

TS-410NM

AWS A5.4 E410NiMo-16
EN ISO 3581-A-E 13 4 R 1 2
JIS Z 3221 ES410NiMo-16

Characteristics and Applications:

TS-410NM is a lime titania type low hydrogen basic electrode. Compared with TS-410, TS-410M provides better as-welded toughness, corrosion and oxidation resistance. TS-410NM is widely used for welding ASTM CA6NM (JIS SCS6, SCS5) casting, as well as 410, 410S and 405 base metals. Owing to their hardenability and they are easy to crack in weld bead or HAZ, pre-heat and PWHT are recommended.

Notes on usage:

1. Clean up the contaminations on the base metal, groove and pass to pass with stainless steel brush.
2. Maintain short arc length. Moving range should be controlled within 2.5 times of the wire's dia when you are welding with weave method.
3. Dry the electrodes at 250~300°C for 60 minutes before using. Take out consumables for half day consumption and keep in the environment at 100~150°C during welding process.
4. Use lower current to prevent from cracking and minimize base metal dilution.
5. Pre-heat at 100-150°C, and post-weld heat treatment at 620°C or lower.

Typical chemical composition of weld metal (wt%):

| | C | Mn | Si | P | S | Cr | Ni | Mo | Cu |
|---------------|-------|------|-------|-------|-------|-----------|---------|-----------|-------|
| AWS | ≤0.06 | ≤1.0 | ≤0.90 | ≤0.04 | ≤0.03 | 11.0-12.5 | 4.0-5.0 | 0.40-0.70 | ≤0.75 |
| EN ISO | ≤0.06 | ≤1.0 | ≤0.90 | ≤0.04 | ≤0.03 | 11.0-12.5 | 4.0-5.0 | 0.40-0.70 | ≤0.75 |
| Typical value | 0.02 | 0.2 | 0.35 | 0.023 | 0.004 | 12.4 | 4.5 | 0.54 | 0.04 |

Typical mechanical properties of weld metal:

| | Tensile strength MPa(ksi) | Elongation % | PWHT |
|---------------|------------------------------|-----------------|-----------|
| AWS | ≥760(110) | ≥15 | 605°Cx1hr |
| EN ISO | ≥760(110) | ≥10 | PWHT |
| Typical value | 970(141) | 18 | 605°Cx1hr |

Welding position:



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

| Diameter (mm) | 2.6 | 3.2 | 4.0 | 4.8 | |
|---------------|------|-------|--------|---------|---------|
| Length (mm) | 300 | 350 | 350 | 350 | |
| Amps | F | 60-90 | 80-130 | 130-170 | 180-210 |
| | V&OH | 50-70 | 70-110 | 100-130 | - |

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