

## X45NiCrMo4 Steel

**X45NiCrMo4 steel suppliers, delivering throughout the UK.** West Yorkshire Steel are suppliers of round, flat and plate. This grade is a nickel oil hardening steel, a good quality steel that achieves high impact with compressive strength. It is suitable for applications demanding extra wear resistance. Achieving full hardenability and excellent toughness this steel grade is widely used for plastic mould applications.

We welcome export enquiries for X45NiCrMo4. Contact our sales office and consult our [shipping policy](#) for further details.

### Form of Supply

We are suppliers of annealed X45NiCrMo4 round, flat bar, plate and block. Round bar can be sawn to your required lengths as one offs or multiple sawn pieces. Rectangular sections can be sawn from flat bar or block to your specific sizes. Ground material can be supplied, providing a quality precision ground bar to your required tolerances.

Contact our experienced sales team who will assist you with your X45NiCrMo4 steel requirements.

- Plate
- Flat
- Diameter

### Applications

Typical applications and components include plastic moulds, blades, cutting tools, jaws and coining tools.

### Analysis

Carbon	0.40-0.50%	Chromium	1.20-1.50%
Manganese	0.15-0.45%	Silicon	0.10-0.40%
Sulphur	0.03% max	Nickel	3.80-4.30%
Phosphorous	0.03% max	Molybdenum	0.15-0.35%

## Forging

Heat the component slowly and uniformly to 1050°C. Re heat the X45NiCrMo4 as necessary and avoid working below a temperature of 850°C. After forging the steel cool slowly in furnace, thermoinsulating material.

---

## Annealing

As this grade is supplied in the annealed and machineable condition re-annealing will only be necessary if the steel has been forged or hardened. Heat the steel uniformly to 630-650°C. Soak well then slowly cool in the furnace to approximately 600°C and then cool in air.

---

## Stress Relieving

When dies produced in X45NiCrMo4 steel are heavily machined, it is recommended to stabilise just before finish machining in order to relieve machining strains. Heat to approximately 650°C soak well and allow to cool in air.

---

## Hardening

Pre heat the steel slowly and uniformly to a temperature between 650-700°C and soak thoroughly. Continue heating the component to a final hardening temperature of 840-870°C and allow the component to be heated through. Quench the steel in oil or cool in air.

---

## Tempering

Slowly heat the steel component uniformly and thoroughly to the selected tempering temperatures and hold the X45NiCrMo4 component at heat for one hour per 25mm of thickness, but for a minimum of two hours. Cool in air. This grade of steel can be hardened by vacuum furnace and gas quench processes.

<b>Temperature [°C]</b>	100	200	300	400	500	600
<b>Hardness [HRc]</b>	56	54	50	46	42	38

---

## Heat Treatment

Heat treatment temperatures, including rate of heating, cooling and soaking times can vary due to factors such as the shape and size of each X45NiCrMo4 steel component. Other considerations during the heat treatment process include the type of furnace, quenching medium and also the work piece transfer facilities. Please consult your heat treatment specialist for full guidance on heat treatment.

---

## Final Grinding

Select the correct grade of wheel by consulting with a grinding wheel manufacturer. Ensure the grinding wheel is of good quality by means of a suitable dressing tool. Wet grinding is preferable using a copious supply of coolant. If dry grinding is resorted to then use a softer wheel.

---

## Quality Assured Supply

X45NiCrMo4 grade of steel is supplied in accordance with our ISO 9001:2008 registration.