

X210Cr12 Steel

X210Cr12 steel suppliers delivering throughout the UK. West Yorkshire Steel supply in flats and a limited range in round bar. This specification is noted for its resistance to abrasion. It offers excellent dimensional stability in hardening. When heat treated this steel is hard, durable and dense and offers a measure of corrosion resistance when polished. X210Cr12 is suited for applications requiring high wear resistance.

We welcome export enquiries for X210Cr12 tool steel. Contact our sales office and consult our [shipping policy](#) for further details.

Form of Supply

West Yorkshire Steel supply fully annealed X210Cr12 steel round and flat. Flat section can be sawn to you required dimensions. Round bar can be supplied as one offs or multiple cut pieces.

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

- Flat
- Diameter

Applications

As a quality tool steel X210Cr12 is suitable for applications such as complex blanking, forming tools, punches, brick and tile mould liners.

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 X210Cr12 steel. Subject to size suitability and availability pieces can be produced in approximately 2 to 3 weeks. Standard and non-standard sizes can be produced.

Forgings

Pre-heat the X210Cr12 at 900°-950°C then raise temperature to 1050°-1100°C. Soak the steel until uniformly heated. This tool steel is relatively hard at elevated temperature. Therefore, initial hammer blows must be light and the temperature must not fall below 1020°C until the metal begins to flow.

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

If the tools made from X210Cr12 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 carried out after rough machining. To stress relieve, heat the component to 600-650°C. Soak well and cool in the furnace or air.

Hardening

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. Then heat up to 1000-1040°C for air cooling, or 980°C for oil quenching. Soak thoroughly at the temperature for half an hour per 25mm of ruling section, then cool or quench accordingly.

Tempering

Double tempering is recommended. Tempering of X210Cr12 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 temper 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. It is advisable to consult a heat treatment specialist for full guidance on heat treatment.

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

Final Grinding

Always select the correct grade of wheel in consultation with a grinding wheel manufacturer. Ensure the grinding wheel is in good condition. 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

X210Cr12 steel is supplied in accordance with our ISO 9001:2008 registration.