

ArcStar 81N1M

AWS A5.29 E81T1-Ni1M-J
EN ISO 17632-A-T 46 4 1Ni P M21 1 H5

Characteristics and Applications:

ArcStar 81N1M is a gas-shielded flux cored wire for all-position welding. It is designed for welding 590 N/mm² high tensile steel for low temperatures.

It provides good weldability with smooth bead appearance, less spatter and stable arc as well as good impact properties down to -50°C.

It is also suitable for welding on construction machinery, shipbuilding, offshore, structures, bridges, storage tanks and piping.

Notes on usage:

1. Excessive heat input should reduce impact value. Therefore, perform welding with selecting proper heat input based on the required impact value.
2. Must pre-heat at 50~150°C varied on steels, plate thickness and restraint.
3. Use DC(+) polarity.
4. Use 75~80%Ar+25~20%CO₂ as shielding gas.

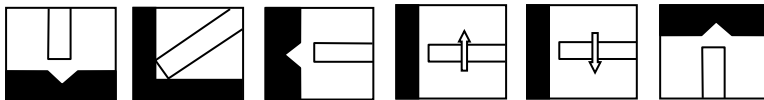
Typical chemical composition of weld metal (wt%):

| | C | Mn | Si | P | S | Ni |
|---------------|-------|-------|-------|--------|--------|-----------|
| AWS | ≤0.12 | ≤1.75 | ≤0.80 | ≤0.030 | ≤0.030 | 0.80-1.10 |
| EN ISO | - | ≤1.4 | ≤0.80 | - | - | 0.6-1.2 |
| Typical value | 0.05 | 1.25 | 0.15 | 0.012 | 0.007 | 1.00 |

Typical mechanical properties of weld metal:

| | Yield strength MPa(ksi) | Tensile strength MPa(ksi) | Elongation % | Charpy V-Notch J(ft-lbf) | | PWHT |
|---------------|----------------------------|------------------------------|-----------------|-----------------------------|---------|-----------|
| AWS | ≥470(68) | 550-690(80-100) | ≥19 | -40°C (-40°F) | ≥27(20) | - |
| EN ISO | ≥460(67) | 530-680(77-99) | ≥20 | -40°C (-40°F) | ≥47(35) | - |
| Typical value | 611(89) | 656(95) | 26 | -40°C (-40°F) | 108(80) | - |
| | 568(82) | 628(91) | 26 | -50°C (-60°F) | 65(48) | 600°Cx1hr |

Welding position:



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

Stick out:15-25(mm), flow rate:20-25(l/min):

| Diameter (mm) | | 1.2 | 1.6 |
|---------------|--|---------------------|---------------------|
| Position | | | |
| F、HF | | 180A-300A / 24V-34V | 200A-350A / 24V-32V |
| VU、OH | | 150A-220A / 23V-28V | 160A-220A / 22V-26V |

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