PRODUCT DATASHEET

316

Grade

AISI 316 (UNS S31600, ASTM A182, ASTM A276, ASTM A479, BS EN 10088) NACE MR-0175/ISO 15156

Type

Austenitic stainless steel delivered in the solution annealed condition

Also stocked in H grade and Ti grade designations.

Overview

The grade may be strengthened by cold working, but this reduces the corrosion resistance. Cold worked grades are not acceptable to NACE

MR0175/ ISO 15156.

The grade has low strength and good corrosion resistance. The molybdenum content gives it particularly good seawater corrosion resistance. Hence it is used for small fittings, gaskets and small bore tubing.

The grade is prone to chloride stress corrosion cracking, and therefore NACE MR0175/ ISO 15156 states it should not be used at or above 60°C.

Composition	
Element	**Weight%**
Carbon	0.08 max
Silicon	1 max
Manganese	2 max
Phosphorus	0.045 max
Sulphur	0.03 max
Molybdenum	2 - 3
Chromium	16 - 18
Nickel	10 - 14
Manganese	2 max

Notes: L grade limits %C content to 0.03% max

For increased machinability a controlled sulphur content is recommended.

316 - This grade is the higher carbon version and should not be welded.

Weldable grades have a lower carbon (and are designated 316 L).

These are sometimes called 18-8 stainless steels. Due to the low C-content, the resistance to intergranular corrosion is greatly improved in the welded condition.

Mechanical Propeties

Solution annealed at around 1050°C and water quenched

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Property	Values
0.2% Yeild Strength	30 KSI min (205 MPA min)
Ultimate Tensile Strength	75 KSI min (515 MPA min)
Elongation	30
Reduction of area	50% min
Charpy Impact Toughness	135 min J at -75°C
Hardness	22 HRC 237 HBW max

Notes: The impact toughness shown is typically achieved.