



E81T1-Ni2M

Classification: AWS A5.29 / ASME SFA 5.29 E81T1-Ni2C / E81T1-Ni2M

Description: E81T1-Ni2 is a 2 ½% Ni steel designed for single and multiple pass welding of carbon and certain low alloy steels such as ASTM A572, A575 and A734 in all positions. It is an excellent selection for welding steels that require good CVN toughness and 80,000 – 100,000 psi tensile strength. E81T1-Ni2 combines strength and CVN toughness making it ideal for offshore platform construction, shipbuilding, earthmoving and mining machinery.

Shielding Gas: 100% CO₂, 75% Ar/25% CO₂, 35-50 cfh

Typical Deposit Chemistry: %

| | C | Mn | P | S | Si | Ni |
|------------------------|-----|-----|-----|-----|-----|------|
| CO ₂ | .05 | .83 | .01 | .01 | .29 | 2.40 |
| 75Ar/25CO ₂ | .04 | .90 | .01 | .01 | .30 | 2.40 |

Typical Mechanical Properties:

| | CO ₂ | 75Ar/25CO ₂ |
|-----------------------|-----------------|------------------------|
| Tensile Strength(psi) | 87,000 | 90,000 |
| Yield Strength (psi) | 73,000 | 80,000 |
| Elongation | 26 | 22 |
| CVN (ft•lb f) @ 0°F | 50 | 40 |

Typical Welding Parameters – Carbon & Low Alloy – Flux Cored -All position-CO₂*- DCEP

| Dia. | Position | Operating Range | | Optimum | | | |
|-------|-------------|-----------------|-------|---------|-----------|-------|--------|
| | | Amps | Volts | Amps | WFS (ipm) | Volts | ESO |
| .045" | Flat | 130-300 | 21-32 | 250 | 450 | 28 | ½ - 1" |
| | Overhead | 150-280 | 21-30 | 190 | 305 | 26 | ½ - 1" |
| | Vertical Up | 130-260 | 21-29 | 190 | 305 | 25 | ½ - 1" |
| .052" | Flat | 140-330 | 19-32 | 275 | 400 | 28 | ½ - 1" |
| | Overhead | 150-290 | 21-28 | 200 | 245 | 26 | ½ - 1" |
| | Vertical Up | 140-270 | 21-27 | 200 | 245 | 25 | ½ - 1" |
| 1/16" | Flat | 150-400 | 22-34 | 330 | 330 | 29 | ½"-1" |
| | Overhead | 150-310 | 22-28 | 225 | 180 | 26 | ½ -1" |
| | Vertical Up | 150-280 | 22-27 | 225 | 180 | 25 | ½ - 1" |

*For 75Ar/25CO₂ decrease voltage by 1 to 1.5 volts.

Notice: The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus, the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any purpose with respect to its products.