



Tel : (0044) (0)1384 868080 Fax : (0044) (0)1384 482088

Email : sales@ppnonferrous.co.uk

Grade 304 is the most versatile and widely used Stainless steel. It is available in a wider range of products, forms and finishes than any other.

The balanced austenitic structure of grade 304 means it can be severely deep drawn without intermediate annealing. It also has excellent forming and welding characteristics along with good corrosion resistance in a wide range of atmospheric environments.

Due to 304's deep drawing qualities it has a number of wide ranging uses...

- Food processing equipment.
- Kitchen Benches, sinks, troughs, equipment and appliances
- Achitectual panelling, railings and trim
- Chemical containers (including for transport)
- Heat exchangers
- Woven or welded screens for mining, quarrying & water filtration
- Threaded fasteners
- Springs



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Stainless Steel 304 is available from us in bars, flats, hexagons and tubes in the following sizes...

Bar:

From 1/8" dia – 16" dia

Flats:

From 20mm x 10mm – 100mm x 12mm

Hexagon:

0.3125" dia – 2.5" dia

Tube:

6mm OD x 1.0mm wall - 50mm OD x 2.0mm wall

1/8mm OD x 25swg wall – 2mm OD x 16swg wall

Chemical & Physical Properties

Typical Chemical Composition

<i>Elements</i>	<i>Min %</i>	<i>Max %</i>
C		0.03
Cr	18.0	20.0
Cu		0.35
Fe	Remainder	
Mn		2.0
Mo		0.35
N		0.1
Ni	8.0	12.0
P		0.045
S		0.03
Si		0.75

Typical Mechanical properties

Property/unit	Condition	Temp	Size	Min	Max
Tensile Strength (N/mm²)	Softened	RT		485	
Elongation in 50mm %	softened	RT	<= 1.2mm	40	
Elongation in 50mm %	Softened	RT	> 1.2 < 5mm	40	
Elongation in 5.65√Cross Sectional Area%	Softened	RT	<= 5mm	40	
Brinell Hardness (HB)	Softened	RT		183	
Rockwell Hardness B scale (HRB)	Softened	RT		88	
Vickers Hardness (HV)	Softened	RT		210	
0.2% Proof Stress (N/mm²)	Softened	RT		170	

Tolerances

Tolerances on diameter, for general purposes.

Round Bar:

Between 10mm and 15mm= +/- 0.4mm

Between 16mm and 25mm= +/- 0.5mm

Between 26mm and 35mm= +/- 0.6mm

Between 36mm and 50mm= +/- 0.8mm

Between 52mm and 80mm= +/- 1.0mm

Between 85mm and 100mm= +/- 1.3mm



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Between 105mm and 120mm= +/- 1.5mm
Between 125mm and 160mm= +/- 2.0mm

Tolerances on diameter, for precision purposes.

Round bar:

Between 10mm and 12mm= +/- 0.15mm
Between 13mm and 22mm= +/- 0.20mm
Between 24mm and 30mm= +/- 0.25mm
Between 32mm and 40mm= +/- 0.30mm
Between 42mm and 52mm= +/- 0.40mm
Between 55mm and 75mm= +/- 0.50mm

Tolerances on flat bar:

Width:

Between 10mm and 40mm= +/- 0.75mm
Over 40mm up to 80mm= +/- 1.0mm
Over 80mm up to 100mm= +/- 1.5mm
Over 100mm up to 120mm= +/- 2mm
Over 120mm up to 150mm= +/- 2.5mm

Thickness:

Up to 20mm= +/- 0.5mm
Over 20mm up to 40mm= +/- 1.0mm
Over 40mm up to 80mm= +/- 1.5mm

Straightness:

Below 1000mm²= a tolerance in the plane of below 0.4% of measuring length.

1000mm² and above= a tolerance in the plane below 0.25% of measuring length.

Out-of-section:

Between 10mm and 25mm= 0.5mm
Over 25mm up to 40mm= 1mm
Over 40mm up to 80mm= 1.5mm



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Tolerances on hexagons:

Width across flats:

Between 13mm and 15mm= +/- 0.4mm

Between 16mm and 23.5mm= +/- 0.5mm

Between 25.5mm and 33.5mm= +/- 0.6mm

Between 35.5mm and 47.5mm= +/- 0.8mm

Between 52mm and 78mm= +/- 1.0mm

Between 83mm and 98mm= +/- 1.3mm

103mm= +/- 1.5mm

Corner Radius:

Below 20.0mm= up to a 1.5mm radius.

Over 20.0mm to 28.5mm= up to 2.0mm radius.

Over 28.5mm to 48.0mm= up to 2.5mm radius

Over 48.0mm to 83.0mm = up to 3mm radius

Over 83.0mm to 103.0mm= up to 3.5mm radius

Straightness:

Below 39.5mm= not fixed tolerance in the plane.

Between 39.5mm and 83.0mm= q up to 0.004 x L tolerance in the plane.

Between 83.0mm and 103.0mm= q up to 0.0025 x L tolerance in the plane.

The information above is based on our current knowledge and is given in good faith; however the company will accept no liability in respect of any third party reliance