



# 310 Stainless Steel

310 stainless plate, round and flat bar

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

310 heat resisting stainless steel grade offers high resistance to oxidation scaling with high strength at elevated temperatures. It has much better creep strength at elevated temperatures than other austenitic stainless steel grades. Stainless 310 has good resistance to oxidation in continuous service up to approximately 1100°C.

### Related Specifications

1.4845 310S21 310S24 310S31 BS 970 AISI 310S BS EN 10088-1 X8CrNi25-21

### Alternative stainless steel grades we supply

[17/4PH](#) | [FV520B](#) | [S31254](#) | [904L](#) | [316](#) | [321](#) | [304](#) | [440B](#) | [440C](#) | [420](#) | [410](#) | [416](#) | [431](#) |

### Form of Supply

West Yorkshire Steel are 310 stainless steel suppliers and stockholders of round bar, sheet, plate pipe and tube. Guillotine cut pieces can be produced to your required sizes. 310 stainless steel round bar is available and diameters can be cut to your requirements. Stainless steel 310 ground steel bar can be supplied, providing a high quality stainless precision ground bar to your close tolerances. 310 stainless steel pipe is available in nominal bore / schedule sizes.



- Flat
- Diameter
- Plate

Contact our experienced sales team who will assist you with your 310 enquiry.

## Applications

With its high heat resistance characteristics typical applications include parts for furnaces, heat treatment baskets, jigs, case hardening boxes, steam locomotives parts, burners, combustion chambers, heat exchangers and food processing equipment

## Analysis

|           |              |             |              |
|-----------|--------------|-------------|--------------|
| Carbon    | 0.15% max    | Silicon     | 1.50% max    |
| Manganese | 2.00% max    | Nickel      | 19.00-22.00% |
| Chromium  | 24.00-26.00% | Molybdenum  | 1.00% max    |
| Sulphur   | 0.03% max    | Phosphorous | 0.045% max   |

## Corosion Resistance

310 offers excellent corrosion resistance and in many environments and has better corrosion resistant properties to austenitic stainless grade 304.

## Welding

310 stainless steel is readily weldable with most welding procedures although oxyacetylene welding is not recommended due to possible carbon pick up in the weld area. As with welding of most austenitic stainless steel grades when filler metal is required, matching compositions are generally used. We recommend you contact your welding consumables supplier who should provide you full assistance and information on welding stainless steel.

## Forging

Heat the 310 stainless slowly and uniformly throughout the section to 1100-1230°C. Re heat as necessary and avoid working below 1000°C. Rapid cooling is required to maximize corrosion resistance. Forgings will require annealing in order to obtain optimum corrosion resistance.

## 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 the stainless steel becomes unacceptably high. The safe scaling temperature for continuous service of stainless 310 is 1100°C. In an oxidising and reducing sulphurous atmosphere the scaling temperature of 310 stainless 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                      | 15.5x10 <sup>-6</sup>                 | 20000                       | 0.8   | 0.105                         |

## Certification

Stainless steel 310 grade is available with BS EN 10204 3.1 mill certificate, please request when placing any orders.

## Quality Assured Supply

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



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