

TNC-70A

AWS A5.11 ENiCrFe-1
EN ISO 14172 E Ni 6062
JIS Z 3224 DNiCrFe-1J

Characteristics and Applications:

TNC-70A is a low hydrogen type covered electrode (for DC). The normal composition of the weld metal includes 70Ni, 15Cr, 8Fe, 3.5Mn, 2.5Nb, and provides excellent mechanical properties, good heat resistance, corrosion resistance and good toughness especially at low temperature. It is suitable for the build-up welding in all positions of Inconel, Inconel to stainless steel, and electrodes with diameters under ϕ 3.2(mm).

Notes on usage:

1. Be sure to clean up the contaminations on the base metal, groove and pass to pass with stainless steel brush.
2. Dry the electrodes at 350~400°C for 60 minutes before using. Take out a batch of half day consumption and keep at 100~150°C during welding process.
3. Use back-step method to prevent arc starting from blowholes and hold for 3-5 seconds at every end-up.
4. Maintain short arc length to prevent porosity problem.
5. Do not exceed the range of recommended current. Over heat input might decrease the impact value.

Typical chemical composition of weld metal (wt%):

| | C | Mn | Si | P | S | Cr | Ni | Nb+Ta | Fe | Co |
|---------------|-------|------|-------|-------|--------|-----------|-------|--------------|-------|-------|
| AWS | ≤0.08 | ≤3.5 | ≤0.75 | ≤0.03 | ≤0.015 | 13.0-17.0 | ≥62.0 | 1.5-4.0 | ≤11.0 | - |
| EN ISO | ≤0.08 | ≤3.5 | ≤0.8 | - | - | 13.0-17.0 | ≥62.0 | (Nb) 0.5-4.0 | ≤11.0 | - |
| Typical value | 0.04 | 2.3 | 0.5 | 0.012 | 0.007 | 14.00 | 78.00 | 1.60 | 3.5 | 0.025 |

Typical mechanical properties of weld metal:

| | 降伏強度 MPa(ksi) | Tensile strength MPa(ksi) | Elongation % | Charpy V-Notch J (ft-lbf) -196°C (-320°F) |
|---------------|------------------|------------------------------|-----------------|---|
| AWS | - | ≥550(80) | ≥30 | - |
| EN ISO | ≥360(52) | ≥550(80) | ≥27 | - |
| Typical value | 395(57) | 600(87) | 34 | 89(66) |

Welding position:



Sizes and recommended current range (DC <+>):

| Diameter (mm) | | 3.2 | 4.0 |
|---------------|------|--------|---------|
| Length (mm) | | 350 | 350 |
| Amps | F | 90-120 | 120-160 |
| | V&OH | 70-110 | 90-130 |

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