ER 312

Stainless Steel **WIRE/GMAW**

Standards

EN/ISO-Standard - 14343-A
EN/ISO-Classification - G 29 9

AWS-Standard - A5.9
AWS-Classification - ER 312

Features and Applications

- Austenitic stainless steel wire originally designed to weld cast alloys of similar composition.
- It gives a two-phase weld deposit with substantial percentages of ferrite in austenite matrix.
- Ideal for welding dissimilar metals such as carbon steel to stainless steel, particularly those grades high in nickel.
- Due to its high ferrite level, ER 312 is very adapted to heterogeneous welding, especially when one of the components is fully austenitic.
- Good corrosion oxidation resistance at high temperature due to its high content of Cr.
- Service temperatures should be below 420°C to prevent formation of secondary brittle phases.
- Precision layer wound for superior wire feeding characteristics.
- Typically used on industrial furnaces, annealing chambers, fused salt treatment installations and boiler parts, as well as heat exchangers etc.
- **Test Certificates can be found online @wilkinsonstar247.com**

Typical Base Materials

Mild and low alloy steels, stainless steel of similar composition, Buffer layers, armor plate, 409, 304, difficult to weld steels such as:, 25CrMo4, 42CrMo4, 50CrMo4, 42MnV7, 1.7218, 1.7225, 1.7228, 1.7223, AISI: 4130, 4140, 4150, C45, C60, tool steel repairs etc*

* Illustrative, not exhaustive list

Welding Positions

EN ISO 6947 - PA, PB, PC, PD, PE, PF

Shielding Gases

EN ISO 14175 - M12, M13

Polarity

DC (+)

Welding Parameters - M12

Ø mm	0.80	1.00	1.20
Current (A)	40-120	80-160	100-210
Voltage (V)	15-20	16-22	17-23

Welding Parameters - M13

Ø mm	0.80	1.00	1.20
Current (A)	160-210	180-280	200-300
Voltage (V)	24-28	25-30	26-32

Mechanical Properties

Tensile Strength (N/mm^2)	Yield Strength (N/mm^2)	Elongation (%)
≥650	≥450	≥15

Mechanical properties are approximate and may vary based on the heat, shielding gas, welding parameters and other factors.

Chemical Composition % (Typical)

C %	Mn%	Si %	S %	P %	Ni %	Cr %	Mo %	Cu%
0.091	1.59	0.46	0.004	0.021	20.68	26.65	0.040	0.21

Packaging Data

Part No.	Diameter Ø (mm)	Package Weight (Kg)	Package Type	Pallet Quantity
6011100153	0.80	15	D300 PLW	72
6011100154	1.00	15	D300 PLW	72
6011100155	1.20	15	D300 PLW	72

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