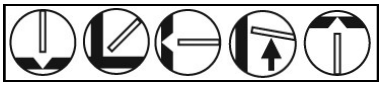
MEGAFIL® 821R

AWS A5.29: E81T1-Ni1MJ H4
EN 17632-A: T 50 6 1Ni P M 1 H5

WELDING POSITIONS:



FEATURES:

- Unique seamless wire manufacturing process
- Seamless wire prevents moisture pick-up and provides a low-hydrogen deposit
- Fast-freezing slag
- Excellent arc stability
- Good low-temperature impact toughness
- Cracked-Tip Opening Displacement (CTOD) tested; data available upon request

BENEFITS:

- Provides very consistent chemical and mechanical properties
- Minimizes risk of hydrogen cracking, even after considerable atmospheric exposure
- Suitable for all-position welding with a flat bead contour
- Helps produce welds of consistent appearance and quality
- Minimizes risk of cracking in many critical applications
- Weld deposit is able to absorb energy and resist crack formation and propagation

APPLICATIONS:

- Single or multi-pass welding
- Heavy equipment
- Storage vessels
- Structural fabrication
- Offshore
- HSLA steels
- Pipeline
- General fabrication
- Weathering steels

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

SHIELDING GAS: 75-85% 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)

RE-DRYING: Not recommended

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

TYPICAL WELD METAL PROPERTIES* (Chem Pad):

Weld Metal Analysis (%)	80% Ar/20% CO_2	AWS Spec
Carbon (C)	0.03	0.12
Manganese (Mn)	1.16	1.50
Silicon (Si)	0.53	0.80
Phosphorus (P)	0.011	0.030
Sulphur (S)	0.012	0.030
Nickel (Ni)	0.96	0.80-1.10
Vanadium (V)	0.003	0.05

Note: AWS specification single values are maximums.

TYPICAL DIFFUSIBLE HYDROGEN*:

Hydrogen Equipment	80% Ar/20% CO_2	AWS Spec
(GAS CHROMATOGRAPHY)	2.2 ml/100 g	4.0 ml/100 g Maximum

TYPICAL MECHANICAL PROPERTIES*:

Mechanical Tests	As Welded		PWHT 4 Hr. @ 1150°F (651°C)	
	80% Ar/20% CO_2	AWS Spec	80% Ar/20% CO_2	AWS Spec
Tensile Strength	81,000 psi (558 MPa)	80,000-100,000 psi (550-690 MPa)	85,000 psi (586 MPa)	Not specified
Yield Strength	73,000 psi (503 MPa)	68,000 psi (470 MPa) Minimum	76,000 psi (524 MPa)	Not specified
Elongation % in 2” (50 mm)	26%	19% Minimum	26%	Not specified

TYPICAL CHARPY V-NOTCH IMPACT VALUES*:

CVN Temperatures	As Welded		PWHT 4 Hr. @ 1150°F (621°C)	
	80% Ar/20% CO_2	AWS Spec	80% Ar/20% CO_2	AWS Spec
Avg. at -40°F (-40°C)	60 ft•lbs (133 Joules)	20 ft•lbs (27 Joules) Minimum	75 ft•lbs (82 Joules)	Not specified
Avg. at -60°F (-50°C)	50 ft•lbs (95 Joules)	Not specified	60 ft•lbs (67 Joules)	Not specified

*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	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	150	22.5	175	(4.4)	3.8	(1.7)	5/8	(16)
0.045	(1.2)	All Position	175	23.5	226	(5.7)	5.0	(2.2)	5/8	(16)
0.045	(1.2)	All Position	200	24.0	278	(7.1)	6.1	(2.8)	3/4	(19)
0.045	(1.2)	All Position	225	24.5	327	(8.3)	7.2	(3.3)	3/4	(19)
0.045	(1.2)	Flat & Horizontal	250	26	379	(9.6)	8.4	(3.8)	3/4	(19)
0.045	(1.2)	Flat & Horizontal	300	27	480	(12.2)	10.6	(4.8)	3/4	(19)
1/16	(1.6)	All Position	200	23.5	120	(3.0)	4.7	(2.1)	3/4	(19)
1/16	(1.6)	All Position	225	24.0	141	(3.6)	5.5	(2.5)	1	(25)
1/16	(1.6)	All Position	250	24.5	172	(4.4)	6.7	(3.1)	1	(25)
1/16	(1.6)	All Position	275	25.0	204	(5.2)	8.0	(3.6)	1	(25)
1/16	(1.6)	Flat & Horizontal	300	25.5	235	(6.0)	9.2	(4.2)	1	(25)
1/16	(1.6)	Flat & Horizontal	350	26.5	298	(7.6)	11.7	(5.3)	1	(25)
1/16	(1.6)	Flat & Horizontal	400	27	361	(9.2)	14.2	(6.4)	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 information was determined by welding using 80% Ar/20% CO_2 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)	35-lb. (15.9kg) Spool
0.045	(1.2)	82115B

CONFORMANCES AND APPROVALS:
- **AWS A5.29,** E81T1-Ni1MJ H4
- **AWS A5.29M,** E551T1-Ni1MJ H4
- **ASME SFA 5.29,** E81T1-Ni1MJ H4
- **CWB,** 75-80% Ar/Balance CO_2, E55T1-Ni1M-JH4
- **DNV-GL,** M21, V Y46 MSH5
- **EN 17632-A:** T 50 6 1Ni P M 1 H5
- **Lloyd's Register,** 82% Ar/18% CO2, 5Y46S H5

TECHNICAL QUESTIONS? For technical support of **Hobart MEGAFIL products, visit** www.HobartBrothers.com/MEGAFIL OR 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 Company product may be obtained from Hobart Customer Service or at www.hobartbrothers.com.

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

Revision Date: 170504 (Replaces 160725)