



416 Stainless Steel

416 stainless round bar

416 stainless steel stockholders and suppliers, delivering throughout the UK.

416 is a martensitic free machining stainless grade providing excellent machinability with reasonable strength and corrosion resistance. The higher sulphur content improves the machining and non-galling characteristics. 416 stainless steel is commonly supplied in the hardened and tempered but still machineable condition.

Related Specifications

1.4005 ASTM AISI BS970 416S21 UNS S41600
KE40A SUS

Alternative stainless steel grades we supply

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

Form of Supply

West Yorkshire Steel are suppliers and stockholders of round bar in grade 416 stainless. Diameters can be sawn to your required lengths as one offs or multiple cut pieces. Precision ground stainless steel bar can be supplied, providing a high quality ground bar to tight tolerances.



■ Diameter

Contact our experienced sales team who will assist you with your 416 enquiry.

Applications

Suitable for applications that require good strength, toughness and reasonable corrosion characteristics that are not too severe. It is suitable for components such as valves, screws, bolts, pumps and rods. 416 is widely used for general engineering and popular in the food and automotive industries.

Analysis

Carbon	0.09-0.15%	Silicon	1.00% max
Manganese	1.50% max	Chromium	11.50-13.50%
Molybdenum	0.60% max	Nickel	1.00% max
Sulphur	0.15-0.35%	Phosphorous	0.06% max

Corrosion Resistance

With its higher sulphur content 416 stainless steel has lower corrosion resistance to that of 410 stainless and all other 400 series stainless steel grades. It provides optimum corrosion resistance in the hardened and tempered condition. Allowing oxygen to circulate freely on the surface 416 stainless steel will form an oxide film which protects the surface. Keeping the surface free of scale and foreign particles improves corrosion resistance, finished components should be passivated.

Forging

Pre heat carefully, then raise temperature to 1150-1200°C, hold until temperature is uniform through the steel. Do not forge below 900°C. After forging 416 stainless cool slowly in furnace or warm ashes.

Annealing

Heat the 416 stainless steel slowly to 820-900°C, hold until temperature is uniform through the steel. Soak well and allow to cool in the furnace.

Hardening

Heat the 416 slowly to 950-1020°C and hold until the temperature is uniform throughout the steel. After adequate soaking quench in oil or allow to air cool. Temper as soon as the tool is hand warm.

Tempering

Heat carefully to a suitable tempering temperature. Soak as required and then allow to cool in air.

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 steel component. Other considerations during the heat treatment process include the type of furnace, quenching medium and transfer facilities for the work piece. Please consult your heat treatment provider for full guidance on heat treatment of 416 stainless.

Typical Mechanical Properties

Condition	Tensile (UTS) N/mm ²	0.2% Yield N/mm ²	Elongation %	Izod KCV J	Hardness Brinell
P	550-700	340	15	34	152-207

Certification

Stainless steel 416 grade is available with BS EN 10204 3.1 mill certificate, please request when placing any orders.

Quality Assured Supply

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



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