

303 Stainless

Technical Datasheet



Readily Machinable Stainless Steel

Service. Quality. Value.

Typical Applications

- Aircraft fittings
- Gears
- Nuts and bolts
- Electrical switchgear components
- Bushings
- Shafts

Product Description

Type 303 stainless steel is an alloy which is the most readily machinable austenitic stainless steel available today. This is due to the presence of sulphur in the material composition although improved machinability is at a cost - the sulphur content results in a decrease in corrosion resistance and also a slight lowering in toughness. But as with most austenitic grades the toughness is still excellent. Weldability of the alloy is poor. Type 303 is used in a variety of engineering industries.

Key features

- Austenitic stainless steel
- Very good machinability but reduced formability
- Not recommended for any application involving welding
- Has a lower resistance to corrosion than 1.4301.

Corrosion resistance

Good in mild environments.

Machinability

Very good machinability.

Weldability

Poor weldability.

Availability

Round bar, wire and hexagon

Chemical Composition (weight %)

	C	Mn	Si	P	S	Cr	Ni	Fe	
min						17.00	8.00	Bal	
max	0.10	2.00	1.00	0.40	0.15	19.00	10.00	Bal	

Mechanical Properties

Tensile strength	500 - 700	MPa
Proof Stress	190 min	MPa
Elongation A5	35	%

Physical Properties

Density	8.03	kg/m ³
Melting Point	1455	°C
Modulus of Elasticity	193	GPa
Electrical Resistivity	0.072	x10 ⁻⁶ Ω.m
Thermal Conductivity	16.3	W/m.K
Thermal Expansion	17.3	x10 ⁻⁶ /K

Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

UK Service Centres:

Smiths Belfast **02895 908 897**
 Smiths Biggleswade **01767 604 704**
 Smiths Birmingham **0121 728 4940**
 Smiths Bristol **0117 971 2800**
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 Smiths Redruth **01209 315 512**
 Smiths Verwood **01202 824 347**
 Main Office **0845 527 3331**

Quality & Testing:



www.smithmetal.com info@smithmetal.com

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