



DATA SHEET
DS 352
Rev. 5 dd 14/01/2013
INEFIL INOX 312

I.N.E. S.p.A.
Via Facca 10
35013 Cittadella (PADOVA)
ITALY
Tel. : +39 049/9481111 Fax: + 39 049/9400249
Internet: www.ine.it E mail: ine@ine.it

CLASSIFICATION

| AWS SPECIFICATIONS | EN SPECIFICATIONS |
|----------------------|------------------------|
| AWS A 5.9: ER312 | EN ISO 14343-A: G 29 9 |
| AWS A 5.9M: ER312 | |
| ASME SFA 5.9: ER312 | |
| ASME SFA 5.9M: ER312 | |

APPROVALS

| | | |
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| | | |
| | | |
| | | |

ALLOY TYPE

Solid wire for austenite-ferrite steels.

APPLICATIONS

Inox solid wire designed for welding and hardfacing ferrite – austenite steels and for hardly weldable steels including those with 13% manganese content. Intended for a service temperature up to 1000°C; applications include tool steels, shafts, buffer layers and steels with similar chemical composition. Suitable for joining of dissimilar materials, heat treatable or quenched and tempered steels, high carbon steels, etc. The weld metal improves weatherproof conditions and friction. Its very good mechanical properties and crack resistance make this electrode suitable for all applications. To be used under the shield of Ar 98% + O₂ 2%.

MATERIALS TO BE WELDED

| ASTM | EN | Others |
|------|----|--------------------|
| | | dissimilar steels |
| | | tempered steels |
| | | steels with high C |

WELDING GUIDELINES

Preheat and interpass temperature depend on base metal hardenability. PWHT is not required.

TECHNICAL INFORMATION

Gas: Mix Ar- O₂ (EN ISO 14175)

Welding positions: all positions

**WELDING PARAMETERS**

| Current | DC + Reverse polarity | | | | | |
|---------------|-----------------------|----------|-----------|--|--|--|
| Diameter (mm) | 0.8 | 1.0 | 1.2 | | | |
| Volts (V) | 16 ÷ 28 | 17 ÷ 32 | 18 ÷ 34 | | | |
| Intensity (A) | 60 ÷ 200 | 80 ÷ 260 | 100 ÷ 360 | | | |



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TYPICAL CHEMICAL COMPOSITION OF WIRE

| C % | Mn % | Si % | Cr % | Ni % | Mo % | Cu % | | | |
|------|------|------|-------|------|------|------|--|--|--|
| 0.10 | 1.80 | 0.40 | 30.00 | 9.20 | 0.20 | 0.20 | | | |

TYPICAL MECHANICAL PROPERTIES

| GAS | | Yield strength | Tensile strength | Elongation on % 5d | Impact energy (Charpy V) | | | | |
|-----|-----------|----------------|------------------|--------------------|--------------------------|---------|---------|---------|---------|
| | | Rs | Rm | A 5d | + 20°C | 0°C | -20°C | -40°C | -50°C |
| | | (MPa) | (MPa) | % | (Joule) | (Joule) | (Joule) | (Joule) | (Joule) |
| M13 | as welded | 450 | 660 | 22 | - | - | - | - | - |

PRODUCTS AVAILABLE

| Process | Product | Classification AWS | Classification EN |
|-----------------------|------------|----------------------|---------------------|
| MIG/MAG Solid wire | | | |
| TIG Rods | | | |
| SAW Submerged arc | | | |
| FCAW Cored wire | | | |
| SMAW Electrodes | INOX 312 R | (AWS A 5.4: E312-16) | EN 3581-A: E 29 9 R |