



DATA SHEET
DS 053
Rev. 6 dd 02/12/2014
INEFIL NIMOCR

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CLASSIFICATION**APPROVALS**

| AWS SPECIFICATIONS | EN SPECIFICATIONS |
|-------------------------|---------------------------------------|
| AWS A 5.28: ER100S-G | EN ISO 16834-A: G 69 4 M21 Mn3Ni1CrMo |
| AWS A 5.28: ER110S-G | EN ISO 16834-A: G 69 5 M13 Mn3Ni1CrMo |
| ASME SFA 5.28: ER100S-G | |
| ASME SFA 5.28: ER110S-G | |

| TÜV | DB | ABS |
|-----|----|-----|
| | | |
| | | |

ALLOY TYPE

Copper-coated solid wire for welding high strength steels.

APPLICATIONS

Low-alloy copper-coated solid wire with Ni-Cr-Mo additions designed for welding high yield strength steels with minimum tensile strength higher than 770 MPa. Excellent impact strength at low temperatures (up to -50°C). Suitable for the metal working industry, offshore fabrication, chemical and petrochemical industry. It also has applications in fabrications of HSLA (high-strength low-alloy) steels, which may be used for industrial machinery construction, cranes and other highly stressed structural components. To be used under the shield of Ar+CO₂ or Ar+O₂.

MATERIALS TO BE WELDED

| ASTM | | EN | | Others |
|-------|-------------|--------------|------------------|------------|
| A 514 | API 5LX X65 | 10137-2 S460 | 10208-2 L480 | RQT 601 |
| A 517 | API 5LX X70 | 10137-2 S500 | 10208-2 L550 | Navy Q1 |
| HY80 | API 5LX X80 | 10137-2 S550 | (BS 4360 Gr 55F) | NAXTRA 70 |
| HY90 | API 5A L80 | 10137-2 S620 | | WELDOX 700 |
| HY100 | | 10137-2 S690 | | |

WELDING GUIDELINES

Preheat and interpass temperature 150°C. PWHT is not required. To obtain the best mechanical properties results, the use with low heat input is advised (follow the steel producer recommendations).

TECHNICAL INFORMATION

Gas: Mix Ar- CO₂ & Mix Ar- O₂ (EN 14175)
Welding positions: all positions

**WELDING PARAMETERS**

| Current | DC + Reverse polarity | | | | |
|---------------|-----------------------|----------|-----------|-----------|--|
| | 0.8 | 1.0 | 1.2 | 1.6 | |
| Diameter (mm) | | | | | |
| Volts (V) | 16 ÷ 28 | 17 ÷ 32 | 18 ÷ 34 | 19 ÷ 38 | |
| Intensity (A) | 60 ÷ 200 | 80 ÷ 260 | 100 ÷ 360 | 130 ÷ 450 | |



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TYPICAL CHEMICAL COMPOSITION OF WIRE

| C % | Mn % | Si % | S % | P % | Cr % | Ni % | Mo % | Cu % | V % |
|------|------|------|-------|-------|------|------|------|------|------|
| 0.08 | 1.60 | 0.50 | 0.007 | 0.007 | 0.30 | 1.50 | 0.25 | 0.12 | 0.09 |

TYPICAL MECHANICAL PROPERTIES

| GAS | | Yield strength | Tensile strength | Elongation on | 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) |
| M21 | as welded | 750 | 820 | 19 | 120 | 100 | 90 | 60 | - |
| M13 | as welded | 790 | 840 | 20 | 140 | 110 | 100 | 80 | 60 |

PRODUCTS AVAILABLE

| Process | Product | Classification AWS | Classification EN |
|-------------------------------------|------------------|-----------------------|------------------------------|
| MIG/MAG Solid wire | INEFIL 100 | AWS A 5.28: ER100S-1 | EN 16834-A: G Mn3Ni1,5Mo |
| | INEFIL 110 | AWS A 5.28: ER110S-1 | (EN 16834-A: G Mn3Ni2,5CrMo) |
| | INEFIL 70 | AWS A 5.28: ER100S-G | EN 16834-A: G Mn3NiCrMo |
| | INEFIL NIMO | AWS A 5.28: ER100S-G | EN 16834-A: G Mn3Ni1Mo |
| TIG Rods | INETIG 100 | AWS A 5.28: ER100S-1 | EN 16834-A: W Mn3Ni1,5Mo |
| | INETIG 110 | AWS A 5.28: ER110S-1 | (EN 16834-A: W Mn3Ni2,5CrMo) |
| SAW Submerged arc | INESUB S3NIMO | AWS A 5.23: EG | EN 26304-A: S3Ni1Mo |
| | INESUB EF3 | AWS A 5.23: EF3 | EN 26304-B: SUN2M33 |
| FCAW Cored wire | INETUB M111TG-K3 | AWS A 5.28: E110C-K3 | EN 18276-A: T 2NiMo |
| | INETUB M91TG | AWS A 5.28: E90C-G | EN 18276-A: T 55 5 Z M M |
| | 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 | INE 80 B | AWS A 5.5: E10018M | EN 18275-A: E 1NiMo |