

AWS A5.29: E81T1-K2CJ H8

WELDING POSITIONS:



FEATURES:

- Fast freezing slag
- Excellent impact toughness
- Low diffusible hydrogen
- Low spatter levels
- Smooth, stable arc characteristics

BENEFITS:

- Suitable for welding out of position
- Resists cracking in severe applications
- Minimizes risk of hydrogen-induced cracking
- Reduces clean-up time, improves productivity
- Improves operator appeal

APPLICATIONS:

- Single or multi-pass welding
- High-strength low-alloy steels
- General fabrication
- Offshore
- Shipbuilding
- Heavy equipment

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

SHIELDING GAS: 100% Carbon Dioxide (CO₂), 35-50 cfh (14-24 l/min)

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)

STANDARD DIAMETERS: 0.045" (1.2 mm), 0.052" (1.4), 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)	0.04	0.15
Manganese (Mn)	1.05	0.50-1.75
Phosphorus (P)	0.01	0.030
Sulphur (S)	0.008	0.030
Silicon (Si)	0.30	0.80
Nickel (Ni)	1.70	1.00-2.00
Chrome (Cr)	0.03	0.15
Molybdenum (Mo)	0.01	0.35
Boron (B)	.003	Not Specified
Vanadium (Va)	0.02	0.05

Note: AWS specification single values are maximums.

TYPICAL DIFFUSIBLE HYDROGEN*:

Hydrogen Equipment	100% CO ₂	AWS Spec
(GAS CHROMATOGRAPHY)	4.2 ml/100g	8.0 ml/100g Maximum

TYPICAL MECHANICAL PROPERTIES* (As Welded):

Mechanical Tests	100% CO ₂	AWS Spec
Tensile Strength	85,000 psi (586 MPa)	80,000-100,000 psi (550-690 MPa)
Yield Strength	80,000 psi (552 MPa)	68,000 psi (470 MPa) Minimum
Elongation % in 2" (50 mm)	23%	19%

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

CVN Temperatures	100% CO ₂	AWS Spec
Avg. at -20°F (-29°C)	85 ft•lbs (115 Joules)	20 ft•lbs (27 Joules) Minimum
Avg. at -40°F (-40°C)	70 ft•lbs (95 Joules)	20 ft•lbs (27 Joules) Minimum "J" Requirement

*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and Hobart Brothers LLC 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 LLC.

FabCO[®] 81K2-C

Diameter		Weld Position	Amps	Volts	Wire-Feed Speed		Deposition Rate		Contact Tip to Work Distance	
Inches	(mm)				in/min	(m/min)	lbs/hr	(kg/hr)	Inches	(mm)
0.045	(1.2)	All Position	170	22	250	(6.4)	5.0	(2.3)	3/4	(19)
0.045	(1.2)	All Position	200	23	315	(8.0)	6.3	(2.9)	3/4	(19)
0.045	(1.2)	Flat & Horizontal	250	25	500	(12.7)	9.7	(4.4)	1	(25)
0.045	(1.2)	Flat & Horizontal	280	28	605	(15.4)	12.1	(5.5)	1	(25)
0.052	(1.4)	All Position	190	21	220	(4.7)	6.1	(2.8)	3/4	(19)
0.052	(1.4)	All Position	250	24	285	(7.2)	7.8	(3.5)	3/4	(19)
0.052	(1.4)	Flat & Horizontal	270	27	330	(8.4)	9.1	(4.1)	1	(25)
0.052	(1.4)	Flat & Horizontal	350	30	575	(14.6)	15.8	(7.2)	1	(25)
1/16	(1.6)	All Position	220	22	180	(3.3)	7.2	(3.3)	3/4	(19)
1/16	(1.6)	All Position	275	25	235	(6.0)	9.6	(4.4)	1	(25)
1/16	(1.6)	Flat & Horizontal	340	30	335	(8.5)	13.6	(6.2)	1	(25)
1/16	(1.6)	Flat & Horizontal	400	32	420	(10.7)	17.0	(7.7)	1	(25)

- **Maintaining a proper welding procedure - including pre-heat and interpass temperatures - may be critical depending on the type and thickness of steel being welded.**
- All position includes the following: Flat, Horizontal, Vertical Up, and Overhead.
- **See Above:** This information was determined by welding using 100% Carbon Dioxide (CO₂) shielding gas with a flow rate between 35-50 cfm (14-24 l/min).

DIAMETERS AND PACKAGES:

Diameter		15 Lb (7 Kg) Spool	33-lb. (15kg) Spool	33-lb. (15kg) Vacuum Packed Spool	500 Lb (227 Kg) Exacto-Pak
Inches	(mm)				
0.045	(1.2)	S288112-023	—	S288112-053	
0.052	(1.4)	—	—	—	S288115-050
1/16	(1.6)	—	S288119-029	—	

Hobart Brothers periodically evaluates our diameter and package offering based on end user demand. For current package and diameter availability please refer to www.hobartbrothers.com or call Hobart Brothers Customer Service: USA - (800) 424-1543, International - (937) 332-5188.

CONFORMANCES AND APPROVALS:

- **AWS A5.29**, E81T1-K2CJ H8
- **AWS A5.29M**, E551T1-K2CJ H8
- **ABS**, 3Y SA H10 (0.045" diameter)

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, 8669 NW 36th St., Miami, FL 33166 (can also 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

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

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