

ALLOY 625

Grade: Alloy 625 (UNS N06625, ASTM B446, ASTM B564)

Type: Annealed Nickel Chromium alloy.

Nominal Composition	
Element	Weight %
Carbon	0.1 max
Silicon	0.50 max
Manganese	0.50 max
Phosphorus	0.015 max
Sulphur	0.015 max
Molybdenum	8.0 – 10.0
Chromium	20.0 – 23.0
Nickel	58.0 min
Aluminium	0.4 max
Titanium	0.4 max
Niobium + Tantalum	3.15 – 4.15
Iron	5.0 max

Notes

The grade has excellent corrosion resistance.

Mechanical Properties Condition: Annealed and where lower hardness is required Solution Annealed. Though not usually required this grade can be aged. Typical properties below are in the Annealed condition.

Property	Typical Values
Ultimate Tensile Strength	120 min Ksi (827 Mpa)
0.2 % Yield Strength	60 Ksi (414 Mpa)
Elongation	20 % min
Reduction of Area	35 % min
Charpy Impact Toughness	27 mean J at – 60° C
Hardness	35 HRC max

Notes:

Nickel-Chromium alloy with generally 3.5% Niobium and 9% Molybdenum.

Maximum hardness shown is based on compliance with NACE MR0175 (2003).

Grade has relatively low strength but very high corrosion resistance, excellent sub zero impact properties.

Used extensively for applications such as fittings, valves, gaskets, tubing. Also used for corrosion resistant weld overlays.