

## EN31 Steel

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**EN31 steel stockholders and suppliers, delivering throughout the UK.** West Yorkshire Steel are stockholders and suppliers of EN31 through hardening steel in round bar. EN31 is a quality high carbon alloy steel which offers a high degree of hardness with compressive strength and abrasion resistance.

We welcome export enquiries for EN31. Please contact our sales office and consult our [shipping policy](#) for further details.

### Related Specifications

100Cr6, AISI SAE E52100, 100Cr6, 2258, 100C6

### Alternative grades we supply

[EN16T](#) | [EN19T](#) | [EN24T](#) | [EN26W](#) | [EN30B](#) | [EN32](#) | [EN36](#) | [EN40B](#) | [EN41B](#) | [1.2510](#)

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## Form of Supply

West Yorkshire Steel supply EN31 steel in round bar. Diameters can be sawn to your required lengths as one offs or multiple cut pieces. EN31 ground alloy steel bar can be supplied, providing a quality precision ground bar to your required tolerances.

Contact our experienced sales team who will assist you with your EN31 steel enquiry.

- Diameter
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## Applications

Typical applications for EN31 steel include taps, gauges, swaging dies, ejector pins, ball and roller bearings. It is a good quality steel for wear resisting machine parts and for press tools which do not merit a more complex quality.

## Typical Analysis

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Carbon	0.90-1.20%	Manganese	0.30-0.75%
Chromium	1.00-1.60%	Sulphur	0.050% max
Silicon	0.10-0.35%	Phosphorous	0.050% max

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## Forging

Heat slowly and begin forging at 1000-1050°C. Allow sufficient time at the forging temperature for the steel to be thoroughly soaked through. Re heat as necessary and do not forge below 850°C. After forging EN31 steel, cool slowly preferably in a furnace.

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## Annealing

EN31 is usually supplied in the annealed and machineable condition. Re-annealing will only be necessary if the steel has been forged or hardened. To anneal, heat the EN31 steel slowly to 800-810°C, soak well and allow to cool in the furnace.

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## Stress Relieving

When parts are to be heavily machined, stress relieving will be beneficial prior to hardening. Heat the EN31 carefully to 700°C, soak well and allow to cool in air.

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## Hardening

Heat slowly to the hardening temperature of 800-820°C. Maintain until thoroughly soaked through. Plenty of time must be given for this soaking and then quench in oil.

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## Tempering

Temper according to the purpose for which the tools are required, generally between 150°C and 300°C. Soak well at the selected temperature and soak for at least one hour per 25mm of total thickness. Cool slowly in air.

<b>Temperature [°C]</b>	150	200	250	300
<b>Hardness [HRc]</b>	63-62	62-61	60-59	57-56

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## 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 EN31 component. Other considerations during the heat treatment process including the type of furnace, quenching medium and work piece transfer facilities. Please consult your heat treatment provider for full guidance on heat treatment of EN31.

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## Quality Assured Supply

EN31 is available with cast and analysis certification and supplied in accordance with our ISO 9001:2015 registration.