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303 Stainless Steel

Free-Machining Austenitic Stainless Bar • UNS S30300

303 stainless steel is an austenitic free-machining grade whose sulfur addition improves chip control for turned components. It is a practical choice for high-volume screw-machine work when the corrosion resistance, forming limits and weldability trade-offs are acceptable.

MATERIAL SPECIFICATIONS

Property / designation	Reference data / purchase requirement
UNS grade	S30300
European reference	EN 1.4305 / X8CrNiS18-9 (comparative)
Reference long-product standard	ASTM A582/A582M for applicable free-machining bar
Chromium (Cr)	17.0–19.0 wt%
Nickel (Ni)	8.0–10.0 wt%
Sulfur (S)	0.15 wt% minimum
Carbon (C)	0.15 wt% maximum
Density	Approx. 7.90 g/cm³ (annealed typical)
Machining caution	Sulfur addition reduces corrosion resistance versus 304

SELECTED APPLICATIONS

Screw-machined nuts, bolts and fittings • Precision pins, bushings and small shafts • Switchgear parts and high-volume turned hardware

GRADE SELECTION & FINISHING

Compared with 304, 303 typically machines more easily but sacrifices some corrosion resistance and weldability. If corrosion exposure is the primary requirement, discuss 304 or 316 rather than specifying 303 only for cutting speed.

Specify finished OD, machining bar condition, straightness and surface finish as separate requirements. For Swiss machining, account for long-bar feeding and supplier delivery condition.

INFORMATION FOR A QUOTE

Request UNS S30300, ASTM/EN standard and condition; starting and finished diameter; bar length; straightness; surface finish; quantity; test documentation.

Material: material/303-stainless-steel/

Technical source: Atlas Steels, 303/303Se grade datasheet

Reference values only; the specified product standard, material condition and mill test report govern.

Not a mill test report or stock availability guarantee. Confirm actual heat, condition and specification.