

## 304 | 304L Stainless Steel

304 stainless plate, round and flat bar

### 304 304L stainless steel stockholders and suppliers, delivering throughout the UK.

304 grade is a chromium nickel austenitic stainless which is suitable for use in corrosive conditions. A very popular 18/8 grade of stainless widely used in many industry sectors. The 304L grade has a reduced carbon content to improve corrosion resistance after welding.

#### Related Specifications

1.4307 1.4301 BS EN 10088-3 X5CrNi18-10  
X2CrNi18-9 AISI ASTM

#### Alternative stainless steel grades we supply

[17/4PH](#) | [FV520B](#) | [S31254](#) | [904L](#) | [310](#) | [321](#)  
[440B](#) | [440C](#) | [420](#) | [410](#) | [416](#) | [431](#)

#### Form of Supply

West Yorkshire Steel are suppliers and stockholders of round bar, plate and sheet. Sawn blanks can be supplied cut to your requirements as one offs or multiple cut pieces. 304 ground bar can be supplied, providing a high quality precision ground bar to close tolerances. this grade is available in plate which can be supplied as plasma cut pieces and sheet which can be supplied guillotined to size.



- Flat
- Diameter
- Plate

Contact our experienced sales team who will assist you with your 304 enquiry.

## Applications

304 is used widely in industries such as food, construction, automotive and petrochemical. Typical applications are exhaust manifolds, heat exchangers, fasteners, oil refinery equipment and pressure vessels.

## Analysis

Carbon*	0.06% max	Silicon	1.00% max
Manganese	2.00% max	Nickel	8.00-10.00%
Chromium	17.50-19.50%	Sulphur	0.03% max
Phosphorous	0.03% max		

(\*Carbon content on 304L 0.03% max)

## Corrosion Resistance

304 stainless steel grade offers excellent corrosion resistance in most environments. It offers moderate resistance to pitting and crevice corrosion. In more corrosive environments, such as chemical or marine, a higher quality stainless grade such as 316 may be better suited.

## Welding

Stainless steel 304 is readily weldable with most welding procedures. With its lower carbon content 304L stainless is preferred to standard 304 as it can be welded without loss of corrosion resistance due to intergranular carbide precipitation. Post weld annealing is not normally required, except for service in more extreme conditions. We recommend you contact your welding consumables supplier who should provide you full assistance and information on welding stainless steel.

## Forging

Heat the 304 slowly and uniformly throughout the section to 1150-1250°C. Re heat as necessary and avoid working below 900°C. Cool in air. Forgings will require annealing in order to obtain optimum corrosion resistance.

## Scaling Temperature

The oxidation resistance of a stainless steel grade is traditionally termed as the scaling temperature. This is the temperature at which the oxidation rate of the steel becomes unacceptably high. The safe scaling temperature for continuous service of 304 is 875°C. In an oxidising and reducing sulphurous atmosphere the scaling temperature is lowered.

## Typical Mechanical Properties

Temp °C	Density Kg/m <sup>3</sup>	Mean Coefficient of Thermal Expansion	Modulus of Elasticity kg/mm	Electrical Resistivity Ω mm <sup>2</sup> /m	Specific Heat Capacity kcal°C
20	7.90	17.2x10 <sup>-6</sup>	20000	0.7	0.105

## Certification

Stainless steel 304 / 304L grade is available with BS EN 10204 3.1 mill certificate, please request when placing any orders.

## Quality Assured Supply

304 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](mailto:sales@westyorkssteel.com)



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