

MEGAFIL[®] 710 M



AWS A5.18: E70C-6M H4
EN 17632-A: T 46 6 M M 1 H5

WELDING POSITIONS:



FEATURES:

- Unique seamless wire manufacturing process
- Seamless wire provides low moisture pick-up and a very low hydrogen weld deposit
- Excellent low-temperature impact toughness
- Excellent wetting and gap-bridging capabilities
- Metal-cored wire provides higher deposition rates than solid wires

BENEFITS:

- Provides very consistent chemical and mechanical properties
- Minimizes risk of hydrogen cracking, even after considerable atmospheric exposure of the electrode
- Minimizes risk of cracking in many critical applications
- Suitable for use in automated and mechanized applications as well as root-pass welding without joint backing
- Allows increased travel speeds and productivity

APPLICATIONS:

- Non-alloyed and fine grain steels
- Offshore
- Heavy equipment
- Single or multi-pass welds
- Pipeline
- Structural fabrication
- Automated and mechanized welding
- Pressure vessels
- Industrial machinery

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

SHIELDING GAS: 75-95% Argon (Ar)/Balance Carbon Dioxide (CO₂), 35-50 cfh (17-24 l/min)

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)

STANDARD DIAMETERS: 0.045" (1.2 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	90% Ar/10% CO ₂	92% Ar/8% CO ₂	AWS Spec
Carbon (C)	0.04	0.04	0.05	0.12
Manganese (Mn)	1.28	1.32	1.36	1.75
Silicon (Si)	0.66	0.71	0.87	0.90
Phosphorus (P)	0.006	0.007	0.009	0.030
Sulphur (S)	0.010	0.009	0.010	0.030
Copper (Cu)	0.11	0.11	0.14	0.50

Note: AWS specification single values are maximums.

TYPICAL DIFFUSIBLE HYDROGEN*:

Hydrogen Equipment	80% Ar/20% CO ₂	AWS Spec
(GAS CHROMATOGRAPHY)	3.0 ml/100 g	4.0 ml/100 g Maximum

TYPICAL MECHANICAL PROPERTIES* (As Welded):

Mechanical Tests	75% Ar/25% CO ₂	90% Ar/10% CO ₂ †	92% Ar/8% CO ₂	AWS Spec
Tensile Strength	80,800 psi (557 MPa)	79,100 psi (586 MPa)	82,000 psi (565 MPa)	70,000 psi (480 MPa) Minimum
Yield Strength	70,100 psi (483 MPa)	71,200 psi (586 MPa)	69,900 psi (482 MPa)	58,000 psi (400 MPa) Minimum
Elongation % in 2" (50 mm)	30%	29%	29%	22% Minimum

†NOTE: Aged 48 Hrs. @ 210°F (99°C)

TYPICAL MECHANICAL PROPERTIES* [PWHT 2 Hrs. @1150°F (621°C)]:

Mechanical Tests	75% Ar/25% CO ₂	90% Ar/10% CO ₂	92% Ar/8% CO ₂	AWS Spec
Tensile Strength	75,200 psi (518 MPa)	77,500 psi (534 MPa)	74,000 psi (510 MPa)	Not specified
Yield Strength	60,800 psi (419 MPa)	63,500 psi (438 MPa)	57,700 psi (398 MPa)	Not specified
Elongation % in 2" (50 mm)	31%	31.5%	32%	Not specified

*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 A5.18 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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TYPICAL CHARPY V-NOTCH IMPACT VALUES* (As Welded):

CVN Temperatures	75% Ar/25% CO ₂	90% Ar/10% CO ₂	92% Ar/8% CO ₂	AWS Spec
Avg. at -20°F (-30°C)	105 ft•lbs (142 Joules)	—	100 ft•lbs (136 Joules)	20 ft•lbs (27 Joules) Minimum
Avg. at -50°F (-45°C)	90 ft•lbs (122 Joules)	112 ft•lbs (152 Joules)	—	Not specified
Avg. at -60°F (-50°C)	25 ft•lbs (34 Joules)	—	75 ft•lbs (102 Joules)	Not specified

TYPICAL CHARPY V-NOTCH IMPACT VALUES* [PWHT 2 Hrs. @1150°F (621°C)]:

CVN Temperatures	75% Ar/25% CO ₂	90% Ar/10% CO ₂	92% Ar/8% CO ₂	AWS Spec
Avg. at -50°F (-45°C)	90 ft•lbs (122 Joules)	182 ft•lbs (247 Joules)	—	Not specified
Avg. at -60°F (-50°C)	25 ft•lbs (34 Joules)	143 ft•lbs (194 Joules)	75 ft•lbs (102 Joules)	Not specified

Diameter Inches (mm)	Weld Position	Amps	Volts	Wire-Feed Speed		Deposition Rate		Contact Tip to Work Distance	
				in/min	(m/min)	lbs/hr	(kg/hr)	Inches	(mm)
0.045 (1.2)	Flat & Horizontal	200	25	225	(5.7)	5.9	(2.7)	5/8	(16)
0.045 (1.2)	Flat & Horizontal	250	26	315	(8.0)	7.9	(3.6)	5/8	(16)
0.045 (1.2)	Flat & Horizontal	300	27	440	(11.2)	11.7	(5.3)	3/4	(19)
0.045 (1.2)	Flat & Horizontal	350	28	600	(15.2)	16.2	(7.3)	3/4	(19)
1/16 (1.6)	Flat & Horizontal	250	28	160	(4.1)	7.0	(3.2)	1	(25)
1/16 (1.6)	Flat & Horizontal	300	31	205	(5.2)	9.5	(4.3)	1	(25)
1/16 (1.6)	Flat & Horizontal	350	32	255	(6.5)	11.8	(5.4)	1	(25)
1/16 (1.6)	Flat & Horizontal	400	34	320	(8.1)	15.5	(7.0)	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 80% Ar/20% CO₂ shielding gas with a flow rate between 35-50 cfh (17-24 l/min). For the lower CO₂ shielding gas mixtures within the recommended range, reduce 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 Inches (mm)	35-lb. (15.9kg) Spool	550-lb. (250kg) Drum	660-lb. (299kg) Drum
Net Pallet Weight	2240-lb. (1016kg)	1100-lb. (499kg)	1320-lb. (599kg)
0.045 (1.2)	71015B	—	71016B
1/16 (1.6)	71033B	71034B	—

CONFORMANCES AND APPROVALS:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- ABS, 82% Ar/18% CO₂, 3Y400SA H5/3YQ460SA H5 1.2m only
- CWB, 85% Ar/15% CO₂, E491T15-M20A5-CS1-H4 (E491C-6M-H4)
- CWB, 80% Ar/20% CO₂, E491T15-M21A5-CS1-H4 (E491C-6M-H4)
- DNV-GL, 75-80% Ar/Balance CO₂, V Y46MS(H5), 100% CO₂, III Y40MS(H5)
- EN 17632-A: T 46 6 M M 1 H5
- Lloyd's Register, 82% Ar/18% CO₂, 5Y46S H5; 100% CO₂, 3Y40S 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 LLC product may be obtained from Hobart Customer Service or at www.hobartbrothers.com.

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