

ER5183

ER5183 is suitable for the manufacture of parts requiring low-temperature applications where both toughness and good ductility are required. The feedstock contains magnesium, manganese and chromium, that provide Al5183 with excellent resistance to corrosion caused by seawater, where it is used for Shipbuilding and Marine part repair.

When paired with ER5083, ER5183 can achieve higher tensile strength, lending it's properties to high-strength structural aluminium part creation as seen in the Defence, Marine and Offshore sectors.

Wire Classification

AWS A5.10 ER5183

Wire Diameter

1.2 mm

Shielding Gas

Argon

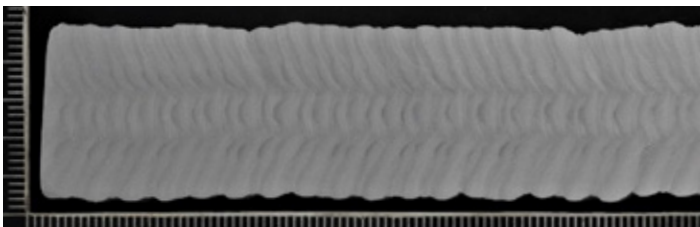
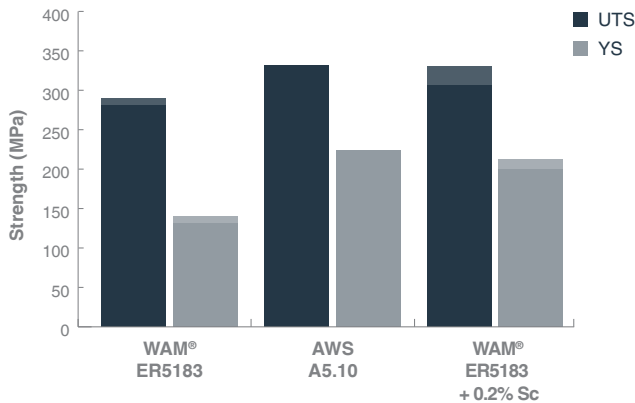
Process

WAM® – DED-Arc

Equivalent Designations

DE63, AlMg4.5Mn0.7, EN ISO 18273: S Al 5183, BS 2901: 5183, UNS A95183.

WAM® ER5183 Tensile Strength Comparison



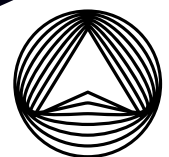
ER5183 macro examination.

WAM® Test Number 210014AM-46. 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 %
Silicon	≤ 0.40
Iron	≤ 0.40
Copper	≤ 0.10
Manganese	0.5 - 1.0
Magnesium	4.3 - 5.2
Chromium	0.05-0.25
Zinc	≤ 0.25
Titanium	≤ 0.15
Beryllium	≤ 0.0008
Aluminium	Rest

Mechanical	WAM® X & Z Typical	AWS Typical
Ultimate Tensile Strength (MPa)	280 - 290	≥ 276
0.2% Proof stress (MPa)	130 - 140	≥ 125
Reduction in area (%)	30	-
Elongation (%)	17 - 28	≥ 12
Condition	as built	
Classification	AWS A5.10	
Density (kg/m³)	2560	
Fatigue Limit (MPa / Cycles)	95 - 100 @10 ⁷	



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