# Select 80C-Ni1

*Low Alloy / Gas Shielded / Metal Cored*

**PRODUCT DATA SHEET**

## FEATURES

- Intended for welding horizontal and flat fillets and flat groove welds.
- Can be used with shielding gas mixtures of 75-95% Ar/balance CO2, and 95-98% Ar/balance O2.
- A good selection for welding steels such as ASTM A203-Grade E, A302, A575, and A633.
- Typical applications would be fabrication of earthmoving machinery parts and buckets, mining machinery, and fine-grained structural steels.

## CONFORMANCES

| | |
|---|---|
| **AWS A5.28** | E80C-Ni1-H4 |
| **ASME SFA 5.28** | E80C-Ni1-H4 |
| **AWS A5.36** | E80T15-M20A5-Ni1-H4<br>E80T15-M22A5-Ni1-H4 |
| **AWS D1.8** | 1/16 in (1.6 mm), (90% Ar/10% CO2) |

## DIAMETERS (in (mm))

0.035 (0.9), 0.045 (1.2), 0.052 (1.3), 1/16 (1.6)

## POSITIONS

## SHIELDING GAS

75-95%Ar/Balance CO2, 95-98%Ar/Balance O2
Flow Rate: 40 - 50 CFH

## POLARITY

Direct Current Electrode Positive (DCEP)

## TYPICAL WELD DEPOSIT CHEMISTRY (WT%)

| Shielding Gas | C | Cu | Mn | Mo | Ni | P | S | Si | V |
|---|---|---|---|---|---|---|---|---|---|
| 90%Ar / 10%CO2 | 0.03 | 0.11 | 1.40 | 0.15 | 0.94 | 0.009 | 0.010 | 0.53 | 0.01 |
| 98%Ar / 2%O2 | 0.03 | 0.05 | 1.45 | 0.14 | 0.95 | 0.009 | 0.010 | 0.50 | 0.01 |

## TYPICAL MECHANICAL PROPERTIES

| Shielding Gas | Tensile Strength ksi (MPa) | Yield Strength ksi (MPa) | Elongation (%) | Weld Condition | PWHT Temp | CVN @ -50°F (-46°C) ft-lb (J) |
|---|---|---|---|---|---|---|
| 90%Ar / 10%CO2 | 94 (648) | 86 (593) | 25 | As-Welded | - | 30 (41) |
| 98%Ar / 2%O2 | 99 (683) | 83 (572) | 25 | As-Welded | - | 35 (47) |



*Revision: 1/17/2025*

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## RECOMMENDED WELDING PARAMETERS **

| Diameter in (mm) | Shielding Gas | Position | WFS* in/min (m/min) | Amps | Volts | CTWD* in (mm) |
|---|---|---|---|---|---|---|
| 0.035 (0.9 mm) | 75% Ar/25% CO2 | Flat & Horizontal | 345 (8.8) | 170 | 25 | 1/2 - 5/8 (13 - 16) |
| | | Flat & Horizontal | 425 (10.8) | 190 | 26 | 1/2 - 5/8 (13 - 16) |
| | | Flat & Horizontal | 475 (12.1) | 210 | 27.5 | 5/8 - 3/4 (16 - 19) |
| | | Flat & Horizontal | 570 (14.5) | 225 | 29 | 5/8 - 3/4 (16 - 19) |
| 0.045 (1.2 mm) | 75% Ar/25% CO2 | Flat & Horizontal | 260 (6.6) | 200 | 25 | 1/2 - 5/8 (13 - 16) |
| | | Flat & Horizontal | 305 (7.7) | 220 | 26 | 1/2 - 5/8 (13 - 16) |
| | | Flat & Horizontal | 360 (9.1) | 240 | 27.5 | 5/8 - 3/4 (16 - 19) |
| | | Flat & Horizontal | 405 (10.3) | 255 | 29 | 5/8 - 3/4 (16 - 19) |
| 0.052 (1.3 mm) | 75% Ar/25% CO2 | Flat & Horizontal | 235 (6.0) | 215 | 25 | 5/8 - 3/4 (16 - 19) |
| | | Flat & Horizontal | 315 (8.0) | 260 | 26 | 5/8 - 3/4 (16 - 19) |
| | | Flat & Horizontal | 330 (8.4) | 275 | 27.5 | 3/4 - 1 (19 - 25) |
| | | Flat & Horizontal | 345 (8.8) | 295 | 29 | 3/4 - 1 (19 - 25) |
| 1/16 (1.6 mm) | 75% Ar/25% CO2 | Flat & Horizontal | 200 (5.1) | 250 | 25 | 5/8 - 3/4 (16 - 19) |
| | | Flat & Horizontal | 245 (6.2) | 290 | 26 | 5/8 - 3/4 (16 - 19) |
| | | Flat & Horizontal | 275 (7.0) | 310 | 27.5 | 3/4 - 1 (19 - 25) |
| | | Flat & Horizontal | 285 (7.2) | 330 | 29 | 3/4 - 1 (19 - 25) |

** WFS = Wire Feed Speed, CTWD = Contact Tip To Work Distance*
***The parameters listed are recommended starting points of operation and the ranges for amperage, wfs, and voltage could be extended based on fitness for application. For products with "all-position" capability, as determined and listed in classification, the position recommendation can be determined based on operator skill and material thickness and isn't limited to the listing.*

*For higher Ar/CO2 blends and Ar/O2 mixes, lower voltage by 1-3 volts.*

## APPROVALS

| Agency | Approval | Shielding Gas | Diameter(s) in (mm) |
|---|---|---|---|
| CWB CSA W48-23 | E550T15-M21A4-Ni1-H4 | M21 (75%Ar / 25%CO2) | 0.035 (0.9) - 1/16 (1.6) |
| | E550T15-M20A4-Ni1-H4 | M20 (85%Ar / 15%CO2) | 0.035 (0.9) - 1/16 (1.6) |
| | E550T15-GA4-Ni1-H4 | G (Gas Mixture*) | 0.035 (0.9) - 1/16 (1.6) |

** G - Gas mixtures containing components not listed, or mixtures outside the composition range listed in AWS A5.32 (ISO 14175). Two gas mixtures with the same G - classification may not be interchangeable. For more details see approval website or contact Select-Arc.*

## PACKAGING [lbs [kgs]]

33 (15) Spools, 60 (27.2) Coils, 500 (226.8) Round Drum, 800 (362.9) Hex Drum, 900 (408.2) Hex Drum

**Some packaging options may not be available depending on diameter and product. Special package options may be available upon request.*

## STORAGE AND HANDLING

All products should be stored in original packaging, in dry conditions and handled with care. For more information refer to our website.



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