

Inconel 622

Inconel 625 is a nickel-based superalloy widely used in various industries for its excellent combination of high-temperature strength, corrosion resistance, and oxidation resistance. Inconel 265 features good mechanical properties, including high tensile strength, fatigue resistance, and toughness. It can withstand mechanical stresses and strains, making it suitable for structural applications that require strength and durability.

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 622.

Wire Classification

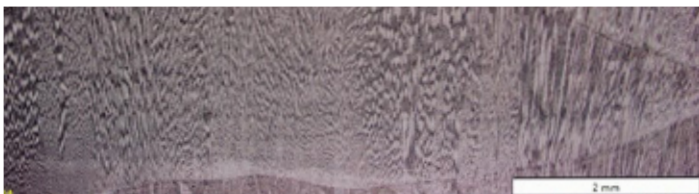
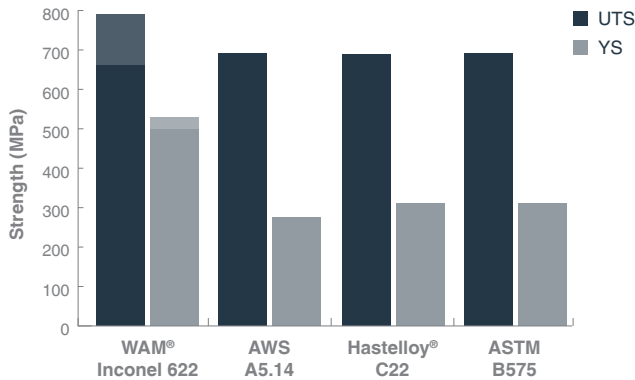
AWS A5.14/A5.14M-97 ERNiCrMo-10

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

Equivalent Designations

DIN 2.4602, UNS N06022, Techalloy® 622, HASTELLOY® C-22® RTW™, AWS 5.14, ASME SFA 5.14, AWS ERNiCrMo-10, ASTM B366, ASTM B564, ASTM B574, ASTM B575, ASTM B619, ASTM B622

WAM® Inconel 622 Tensile Strength Comparison



Inconel 622 welding pattern micrograph.

WAM® Test Number 220016AM-20c, 220016AM-20e. Mechanical property values for the 'as-deposited WAM' 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	≤0.015
Silicon	≤ 0.08
Manganese	≤ 0.50
Nickel	Rest
Chromium	22.0 - 22.5
Molybdenum	8.0 - 10.0
Copper	≤ 0.5
Sulfur	≤ 0.010
Phosphorus	≤ 0.02
Iron	2.0 - 6.0
Cobalt	≤ 2.5
Tungsten	2.5 - 3.5

Mechanical	WAM® X, Y & Z Typical	AWS Typical
Ultimate Tensile Strength (MPa)	670 - 790	690
0.2% Proof stress (MPa)	430 - 530	310
Reduction in area (%)	-	-
Elongation (%)	41 - 49	45
Condition	as built	
Classification	AWS A5.14	
Density (kg/m³)	8570	



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