ER2209

Offering a combination of high strength and excellent corrosion resistance, ER2209 belongs to the family of duplex stainless steels. ER2209 is characterised by a microstructure consisting of equal amounts of austenite and ferrite phases, providing the alloy with excellent corrosion resistance and mechanical properties.

The alloy also exhibits good toughness and ductility, making it suitable for Offshore, Marine, Oil & Gas, and Chemical Processing applications.

Wire Classification

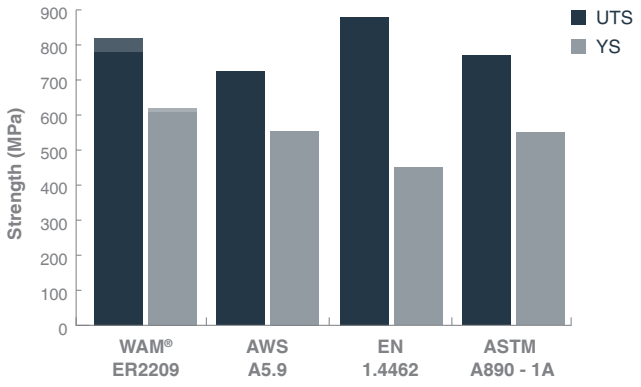
AWS A5.9 ER2209

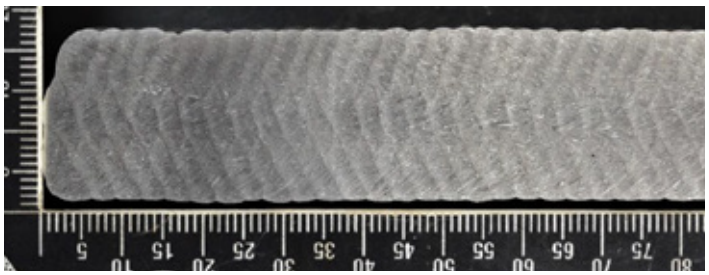
Wire Diameter	Shielding Gas	Process
1.2 mm	Argon	WAM® – DED-Arc

Equivalent Designations

S39209, 22 9 3 NL, ENz1.4462, SS2209, W39209, ES2209, ACI-ASTM CD4MCu, ASTM A890 Grade 1A, J93370.

WAM® ER2209 Tensile Strength Comparison





ER2209 macro examination photo.

Properties

Composition	Amount %
Carbon	≤ 0.03
Manganese	0.50 - 2.00
Nickel	7.5 - 9.5
Chromium	21.5 - 23.5
Molybdenum	2.5 - 3.5
Silicon	≤ 0.9
Copper	≤ 0.75
Phosphorus	≤ 0.03
Sulfur	≤ 0.03
Nitrogen	0.08 - 0.20

Mechanical	WAM® X & Z Typical	AWS Typical
Ultimate Tensile Strength (MPa)	790 - 820	≥ 690
0.2% Proof stress (MPa)	610 - 620	≥ 400
Reduction in area (%)	NA	-
Elongation (%)	29 - 32	≥ 18
Condition	as built	
Classification	AWS A5.90	
Density (kg/m^3)	7800	
Ferrite Range (%)	40 - 50	
Charpy Impact Test (J)	80 @ -29˚C	
Stress Analysis (mm) (Neutron Detection)	Comp. > 25	
Ductile / Brittle Transition	-150˚C	
Corrosion Resistance	G48 Pitting Resistance - no weight loss	

WAM® Test Number 210014AM-04. 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.

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