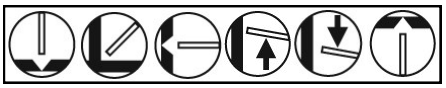
FabCOR® Edge™ Ni1

AWS A5.28: E80C-Ni1 H4

WELDING POSITIONS:



FEATURES: **BENEFITS:**

- Virtually no silicon deposits at weld bead toe lines — Reduces clean-up time, minimizes risk of inclusions
- Excellent gap bridging capabilities — Minimizes burn-through, reduces part rejection
- Higher deposition rates and travel speeds than solid wire — Increases productivity, more parts per hour
- Good impact toughness at low temperature — Resists cracking in severe applications

APPLICATIONS:

- High-strength low-alloy steels
- Single or multi-pass welding
- Structural fabrications
- Nickel-Molybdenum steels
- Heavy equipment
- Weathering steels

WIRE TYPE: Gas-shielded, metal-powder, metal-cored wire

SHIELDING GAS: 95-99% Argon (Ar)/Balance Oxygen (O_2), 75-95% Argon (Ar)/Balance Carbon Dioxide (CO_2), 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 (%)	75% Ar/25% CO_2	95% Ar/5% O_2	AWS Spec
Carbon (C)	0.04	0.04	0.12
Manganese (Mn)	1.25	1.24	1.75
Silicon (Si)	0.63	0.60	0.90
Sulphur (S)	0.011	0.013	0.030
Phosphorus (P)	0.007	0.008	0.025
Nickel (Ni)	0.98	0.94	0.80-1.10
Boron (B)	0.0039	0.0041	*

Note: AWS specification single values are maximums. * Report if > 0.0010%.

TYPICAL DIFFUSIBLE HYDROGEN*:

Hydrogen Equipment	75% Ar/25% CO_2	95% Ar/5% O_2	AWS Spec
(GAS CHROMATOGRAPHY)	2.1 ml/100g	3.4 ml/100g	4.0 ml/100g Maximum

TYPICAL MECHANICAL PROPERTIES* (As Welded):

Mechanical Tests	75% Ar/25% CO_2	95% Ar/5% O_2	AWS Spec
Tensile Strength	85,000 psi (586 MPa)	92,000 psi (634 MPa)	80,000 psi (550 MPa) Minimum
Yield Strength	73,000 psi (503 MPa)	81,000 psi (559 MPa)	68,000 psi (470 MPa) Minimum
Elongation % in 2” (50 mm)	25%	26%	24% Minimum

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

CVN Temperatures	75% Ar/25% CO_2	95% Ar/5% O_2	AWS Spec
Avg. at -50°F (-45°C)	44 ft•lbs (60 Joules)	41 ft•lbs (56 Joules)	20 ft•lbs (27 Joules) Minimum

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Diameter Inches	(mm)	Weld Position	Amps	Volts	Wire-Feed Speed in/min	(m/min)	Deposition Rate lbs/hr	(kg/hr)	Contact Tip to Work Distance Inches	(mm)
0.045	(1.2)	Flat & Horizontal	200	25	210	(5.3)	5.5	(2.5)	5/8	(16)
0.045	(1.2)	Flat & Horizontal	250	26	300	(7.6)	8.0	(3.6)	5/8	(16)
0.045	(1.2)	Flat & Horizontal	300	28	430	(10.9)	11.7	(5.3)	3/4	(19)
0.045	(1.2)	Flat & Horizontal	350	29	570	(14.5)	15.5	(7.1)	3/4	(19)
0.052	(1.4)	Flat & Horizontal	250	26	245	(6.2)	8.1	(3.7)	3/4	(19)
0.052	(1.4)	Flat & Horizontal	300	28	375	(9.5)	12.6	(5.7)	1	(25)
0.052	(1.4)	Flat & Horizontal	350	29	485	(12.3)	16.6	(7.5)	1	(25)
0.052	(1.4)	Flat & Horizontal	400	31	590	(15.0)	20.2	(9.2)	1	(25)
1/16	(1.6)	Flat & Horizontal	250	25	150	(3.8)	7.2	(3.3)	3/4	(19)
1/16	(1.6)	Flat & Horizontal	300	26	215	(5.5)	10.4	(4.7)	1	(25)
1/16	(1.6)	Flat & Horizontal	350	27	265	(6.7)	13.0	(5.9)	1	(25)
1/16	(1.6)	Flat & Horizontal	400	29	335	(8.5)	16.6	(7.5)	1	(25)
1/16	(1.6)	Flat & Horizontal	450	30	395	(10.0)	19.7	(8.9)	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.**
- **For out of position welding, short circuit or pulsed spray transfer mode must be used.**
- **Pulse waveforms are designed with nominal operating points that may result in average voltage and current values that differ from the above table. Generally, pulse processes can be expected to produce lower heat inputs than a standard CV process.**
- **See Above:** This information was determined by welding using 90% Argon (Ar)/10% Carbon Dioxide (CO_2) shielding gas with a flow rate between 35-50 cfh (17-24 l/min). For the higher CO_2 shielding gas mixtures within the recommended range, increase listed voltages by 1-3 volts. When welding using 95-99% Argon (Ar)/Balance Oxygen (O_2) shielding gases in accordance with the requirements of AWS A5.28/A5.28M, decrease listed voltages by 1-2 volts.

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. (15 kg) Spool	50-lb. (22.7 kg) Spool	1000-lb. (453.6 kg) XPak
Net Pallet Weight		**2376-lb. (1078 kg)**	**1600-lb. (726 kg)**	**2000-lb. (907 kg)**
0.045	(1.2)	S279512-029	S279512-027	S279512-058
0.052	(1.4)	S279515-029	—	S279515-058
1/16	(1.6)	S279519-029	—	—

CONFORMANCES AND APPROVALS:

- **AWS A5.28,** E80C-Ni1 H4
- **AWS A5.28M,** E55C-Ni1 H4
- **ASME SFA 5.28,** E80C-Ni1 H4
- **CWB,** 75-95% Ar/Balance CO_2, 95-99% Ar/Balance O_2, E55C-Ni1-H4 (E80C-Ni1-H4)
- **AWS D1.8/D1.8M,** 90% Ar/10% CO2 [0.052”(1.4 mm) diameter electrode]

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.

Because Hobart Brothers LLC is constantly improving products, Hobart reserves the right to change design and/or specifications without notice.

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HOBART FILLER METALS