Select 810-B2

Low Alloy / Gas Shielded / Flux Cored

PRODUCT DATA SHEET

FEATURES

- Select 810-B2 is a low alloy steel electrode for flux cored arc welding with external gas shielding.
- Designed for Cr-Mo steel plate and pipe, where 1¼% Cr and ½% Mo are required in the weld deposit.
- Carbon dioxide is the recommended shielding gas; mixtures of 75-80% argon-balance carbon dioxide may be employed.
- The smooth arc transfer, low spatter, and fast freezing slag make this an excellent choice for welding boiler and pressure vessel components in all positions.
- Requires careful control of preheat and interpass temperatures, as well as proper post weld heat treatment.
- Select 810-B2 is intended to weld steels subject to high temperature service, such as A387 Gr. 11 plate and A335 P11 pipe.
- Typical applications include the fabrication of boilers, heat exchangers, and pressure vessels.
- The AWS classification requires no minimum toughness values for this electrode; therefore, any specific toughness requirements should be discussed prior to use of the electrode.

CONFORMANCES

AWS A5.29	E81T1-B2C-H4
	E81T1-B2M-H4
AWS A5.36	E81T1-M21PZ-B2-H4
ASME SFA 5.29	E81T1-B2C-H4
	E81T1-B2M-H4

DIAMETERS (in (mm))

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

POSITIONS

SHIELDING GAS

75-80% Ar / Balacce CO2, 100% CO2
Flow Rate: 40 - 50 CFH

POLARITY

Direct Current Electrode Positive (DCEP)

TYPICAL WELD DEPOSIT CHEMISTRY (WT%)

Shielding Gas	C	Cr	Mn	Mo	P	S	Si
100%CO2	0.05	1.11	0.48	0.52	0.010	0.010	0.56
75%Ar / 25%CO2	0.06	1.17	0.52	0.51	0.010	0.010	0.69

Revision: 1/17/2025

600 Enterprise Drive, P.O. Box 259, Fort Loramie, Ohio 45845-0259 • 800-341-5215 • www.Select-Arc.com

TYPICAL MECHANICAL PROPERTIES

Shielding Gas	Tensile Strength ksi (MPa)	Yield Strength ksi (MPa)	Elongation (%)	Weld Condition	PWHT Temp
100%CO2	90 (621)	76 (524)	25	PWHT	1275°F for 1 hr
75%Ar / 25%CO2	96 (662)	83 (572)	23	PWHT	1275°F for 1 hr

RECOMMENDED WELDING PARAMETERS **

Diameter in (mm)	Shielding Gas	Position	WFS* in/min (m/min)	Amps	Volts	CTWD* in (mm)
0.035 (0.9 mm)	100% CO2	All Positions	275 (7.0)	120	23	1/2 - 5/8 (13 - 16)
		All Positions	320 (8.1)	135	24	1/2 - 5/8 (13 - 16)
		All Positions	420 (10.7)	160	26	1/2 - 5/8 (13 - 16)
		Flat & Horizontal	465 (11.8)	180	27	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	570 (14.5)	200	29	5/8 - 3/4 (16 - 19)
0.045 (1.2 mm)	100% CO2	All Positions	200 (5.1)	145	23	1/2 - 5/8 (13 - 16)
		All Positions	235 (6.0)	160	24	1/2 - 5/8 (13 - 16)
		All Positions	300 (7.6)	185	26	1/2 - 5/8 (13 - 16)
		Flat & Horizontal	375 (9.5)	215	27	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	440 (11.2)	235	29	5/8 - 3/4 (16 - 19)
0.052 (1.3 mm)	100% CO2	All Positions	170 (4.3)	155	23	5/8 - 3/4 (16 - 19)
		All Positions	200 (5.1)	175	24	5/8 - 3/4 (16 - 19)
		All Positions	250 (6.4)	225	26	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	310 (7.9)	250	27	3/4 - 1 (19 - 25)
		Flat & Horizontal	395 (10.0)	280	29	3/4 - 1 (19 - 25)
1/16 (1.6 mm)	100% CO2	All Positions	125 (3.2)	165	23	5/8 - 3/4 (16 - 19)
		All Positions	150 (3.8)	195	24	5/8 - 3/4 (16 - 19)
		All Positions	185 (4.7)	225	26	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	265 (6.7)	280	27	3/4 - 1 (19 - 25)
		Flat & Horizontal	325 (8.3)	320	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 Welding in 75-80% Ar / Balance CO2, decrease by 1 - 1.5 volts

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.

Revision: 1/17/2025

600 Enterprise Drive, P.O. Box 259, Fort Loramie, Ohio 45845-0259 • 800-341-5215 • www.Select-Arc.com