

303 Stainless



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.

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