

FabCO® 811W



AWS A5.29: E81T1-W2C H8

WELDING POSITIONS:



FEATURES:

- Deposit composition similar to many weathering steel compositions
- Fast-freezing slag
- "H8" low-hydrogen weld deposit
- 80-ksi (550 MPa) tensile strength deposit with good impact toughness

BENEFITS:

- Provides both atmospheric corrosion resistance and coloring (color match) similar to weathering steel base metals
- Provides good puddle control and bead contour when welding out-of-position
- Helps minimize risk of hydrogen induced cracking
- Suitable for use in many D1.1 and D1.5 weathering steel applications and materials to be left bare and unpainted

APPLICATIONS:

- Single or multi-pass welding
- Weathering steels
- ASTM A242, A588, A606, A847
- Structural fabrication
- Color-matching welds
- AASHTO M270 50W
- Bridge fabrication
- Weathering steel sculptures & details

SLAG SYSTEM: Fast-freezing, rutile-type, flux-cored wire

SHIELDING GAS: 100% Carbon Dioxide (CO₂), 35-50 cfh (17-24 l/min)

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)

STANDARD DIAMETERS: 0.045" (1.2 mm), 0.052" (1.4 mm), 1/16" (1.6 mm)

RE-DRYING: Not recommended

STORAGE: Product should be stored in a dry, enclosed environment, and in its original intact packaging

TYPICAL WELD METAL CHEMISTRY* (Chem Pad):

Weld Metal Analysis (%)	100% CO ₂	AWS Spec
Carbon (C)	0.02	0.12
Manganese (Mn)	0.65	0.50-1.30
Silicon (Si)	0.44	0.35-0.80
Phosphorus (P)	0.011	0.030
Sulphur (S)	0.009	0.030
Nickel (Ni)	0.68	0.40-0.80
Chromium (Cr)	0.56	0.40-0.70
Copper (Cu)	0.50	0.30-0.75

Note: AWS specification single values are maximums.

TYPICAL DIFFUSIBLE HYDROGEN*:

Hydrogen Equipment	100% CO ₂	AWS Spec
(GAS CHROMATOGRAPHY)	5.5 ml/100 g	8.0 ml/100 g Maximum

TYPICAL MECHANICAL PROPERTIES* (As Welded):

Mechanical Tests	100% CO ₂	AWS Spec
Tensile Strength	84,000 psi (579 MPa)	80,000-100,000 psi (550-690 MPa)
Yield Strength	76,000 psi (524 MPa)	68,000 psi (470 MPa) Minimum
Elongation % in 2" (50 mm)	26%	19% Minimum

TYPICAL CHARPY V-NOTCH IMPACT VALUES* (As Welded):

CVN Temperatures	100% CO ₂	AWS Spec
CVN @-20°F (-30°C)	32 ft•lbs (43 Joules)	20 ft•lbs (27 Joules) Minimum

*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and Hobart Brothers Company expressly disclaims any liability incurred from any reliance thereon. Typical data are those obtained when welded and tested in accordance with the AWS A5.29 specification. Other tests and procedures may produce different results. No data is to be construed as a recommendation for any welding condition or technique not controlled by Hobart Brothers Company.

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Diameter Inches (mm)	Weld Position	Amps	Volts	Approx. Wire Feed Speed		Deposition Rate		Contact Tip to Work Distance	
				(in/min)	(m/min)	(lbs/hr)	(kg/hr)	Inches	(mm)
0.045 (1.2)	All Position	115	21	120	(3.0)	2.7	(1.2)	5/8	(16)
0.045 (1.2)	All Position	200	26	285	(7.2)	6.1	(2.8)	3/4	(19)
0.045 (1.2)	All Position	250	28	425	(10.8)	8.8	(4.0)	3/4	(19)
0.045 (1.2)	Flat and Horizontal	275	28	440	(11.2)	9.6	(4.3)	3/4	(19)
0.045 (1.2)	Flat and Horizontal	325	30	660	(16.8)	14.5	(6.6)	3/4	(19)
0.052 (1.4)	All Position	125	21	110	(2.8)	3.8	(1.7)	5/8	(16)
0.052 (1.4)	All Position	225	25	240	(6.1)	6.9	(3.2)	3/4	(19)
0.052 (1.4)	All Position	250	26	310	(7.9)	8.1	(3.7)	3/4	(19)
0.052 (1.4)	Flat and Horizontal	300	29	410	(10.4)	11.6	(5.3)	3/4	(19)
0.052 (1.4)	Flat and Horizontal	375	32	550	(14.0)	15.8	(7.2)	1	(25)
1/16 (1.6)	All Position	150	22	100	(2.5)	4.0	(1.8)	3/4	(19)
1/16 (1.6)	All Position	225	25	170	(4.3)	6.4	(2.9)	3/4	(19)
1/16 (1.6)	All Position	275	27	220	(5.6)	7.6	(3.4)	3/4	(19)
1/16 (1.6)	Flat and Horizontal	350	29	345	(8.8)	14.0	(6.4)	1	(25)
1/16 (1.6)	Flat and Horizontal	425	31	480	(12.2)	20.2	(9.2)	1	(25)

- Maintaining a proper welding process, such as pre-heat, interpass temperature, and material thickness may be critical depending on the types of steel being welded.
- **See Above:** This information was determined by welding using 100% CO₂ shielding gas with a flow rate between 35-50 cfh (17-24 l/min).
- **All positions include:** Flat, Horizontal, Vertical Up, and Overhead.

STANDARD DIAMETERS AND PACKAGES: For a complete list of diameters and packaging, please contact Hobart Brothers at (800) 424-1543 or (937) 332-5188 for International Customer Service.

Diameter Inches (mm)	33-lb. (15kg) Spool
0.045 (1.2)	S650612-029
0.052 (1.4)	S650615-029
1/16 (1.6)	S650619-029

CONFORMANCES AND APPROVALS:

- AWS 5.29: E81T1-W2C H8
- AWS A5.29M, E551T1-W2C H8
- ASME SFA 5.29, E81T1-W2C H8

TECHNICAL QUESTIONS? For technical support of Hobart Filler Metals products, contact the Applications Engineering department by phone toll-free at 1-800-532-2618 or by e-mail at Applications.Engineering@hobartbrothers.com

CAUTION:

Consumers should be thoroughly familiar with the safety precautions on the warning label posted in each shipment and in the American National Standard Z49.1, "Safety in Welding and Cutting," published by the American Welding Society, 550 NW LeJune Road, Miami, FL 33126 (can be downloaded online at www.aws.org); OSHA Safety and Health Standards 29 CFR 1910 is available from the U.S. Department of Labor, Washington, D.C. 20210

Material Safety Data Sheets on any Hobart Brothers Company product may be obtained from Hobart Customer Service or at www.hobartbrothers.com.

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