



# ER 312

## Stainless Steel WIRE/GTAW



### Standards

EN/ISO-Standard - 14343-A  
EN/ISO-Classification - W 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.
- 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**



### Approvals

CE, UKCA

### 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, PG

### Shielding Gases

EN ISO 14175 - TIG: I1 (Argon)

### Polarity

DC (-)

### 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 Length (mm) | Package Weight (Kg) | Package Type |
|------------|-----------------|---------------------|---------------------|--------------|
| 6011100157 | 1.60            | 1000                | 5                   | Plastic Tube |
| 6011100345 | 2.40            | 1000                | 5                   | Plastic Tube |
| 6011100346 | 3.20            | 1000                | 5                   | Plastic Tube |

### Mechanical Properties

| Tensile Strength (N/mm <sup>2</sup> ) | Yield Strength (N/mm <sup>2</sup> ) | Elongation (%) |
|---------------------------------------|-------------------------------------|----------------|
| ≥650                                  | ≥450                                | ≥15            |

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