Select 80C-D2

Low Alloy / Gas Shielded / Metal Cored

PRODUCT DATA SHEET

FEATURES

- Intended for welding of certain high strength, low alloy steels where a minimum tensile strength of 90 ksi is required in the deposited metal.
- Can be used to substitute ER80S-D2 or ER90S-D2 solid wire.
- Ideal for applications requiring weld metal which matches the mechanical properties of HSLA pressure vessel steels such as ASTM A302 Grade B, HSLA steels, and manganese-molybdenum castings such as ASTM A49, A291, and A735.
- Offers many advantages over solid wires including less sensitivity to subsurface porosity, elimination of lack of fusion or "cold lap", and 30-50% faster travels speeds for a given weldment size.
- The recommended shielding gas is 75%Ar/balance CO2, as higher argon blends increase the strength of the weld deposit.

CONFORMANCES

AWS A5.28 E90C-D2

DIAMETERS [in [mm]]

0.045 (1.2), 0.052 (1.3)

POSITIONS

SHIELDING GAS

75-80% Ar/Balance CO2, 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	P	S	Si	V
75%Ar / 25%CO2	0.06	0.05	1.39	0.47	0.009	0.011	0.48	0.004
98%Ar / 2%O2	0.07	0.10	1.52	0.49	0.008	0.010	0.55	0.003

TYPICAL MECHANICAL PROPERTIES

Shielding Gas	Tensile Strength ksi (MPa)	Yield Strength ksi (MPa)	Elongation (%)	Weld Condition	PWHT Temp	CVN @ -20°F (-30°C) ft-lb (J)
75%Ar / 25%CO2	100 (690)	88 (608)	25	As-Welded	-	40 (54)
98%Ar / 2%O2	106 (731)	97 (669)	23	As-Welded	-	41 (56)

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RECOMMENDED WELDING PARAMETERS **

Diameter in (mm)	Shielding Gas	Position	WFS* in/min (m/min)	Amps	Volts	CTWD* in (mm)
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)

** 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.*

Welding parameters are for 75% Ar /25% CO2, at higher levels of argon the voltage should be gradually decreased: 1-2 volts for 98% Ar/2% O2.

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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