FabCO® 811N1

AWS A5.29: E81T1-Ni1CJ H4, E81T1-Ni1MJ H4

WELDING POSITIONS:

FEATURES:

- Fast-freezing slag
- Nominal 1% Nickel deposit
- Excellent impact toughness
- Low-hydrogen deposit
- Low spatter and excellent slag removal

BENEFITS:

- Excellent out-of-position performance
- Suitable replacement to E8018-C3 stick (SMAW) electrodes
- Resists cracking in severe applications
- Assists in minimizing the risk of hydrogen-induced cracking
- Improves operator appeal, reduces clean-up time

APPLICATIONS:

- High-strength low-alloy steels
- Bridge Fabrication
- Weathering Steels (ASTM 588, A709, etc.)
- Heavy equipment fabrication
- Structural fabrication
- Shipbuilding

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

SHIELDING GAS: 100% Carbon Dioxide (CO_2), 75-80% Argon (Ar)/Balance Carbon Dioxide (CO_2), 35-50 cfh (17-24 l/min)

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

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	75% Ar/25% CO_2	AWS Spec
Carbon (C)	0.03	0.06	0.12
Manganese (Mn)	1.09	1.39	1.75
Silicon (Si)	0.32	0.53	0.80
Phosphorus (P)	0.007	0.009	0.030
Sulphur (S)	0.005	0.008	0.030
Nickel (Ni)	1.01	1.00	0.80 – 1.10
Boron (B)	0.004	0.006	*

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

TYPICAL MECHANICAL PROPERTIES* (As Welded):

Mechanical Tests	100% CO_2	75% Ar/25% CO_2	AWS Spec
Tensile Strength	83,000 psi (572 MPa)	93,000 psi (641 MPa)	80,000-100,000 psi (550-690 MPa)
Yield Strength	73,000 psi (503 MPa)	85,000 psi (586 MPa)	68,000 psi (470 MPa) Min.
Elongation % in 2” (50 mm)	26%	25%	19% Min.

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

CVN Temperatures	100% CO_2	75% Ar/25% CO_2	AWS Spec
Avg. at -40°F (-40°C)	65 ft•lbs (88 Joules)	40 ft•lbs (54 Joules)	20 ft •lbs (27 Joules) Min.

TYPICAL DIFFUSIBLE HYDROGEN*:

Hydrogen Equipment	100% CO_2	75% Ar/25% CO_2	AWS Spec
Gas Chromatography	2.4 ml/100g	3.0 ml/100g	4.0 ml/100g Max.

*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.

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Diameter Inches	(mm)	Welding Position	Amperage	Voltage	Wire Feed Speed in/min	(m/min)	Deposition Rate lbs/hr	(kg/hr)	Contact Tip to Work Distance Inches	(mm)
0.045	(1.2)	All Position	100	17	120	(3.8)	1.6	(0.7)	5/8	(16)
0.045	(1.2)	All Position	125	24	200	(5.1)	2.0	(0.9)	5/8	(16)
0.045	(1.2)	All Position	200	26	390	(9.9)	7.0	(3.2)	5/8	(16)
0.045	(1.2)	All Position	225	27	455	(11.6)	8.8	(4.0)	3/4	(19)
0.045	(1.2)	Flat & Horizontal	250	28	530	(13.5)	10.0	(4.5)	3/4	(19)
1/16	(1.6)	All Position	150	24	120	(3.0)	4.0	(1.8)	3/4	(19)
1/16	(1.6)	All Position	200	25	155	(3.9)	5.7	(2.6)	3/4	(19)
1/16	(1.6)	All Position	250	26	220	(5.6)	7.6	(3.4)	1	(25)
1/16	(1.6)	Flat & Horizontal	300	27	280	(7.1)	10.2	(4.6)	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.

See Above: The above information was determined by welding using 100% CO_2 shielding gas with a flow rate between 35-50 cfh (17-24 l/min). When welding using 75% Argon (Ar)/25% Carbon Dioxide (CO_2) shielding gas, decrease voltage by 1-2 volts.

All positions Include: Flat, Horizontal, Vertical Up, and Overhead

AVAILABLE 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	50-lb. (22.6kg) Spool	60-lb. (27.2kg) Coil
Net Pallet Weight		**2376-lb (1078kg)**	**1600-lb (726kg)**	**1920-lb (871kg)**
0.045	(1.2)	S283612-029	—	—
1/16	(1.6)	S283619-029	S283619-027	S283619-002

CONFORMANCES AND APPROVALS:

- **AWS A5.29,** E81T1-Ni1CJ H4, E81T1-Ni1MJ H4
- **AWS A5.29M,** E551T1-Ni1CJ H4, E551T1-Ni1MJ H4
- **ABS** 100% CO2, 3YSA
- **CWB,** 100% CO2, E551T1-Ni1C-JH4, (E81T1-Ni1C-JH4)
- **CWB,** 75-80% Ar/Balance CO2, E551T1-Ni1M-JH4, (E81T1-Ni1M-JH4)
- **AWS D1.8,** 100% CO2 & 75% Ar/25% CO2 (1/16" 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

Material 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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HOBART FILLER METALS