



E STEEL SDN BHD (891338-A)

NO 3, Lorong Sungai Puloh 7/KU 6,
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Stainless Steel – SUS403, UNS S40300, 1.4024

Chemical Formula

Fe, <0.15% C, 11.5-13.5% Cr, >0.75% Ni, <1.0% Mn, <0.5% Si, <0.04% P, <0.03% S

SS403 is the basic martensitic stainless steel; like most non-stainless steels it can be hardened by a "quench-and-temper" heat treatment. It contains a minimum of 11.5 per cent chromium, just sufficient to give corrosion resistance properties. It achieves maximum corrosion resistance when it has been hardened and tempered and then polished. SUS403 is a general purpose grade often supplied in the hardened, but still machinable condition, for applications where high strength and moderate heat and corrosion resistance are required.

AISI Type 403

Type	Martensitic Stainless Steel
Designations	France: AFNOR Z 12 C 13M Germany: DIN 1.4024 Japan: JIS SUS 403 , JIS SUS 416 United Kingdom: B.S. 420 S 29 , B.S. En. 56 B United States: AMS 5611 , AMS 5612 , ASTM A176 , ASTM A276 , ASTM A314 , ASTM A473 , ASTM A479 , ASTM A511 , ASTM A580 , FED QQ-S-763 , MIL SPEC MIL-S-862 , SAE 51403 , SAE J405 (51403) , UNS S40300

Composition

Element	Weight %
C	0.15
Mn	1.00
Si	0.50
Cr	11.5-13.0
P	0.04
S	0.03



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Mechanical Properties

Properties	Metric	Imperial
Tensile strength	485 MPa	70300 psi
Yield strength (@strain 0.200 %)	310 MPa	45000 psi
Fatigue Strength (annealed, @diameter 25mm/0.984 in)	275 MPa	39900 psi
Shear modulus (typical for steel)	76.0 GPa	11000 ksi
Elastic modulus	190-210 GPa	27557-30458 ksi
Poisson's ratio	0.27-0.30	0.27-0.30
Elongation at break (in 50 mm)	25.00%	25.00%
Izod impact (tempered)	102 J	75.2 ft-lb
Hardness, Brinell (converted from Rockwell B hardness)	139	139
Hardness, Knoop (converted from Rockwell B hardness)	155	155
Hardness, Rockwell B	80	80
Hardness, Vickers (converted from Rockwell B hardness)	153	153

Corrosion Resistance

SUS403 resists dry atmosphere, fresh water, mild alkalies and acids, food, steam and hot gases. Must be hardened for maximum heat and corrosion resistance. Performance is best with a smooth surface finish. Less corrosion resistant than the austenitic grades and also less than 17% chromium ferritic alloys such as SUS430.

Applications

Typical applications include:

- Bolts & Nuts
- Screws
- Bushings
- Pump and valve parts and shafts
- Steam and gas turbine parts
- Petroleum fractionating towers
- Mine ladder rungs