



DATA SHEET
DS 119
Rev. 2 dd 15/05/2015
INETIG 120 S1

I.N.E. S.p.A.
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CLASSIFICATION

APPROVALS

| AWS SPECIFICATIONS | EN SPECIFICATIONS |
|-------------------------|------------------------------------|
| AWS A 5.28: ER120S-1 | EN ISO 16834-A: W 69 5 I1 Mn4Ni2Mo |
| AWS A 5.28M: ER83S-1 | |
| ASME SFA 5.28: ER120S-1 | |
| ASME SFA 5.28M: ER83S-1 | |

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

ALLOY TYPE

Copper-coated TIG rod for high strength steels.

APPLICATIONS

Copper-coated low alloy tig rod with Ni-Cr-Mo for welding high strength steels with minimum yield strength of 790 MPa and minimum tensile strength of 840 MPa. Chemical composition of rod conforming to AWS specification. Excellent mechanical properties of weld metal and good toughness characteristics at low temperature. It could find application in earth moving equipment, cranes and industrial trucks fabrication.

MATERIALS TO BE WELDED

| ASTM | | EN | | Others |
|------------|--|------------------|--|------------|
| API 5A L80 | | (BS 4360 Gr 55F) | | RQT 701 |
| HY80 | | | | Navy Q1 |
| HY100 | | | | NAXTRA 70 |
| | | | | WELDOX 700 |
| | | | | QT 445 |
| | | | | HYSTAL 77 |

WELDING GUIDELINES

Preheat and interpass temperature 150 - 200°C. PWHT is not required. To obtain the best results in terms of the mechanical properties, the use with low heat input is advised (follow the instructions as indicated by steel producer).

TECHNICAL INFORMATION

Gas: Argon 100% (EN ISO 14175)
Welding positions: all positions



WELDING PARAMETERS

| | |
|----------------|-------------------------------|
| Current | DC - Straight polarity |
|----------------|-------------------------------|

PACKAGING DATA

| Diameter (mm) | 1.2 | 1.6 | 2.0 | 2.4 | 3.2 | 4.0 |
|---------------|---------|---------|---------|---------|---------|---------|
| Length (mm) | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Carton | 5/25 Kg | 5/25 Kg | 5/25 Kg | 5/25 Kg | 5/25 Kg | 5/25 Kg |

* tolerances according to EN ISO 544 specification.



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TYPICAL CHEMICAL COMPOSITION OF WIRE

| C % | Mn % | Si % | S % | P % | Cr % | Ni % | Mo % | Cu % | |
|------|------|------|-------|-------|------|------|------|------|--|
| 0.07 | 1.70 | 0.50 | 0.007 | 0.007 | 0.10 | 2.10 | 0.45 | 0.15 | |

TYPICAL MECHANICAL PROPERTIES

| GAS | | Yield strength | Tensile strength | Elongation | Impact energy (Charpy V) | | | | |
|-----|-----------|----------------|------------------|------------|--------------------------|---------|---------|---------|---------|
| | | Rs | Rm | A | + 20°C | -30°C | -40°C | -50°C | -60°C |
| | | (MPa) | (MPa) | % | (Joule) | (Joule) | (Joule) | (Joule) | (Joule) |
| I1 | as welded | 790 | 840 | 20 | 250 | 210 | 200 | 180 | - |

PRODUCTS AVAILABLE

| Process | Product | Classification AWS | Classification EN |
|------------------------------|------------------|-----------------------|------------------------------|
| MIG/MAG Solid wire | INEFIL 120 S1 | AWS A 5.28: ER120S-1 | EN 16834-A: G Mn4Ni2Mo |
| | INEFIL 120 | AWS A 5.28: ER120S-G | EN 16834-A: G Mn4Ni2CrMo |
| | INEFIL 110 | AWS A 5.28: ER110S-1 | (EN 16834-A: G Mn3Ni2,5CrMo) |
| TIG Rods | INETIG 120 | AWS A 5.28: ER120S-G | EN 16834-A: W Mn4Ni2CrMo |
| | INETIG 110 | AWS A 5.28: ER110S-1 | (EN 16834-A: W Mn3Ni2,5CrMo) |
| SAW Submerged arc | | | |
| FCAW Cored wire | INETUB M111TG-K3 | AWS A 5.28: E110C-K3 | EN 18276-A: T 2NiMo |
| | INETUB M121TG-K4 | AWS A 5.28: E120C-K4 | EN 18276-A: T Mn2NiCrMo |
| | INETUB B121T5-K4 | AWS A 5.29: E121T5-K4 | EN 18276-A: T Mn2NiCrMo |
| SMAW Electrodes | | | |