

EN45 Spring Steel

EN45 spring steel stockholders and suppliers, delivering to the whole of the UK. West Yorkshire Steel are suppliers and stockholders of EN45 silicon manganese spring steel, supplied in the as rolled condition. It is suitable for oil hardening and tempering. When used in the oil hardened and tempered condition EN45 offers excellent spring characteristics. EN45 is commonly used in the automotive industries for the manufacture and repair of leaf springs.

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

Related Specifications

BS970 1.0904 55Si7 55S6 55Si2Mn ASTM 9255
55SiMn7 250A53 250A57 C2133 55S2 55S6 56S7 55C2

Alternative spring steel grades we supply

[CS70](#) | [CS80](#) | [CS95](#) | [CS100](#) | [EN42](#) | [EN43](#) | [EN47](#) | [735A50](#) | [6150](#) | [301](#)

Form of Supply

West Yorkshire Steel are EN45 spring steel suppliers in flat bar and a small range of round bar sizes. We also have stock availability of EN45A which has a variation in carbon content to that of standard grade EN45 spring steel.

- Flat
- Diameter

Applications

EN45 is used widely in the motor vehicle industry and many general engineering applications. Typical applications include leaf springs, truncated conical springs, helical springs and spring plates.

Analysis

Carbon	0.50-0.60%	Phosphorous	0.05% max
Manganese	0.70-1.00%	Sulphur	0.05% max
Silicon	1.50-2.00%		

Forging

Preheat the EN45 carefully, then raise temperature to 1050°C for forging. After forging cool slowly, preferably in a furnace.

Annealing

Heat slowly to 640-680°C, soak well. Cool slowly in the furnace.

Hardening

Heat the steel slowly to 650-700°C and thoroughly soak. Continue heating the steel to the final hardening temperature of 870-930°C and allow the component to be heated through. Quench in oil.

Tempering

Temper the EN45 spring steel immediately after quenching whilst tools are still hand warm. Re-heat to the tempering temperature then soak for one hour per 25 millimetre of total thickness (2 hours minimum) Cool in air. For most applications tempering will be between 400-550°C.

Heat Treatment

Heat treatment temperatures, including rate of heating, cooling and soaking times etc. will vary due to factors such as the shape and size of each 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 EN45 spring steel grade.

Welding

We recommend you contact your welding consumables supplier who should provide you full details and information on welding EN45 spring steel.

Certification

This silicon manganese spring steel grade is commonly supplied in the as rolled condition and available with cast and analysis certification, please request when placing any orders.

Quality Assured Supply

EN45 spring steel is supplied in accordance with our ISO 9001:2015 registration.