Contact: **01937 584440**
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X155CrVMo12-1 Steel

X155CrVMo12-1 UK steel suppliers delivering to the whole of the country. West Yorkshire Steel are suppliers of this high carbon high chromium steel in bar, plate, sheet and rectangular block which can be cut to your requirements. X155CrVMo12-1 offers good toughness with very high wear resistance. It hardens in air with minimum distortion and offers a measure of corrosion resistance when polished. Suitable for tools operating under conditions of severe wear and abrasion or as an alternative to oil hardening grades when long runs are needed.

We welcome export enquiries for X155CrVMo12-1. Contact our sales office and consult our shipping policy for further details.

Form of Supply

Supplied fully annealed X155CrVMo12-1 is available in round bar, flat bar, plate and block. Round bar can be sawn to length as one offs or cut pieces. Rectangular sections can be sawn from flat or block to your specific sizes. Ground bar can be supplied, providing a quality precision ground bar to tight tolerances.

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

- Sheet
- Plate
- Flat
- Diameter

Applications

This grade is used in a wide variety of tooling applications. Typical applications include punching and blanking dies for hard abrasive materials generally. Other applications include deep drawing dies, cutting tools, dies, sheet metal forming rolls and shear blades.

Analysis

Carbon	1.45-1.60%	Chromium	11.00-13.00%
Manganese	0.15-0.45%	Phosphorous	0.030% max
Molybdenum	0.60-0.80%	Sulphur	0.030% max
Vanadium	0.90-1.10%		

Ground Flat Stock

Subject to size suitability and availability pieces can be produced as ground flat stock in approximately 3 to 4 weeks. Standard and non-standard sizes can be made.

Forging

Heat the steel slowly and uniformly to 700°C then more rapidly to 900-1040°C. After forging slow cool.

Annealing

X155CrVMo12-1 is supplied in the annealed and machineable condition. Re-annealing is only necessary if the steel has been forged or hardened. To anneal, heat slowly and uniformly to 900°C. Soak for up to three to four hours and then allow to cool in the furnace. Re-heat to 800-1040°C and again soak for three to four hours. Allow the steel to cool in the furnace.

Stress Relieving

If heavily machined, ground or otherwise subjected to cold work, the relief of internal strains it is advisable before hardening to minimise the possibility of distortion. Stress relieving should be carried out after rough machining. To stress relieve, heat the steel to 600-650°C. Soak well and cool in the furnace or in air.

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 X155CrVMo12-1 steel up to 750-800°C. and allow enough time to soak at this temperature. The temperature should then be brought up to 1020-1040°C for air cooling, or 980°C for oil quenching. Soak thoroughly at temperature for thirty minutes per 25mm of ruling section, then cool or quench accordingly.

Tempering

Tempering should be done with the minimum possible delay after hardening and 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. Double tempering of Double tempering of X155CrVMo12-1 is recommended.

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

Heat Treatment

Heat treatment temperatures, 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.

Final Grinding

Select the correct grade of wheel in consultation with a 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 soft wheel.

Quality Assured Supply

X155CrVMo12-1 steel is supplied in accordance with our ISO 9001:2008 registration.