

303 Stainless Steel

Smiths Advanced Metals

Rev: SAM/datasheets/stainless-steel-bar/303-stainless/feb-2022

Page: 1 of 1

Machinable stainless steel bar

For components requiring heavy machining

303 austenitic stainless steel offers superior machinability. The machinability of the alloy is the best of all austenitic stainless steel grades.

The high machinability rating of 303 stainless steel is achieved due to the introduction of sulphur in the alloying process, although this improvement comes at a cost. Although toughness characteristics remain excellent, corrosion resistance, formability, and toughness are slightly reduced.

Type 303 finds use in applications where heavy machining is a requirement, and examples include aerospace fittings, valve bodies, fasteners and shafts. The weldability of the alloy is generally poor. The alloy has lower corrosion resistance when compared to 1.4301. 303 is non-magnetic and is not hardenable by heat treatment.

Smiths Advanced Metals stocks [303 stainless steel rods](#) in the solution annealed condition and various sizes to suit your engineering applications. We also process your stainless steel bars in-house to exact lengths.



Grades / Specifications

- 1.4305
- AMS5640
- AISI 303
- AMSQS764
- UNS S30300
- ASTM A582
- BS EN 10088-3

Benefits

- Good mechanical properties
- Excellent machinability
- Very good toughness
- Ideal for heavily machined parts

* Chemical Composition (weight %)

	C	Mn	Si	P	S	Cr	Ni	Fe	Mo	Cu
min.					0.15	17.00	8.00	Bal		
max.	0.15	2.00	1.00	0.15		19.00	10.00	Bal	1.00	1.00

* As per AMS 5640, type 1

* Mechanical Properties

Tensile Strength	500 - 750 MPa
Proof Stress	190 MPa (min)
Elongation	35%

Physical Properties

Density	8.03 kg/m ³
Melting Point	1455° C
Modulus of Elasticity	196 GPa
Electrical Resistivity	0.072 x10 ⁻⁶ Ω.m
Thermal Conductivity	16.3 W/m.K

* Properties as per BS EN 10088-3

www.smithsadvanced.com

info@smithsadvanced.com



Stratton Business Park,
London Road, Biggleswade,
Bedfordshire SG18 8QB
Tel: **+44 (0) 1767 604710**

