

# Inconel 625

Inconel 625 offers outstanding resistance to corrosive environments, including seawater, acids, and alkaline solutions. It is highly resistant to pitting, crevice corrosion, and stress corrosion cracking, and its corrosion resistance makes it valuable in Marine applications, Chemical Processing plants, and Oil & Gas industries.

AML3D has used ARCEMY® and its patented WAM® process to successfully produce cladded large-scale parts for the Oil & Gas industry using ER70s and Inconel 625.

## Wire Classification

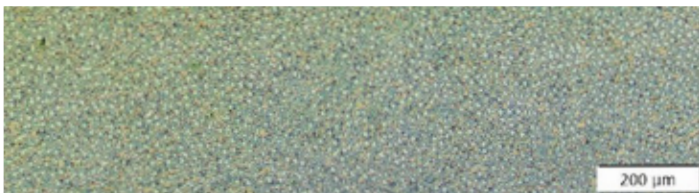
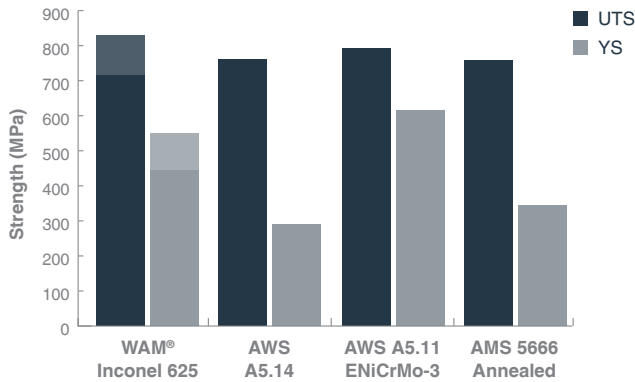
AWS A5.14/A5.14M-97 ERNiCrMo-3, EN ISO 18274 ED 2011 Ni 6625

Wire Diameter	Shielding Gas	Process
1.2 mm	Argon	WAM® – DED-Arc

## Equivalent Designations

Alloy 625, UNS N06625, DIN 1736, ASTM B446, AMS 5666, AMS 5837, ISO 9723, ISO 9724, ISO 9725, EN 10095, DIN 17752, DIN 17753, DIN 17754, ASTM B444, ASTM B751, ASTM B829, ASTM B775, ASTM B705, ASTM B704, AMS 5581, ISO 6207, BS 3074NA21, DIN 17751, ASTM B564, AMS 5666, ASTM B443, AMS 5599, AMS 5869, ISO 6208, BS 3072NA21, EN 10095, DIN 17750, ASTM B366

## WAM® Inconel 625 Tensile Strength Comparison



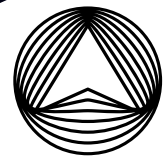
Showing microstructure in the Inconel 625 weld.

WAM® Test Number 220016AM-14c. Mechanical property values for the 'as-deposited WAAM' values are based on the median value and repeatability testing. Deposited density can be lower than wire density. AWS data source: D20.1/D20.1M:2019 Specification for Fabrication of Metal Components Using Additive Manufacturing

## Properties

Composition	Amount %
Carbon	≤0.010
Silicon	≤ 0.5
Manganese	≤ 0.50
Nickel	≥ 58
Chromium	20 - 23
Molybdenum	8.0 - 10
Copper	≤ 0.5
Sulfur	≤ 0.015
Phosphorus	≤ 0.02
Titanium	≤ 0.04
Niobium	3.2 - 4.1
Aluminium	≤ 0.4

Mechanical	WAM® X, Y & Z Typical	AWS Typical
Ultimate Tensile Strength (MPa)	710 - 830	760
0.2% Proof stress (MPa)	450 - 550	460
Reduction in area (%)	-	-
Elongation (%)	48 - 60	50
Condition	as built	
Classification	AWS A5.14	
Density (kg/m³)	8500	



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