. It is commonly used for other applications such as brick and tile mould liners, master hobs for cold hobbing plastic moulds, tableting punches and sleeves for corrosive powders.

Analysis

Carbon	1.90-2.20%	Chromium	11.00-13.00%
Manganese	0.20-0.60%	Sulphur	0.03% max
Silicon	0.10-0.60%	Phosphorous	0.03% max

Ground Flat Stock

Precision ground flat stock / gauge plate can be produced using 1.2080 tool steel. Subject to size suitability and availability pieces can be produced in approximately 2 to 3 weeks. Standard and non-standard sizes are available.

Forgings

Pre-heat at 900°-950°C then raise temperature to 1050°-1100°C. Soak until uniformly heated. This tool steel is relatively hard at elevated temperature. Therefore, initial hammer blows must be light and the temperature must not be allowed to fall below 1020°C until the metal begins to flow. Final forging should not be done below 900°C.

Annealing

Supplied in the annealed and machineable condition re-annealing will only be necessary if the steel has been forged or hardened by the toolmaker. To anneal, heat slowly and uniformly to 900°C. Soak for three to four hours and allow to cool in the furnace to room temperature. Re-heat to 800-1040°C and again soak for three to four hours. Allow to cool in the furnace to room temperature.

Stress Relieving

When tools made from 1.2080 tool steel are heavily machined, ground or otherwise subjected to cold work, the relief of internal strains is advisable before hardening to minimise the possibility of distortion. Stress relieving should be done after rough machining. To stress relieve, heat the component to 600-650°C. Soak well and cool in the furnace or in air. The tools may then be finish machined before hardening.

Hardening

It is preferable to heat the tools in a controlled atmosphere. If this is not possible, pack hardening is recommended. A reducing atmosphere is desirable. Pre heat the tool steel component to 750-800°C. and allow to soak at this temperature. The tools may then be brought up to 1000-1040°C for air cooling, or 980°C for oil quenching. Soak thoroughly at the temperature for thirty minutes per 25mm of ruling section, then cool or quench accordingly. It is important not to exceed 1020°C when heating for hardening.

Tempering

Double tempering is recommended. Tempering of 1.2080 tool steel should be done with the least possible delay after hardening, preferably when the tools are still hand warm. Select a suitable tempering temperature, bearing in mind the service requirements. Heat slowly and uniformly. When the component has reached the desired temperature, soak for at least sixty minutes. The second tempering should be a repetition of the first.

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 tool 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.

Temperature [°C]	150	200	250	300	350	400
Hardness [HRc]	62-61	61-60	60-59	57-56	56-55	56-55

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

1.2080 tool steel is supplied in accordance with our ISO 9001:2015 registration.