

# FabCOR<sup>®</sup> Element<sup>™</sup> 80Ni1



AWS A5.28: E80C-Ni1 H4

**AWS WELDING POSITIONS:**



**FEATURES:**

- Extremely low manganese emissions
- Provides higher deposition rates than solid wires
- Formulated for improved silicon removal
- Balanced arc characteristics (smooth & penetrating)

**BENEFITS:**

- Assists with conformance to environmental regulations
- Allows increased travel speed and productivity
- Helps reduce clean-up time and improve productivity
- Helps maintain consistent weld appearance and quality

**APPLICATIONS:**

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

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

**SHIELDING GAS:** 95-99% Argon (Ar)/Balance Oxygen (O<sub>2</sub>); 75-95% Argon (Ar)/Balance Carbon Dioxide (CO<sub>2</sub>), 35-50 cfh (17-24 l/min)

**TYPE OF CURRENT:** Direct Current Electrode Positive (DCEP)

**STANDARD DIAMETERS:** 0.052" (1.4 mm)

**RE-DRYING:** Not recommended

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

**TYPICAL WELD METAL CHEMISTRY\* (Chem Pad):**

Weld Metal Analysis	95% Ar/5% O <sub>2</sub>	80% Ar/20% CO <sub>2</sub>	AWS Spec
Carbon (C)	0.05	0.05	0.12
<b>Manganese (Mn)</b>	<b>0.51</b>	<b>0.53</b>	<b>1.75</b>
Silicon (Si)	0.75	0.80	0.90
Phosphorus (P)	0.010	0.009	0.030
Sulphur (S)	0.011	0.012	0.030
Nickel (Ni)	1.01	1.00	0.80-1.10

**Note:** AWS specification single values are maximums.

**TYPICAL DIFFUSIBLE HYDROGEN:**

Hydrogen Equipment	95% Ar/5% O <sub>2</sub>	80% Ar/20% CO <sub>2</sub>	AWS Spec
(GAS CHROMATOGRAPHY)	3.4 ml/100g	2.9 ml/100g	4.0 ml/100g Maximum

**TYPICAL MECHANICAL PROPERTIES\* (As Welded):**

Mechanical Tests	95% Ar/5% O <sub>2</sub>	80% Ar/20% CO <sub>2</sub>	AWS Spec
Tensile Strength	84,000 psi (579 MPa)	83,000 psi (572 MPa)	80,000 psi (550 MPa) Minimum
Yield Strength	75,000 psi (517 MPa)	74,000 psi (503 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	95% Ar/5% O <sub>2</sub>	80% Ar/20% CO <sub>2</sub>	AWS Spec
Avg. at -50°F (-45°C)	41 ft•lbs (56 Joules)	44 ft•lbs (60 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 LLC expressly disclaims any liability incurred from any reliance thereon. Typical data are those obtained when welded and tested in accordance with the AWS A5.28 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.

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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)	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)	7.3	(3.3)	3/4	(19)
1/16	(1.6)	Flat & Horizontal	300	26	215	(5.5)	9.7	(4.7)	1	(25)
1/16	(1.6)	Flat & Horizontal	350	27	265	(6.7)	12.4	(5.9)	1	(25)
1/16	(1.6)	Flat & Horizontal	400	29	335	(8.5)	14.9	(7.5)	1	(25)
1/16	(1.6)	Flat & Horizontal	450	30	395	(10.0)	17.3	(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.**
- **See Above:** This information was determined by welding using 90% Argon (Ar)/10% Carbon Dioxide (CO<sub>2</sub>) shielding gas with a flow rate between 35-50 cfh (17-24 l/min). When welding using 95-99% Argon (Ar)/Balance Oxygen (O<sub>2</sub>) shielding gases in accordance with the requirements of AWS A5.28/A5.28M, decrease listed voltages by 1-2 volts. When welding using 75% Argon (Ar)/25% Carbon Dioxide (CO<sub>2</sub>) shielding gas, increase listed voltages by 1-3 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		33-lb. (15kg)	50-lb. (22.7kg)	750-lb. (340.2kg)
Inches	(mm)	Spool	Spool	X-Pak
0.045	(1.2)	—	—	—
0.052	(1.4)	—	S294915-027	S294915-075
1/16	(1.6)	—	—	—

## 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<sub>2</sub>, 95-99% Ar/Balance O<sub>2</sub>, E55C-Ni1-H4 (E80C-Ni1-H4)

**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](mailto: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](http://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](http://www.hobartbrothers.com).

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