

## Metrode Thermet 25.35.Nb

25.35.Nb is an MMA electrode with a basic flux coating on nearly matching core wire (0,1% C-25% Cr-35% Ni-0,6% Nb). The electrode is specifically designed to deposit weld metal, which matches the composition of similar castings. This alloy was developed from 800 type alloys with increased chromium and nickel contents and exhibits improved carburisation and oxidation resistance. It is used at temperatures up to 1100°C and is resistant to thermal shock and fatigue. The electrode is optimised for DC+ welding in all positions including fixed pipework in the ASME 5G/6G positions. Moisture resistant coating giving sound porosity-free deposits.

### Applications

Applications include the welding of centrifugally cast pyrolysis coils, reformer tubes, return bends, and tees for the petrochemical industry.

### Materials to be Welded

#### Similar Cast Alloys

Alloy HP10Cb (ACI-ASTM terminology)

Paralloy CR39W (Doncasters Paralloy)

Lloyds T57 (LBA)

Centralloy HI01 (Centracero)

### Typical Chemical Analysis (All weld metal)

|               |             |              |             |
|---------------|-------------|--------------|-------------|
| % Carbon      | 0,14 max    | % Nickel     | 34,0 - 39,0 |
| % Manganese   | 2,5 - 4,0   | % Molybdenum | 0,5 max     |
| % Silicon     | 0,2 - 1,0   | % Niobium    | 0,5 - 1,5   |
| % Sulphur     | 0,02 max    | % Copper     | 0,15 max    |
| % Phosphorous | 0,03 max    | % Lead       | 0,01 max    |
| % Chrome      | 24,0 - 28,0 | % Tin        | 0,01 max    |

### Typical Mechanical Properties (All weld metal in the as welded condition)

|                     |         |
|---------------------|---------|
| 0,2% Proof Stress   | 460 MPa |
| Tensile Strength    | 660 MPa |
| % Elongation on 4d  | 34      |
| % Elongation on 5d  | 32      |
| % Reduction of Area | 42      |

### Packing Data and Operating Current (DC+ AC 70 OCV min)

| Diameter (mm) | Electrode Length (mm) | Current (A) | Pack Mass (kg) | Item Number |
|---------------|-----------------------|-------------|----------------|-------------|
| 3,2           | 320                   | 75 - 120    | 4,0            | W077620     |

### Storage and Re-baking

Hermetically sealed ring-pull metal tin with unlimited shelf life. Direct use from tin is satisfactory for longer than a working shift of 8 hr. Excessive exposure of electrodes to humid conditions will cause some moisture pick-up and increase the risk of porosity.

For electrodes that have been exposed:

Re-dry at 150–250°C/1-2 hr to restore to as-packed condition. Maximum 350°C, 3 cycles, 10 hr total.

Storage of re-dried electrodes at 50–200°C in holding oven or heated quiver: no limit, but maximum 6 weeks recommended.

Recommended ambient storage conditions for opened tins (using plastic lid): < 60% RH, > 18°C.

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