



321 Stainless Steel

321 stainless plate, round and flat bar

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

321 is a titanium stabilised austenitic stainless. The addition of titanium to 321 stainless helps improve its welding properties and the elevated temperature properties of the steel. This stainless steel offers excellent oxidation resistance and corrosion resistance. It offers higher creep and stress rupture properties than 304 austenitic stainless grade. 321 stainless possesses excellent resistance to intergranular corrosion when worked or welded in temperatures with the carbide precipitation range of 427-818°C.

Related Specifications

1.4541 BS EN 10088-1 X6CrNiTi18 10 321S31
BS970 ASTM S32100

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 sheet, plate and bar. We can guillotine cut pieces to your required sizes. 321 stainless steel round bar is available and diameters can be cut to your requirements. Precision ground steel bar can be supplied, providing a high quality stainless bar to close tolerances.



- Flat
- Diameter
- Plate

Contact our experienced sales team who will assist you with your 321 enquiry.

Applications

321 stainless steel is used widely in industries such as automotive, chemical, construction and aerospace. Typical applications are exhaust systems and manifolds, heat exchangers, bellows, oil refinery equipment, furnace parts and firewalls.

Analysis

Carbon	0.08% max	Silicon	0.75% max
Manganese	2.00% max	Nickel	9.00-12.00%
Chromium	17.00-19.00%	Nitrogen	0.10% max
Sulphur	0.03% max	Phosphorous	0.045% max
Titanium	5x(C+N) min to 0.70% max		

Corrosion Resistance

Stainless steel 321 grade has similar corrosion resistance to that of 304 austenitic grade. However it is better suited for applications where an unstabilised chromium nickel steel, such as 304, would be susceptible to intergranular corrosion. It offers excellent corrosion resistance in most natural waters (rural and industrial), provided the chloride, salt and concentrations of hydrochloric and organic acids are low.

Welding

Stainless steel 321 is readily weldable with most welding procedures. Oxyacetylene welding is not recommended due to possible carbon pick up in the weld area. Due to intergranular carbide precipitation 321 can be welded without loss of corrosion resistance and post weld annealing is not normally required, except for service in more extreme conditions. We recommend you contact your welding consumables supplier who should be able to provide you full assistance and information on welding stainless steel.

Forging

Heat the 321 slowly and uniformly throughout the section to 1150-1250°C. Re heat as necessary and avoid working below 900°C. Cool in air.

Scaling Temperature

The oxidation resistance of a stainless steel is traditionally termed as the scaling temperature. This is the temperature at which the oxidation rate of a stainless steel becomes unacceptably high. The safe scaling temperature for continuous service of 321 is 875°C. In an oxidising and reducing sulphurous atmosphere the scaling temperature of 321 stainless is lowered.

Typical Mechanical Properties

Temp °C	Density Kg/m ³	Mean Coefficient of Thermal Expansion	Modulus of Elasticity kg/mm	Electrical Resistivity Ω mm ² /m	Specific Heat Capacity kcal°C
20	7.90	17x10-6	20000	0.7	0.105

Certification

Stainless steel 321 grade is available with BS EN 10204 3.1 mill certificate, please request when placing any orders.

Quality Assured Supply

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



West Yorkshire Steel Ltd
Sandbeck Industrial Estate,
Wetherby, Leeds,
LS22 7DN UK

Call: 01937 584440
Fax: 01937 580128
Email: sales@westyorkssteel.com



QUOTE ME



Information provided on our datasheets has been drawn from various recognised sources, including British, European and International Standards, recognised industry references (printed & online) and manufacturers' data. No guarantee is given that the information is from the latest issue of those sources or about the accuracy of those sources. Material supplied by the Company may vary significantly from this data but will conform to all relevant and applicable standards. Any of the products detailed may be used for a large range of purposes and as WYS has no control over their use; WYS specifically excludes all conditions or warranties expressed or implied by statute or otherwise as to dimensions, properties and/or fitness for any particular purpose, whether expressed or implied. © West Yorkshire Steel Ltd. All Rights Reserved.