



# 440B Stainless Steel

440B stainless plate, round and flat bar

## 440B stainless steel stockholders and suppliers, delivering throughout the UK.

440B is a high carbon high chromium type grade combining stainless steel properties with excellent hardness after heat treatment. 440B is very similar to the 440C grade but with a slightly lower carbon content, it attains a lower hardness than 440C but has slightly better corrosion properties. Its corrosion resistance properties are similar to 410 stainless steel, with optimum corrosion resistance of 440B achieved with a temper below 400°C. For 440B to achieve best corrosion resistance all surfaces must be free of scale, foreign particles, lubricants and coatings applied for drawing and heading. With its high carbon content 440B stainless steel annealed bar has similar machining characteristics to a high speed steel annealed grade.

### Related Specifications

1.4112 X90CrMoV18 ASTM A276  
UNS S44003 AISI 440

### Alternative stainless steel grades we supply

[17/4PH](#) | [FV520B](#) | [S31254](#) | [904L](#) | [316](#) | [310](#) | [304](#)  
[440B](#) | [440C](#) | [420](#) | [410](#) | [416](#) | [431](#)

### Form of Supply

West Yorkshire Steel are suppliers and stockholders of round bar. Diameters can be sawn to your required lengths as one offs or multiple cut pieces. We also offer 440B flat cut from large block. Pieces can be bandsaw cut to flat and square sections to your bespoke sizes. 440B ground steel bar can be supplied, providing a high quality precision bar to tight tolerances.



- Flat
- Diameter
- Plate

Contact our experienced sales team who will assist you with your 440B enquiry.

## Applications

Suitable for applications requiring a combination of excellent wear resistance with moderate corrosion resistance. 440B stainless steel is commonly used in the oil, gas, marine, food and medical industries. Typical applications include valve components, knives, bearings, surgical tools and cutlery.

## Analysis

Carbon	0.75-0.95%	Silicon	1.00% max
Manganese	1.00% max	Chromium	16.00-18.00%
Molybdenum	0.75% max	Sulphur	0.03% max
Phosphorous	0.04% max		

## Forging

Heat slowly and uniformly to 1180°C, allowing sufficient time for the steel to become heated through. Be careful not to overheat as this can cause a loss of toughness and ductility. Do not forge below 1010°C reheating if necessary. After forging cool slowly in furnace or thermoinsulating material, then anneal immediately. Air cooling after forging 440B may cause cracking.

## Annealing

Heat uniformly to 840-875°C. Soak and cool very slowly in the furnace.

## Hardening

Heat the 440B to 1010-1070°C, fully soak and quench in warm oil or air cool. Be careful not to overheat or full hardness will not be obtained.

## Tempering

When tempering 440B a Rockwell hardness of 58 HRc can be obtained. Temper for at least one hour. Tempering above 400°C is not recommended as this can cause a reduction in corrosion resistance and impact properties.

Temperature °C	150	200	250	300	350
Hardness HRc	58	56	54	53	54

## 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 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 440B stainless steel.

## Typical Mechanical Properties\*

Temp °C	Tensile (UTS) N/mm <sup>2</sup>	0.2% Yield N/mm <sup>2</sup>	Elongation (50.8mm) %	Hardness HRc	Reduction of Area
20	1930	1860	3	54	15

(\*hardened at 1040°C, oil quenched and tempered at 250°C)

## Certification

Stainless steel 440B grade is available with BS EN 10204 3.1 mill certificate, please request when placing any orders.

## Quality Assured Supply

440B stainless steel is supplied in accordance with our ISO 9001:2015 registration.



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