

FabCOR[®] 71



AWS A5.18: E70C-6M H4

WELDING POSITIONS:



FEATURES:

- Metal-cored wire provides higher deposition rate than solid wires
- Excellent wetting and gap bridging capabilities
- Weld deposit contains less than 1% nickel; typical as-welded weld metal hardness is less than 248HV10
- Excellent weld metal toughness and ductility
- Maintains good mechanical properties following post-weld stress-relief up to three hours
- Can be used out-of-position with proper welding procedures and pulsed-spray or short-circuit transfers

BENEFITS:

- Helps to increase travel speed and improve productivity
- Exhibits good tolerance to less-than-ideal joint fit-up, helps to produce high quality root pass welds in piping applications
- Meets NACE requirements demanded in many oil & gas applications where stress-corrosion cracking is a concern
- Minimizes risk of cracking in critical applications
- Suitable for joining materials and thick sections where stress-relief is beneficial or required
- Provides versatility: one wire can be used for many joints and positions, including root, fill, and cap passes on pipe

APPLICATIONS:

- Single or multi-pass welds
- Oil and gas industries
- Pipe root, fill, and cap-pass welding
- Non-alloyed and fine grain steels
- Automated and mechanized welding
- Storage and pressure vessels
- Sour gas transmission and distribution pipe

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

SHIELDING GAS: 75-90% 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)

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 (%)	80% Ar/20% CO ₂	AWS Spec
Carbon (C)	0.03	0.12
Manganese (Mn)	1.50	1.75
Silicon (Si)	0.30	0.90
Phosphorus (P)	0.008	0.030
Sulphur (S)	0.008	0.030
Nickel (Ni)	0.35	0.50†
Chromium (Cr)	0.03	0.20†
Molybdenum (Mo)	0.005	0.30†
Vanadium (V)	0.005	0.08†

Note: AWS specification single values are maximums.

†The sum of Ni, Cr, Mo, and V shall not exceed 0.50%

TYPICAL DIFFUSIBLE HYDROGEN*:

Hydrogen Equipment	80% Ar/20% CO ₂	AWS Spec
(GAS CHROMATOGRAPHY)	3.3 ml/100g	4.0 ml/100g Maximum

TYPICAL MECHANICAL PROPERTIES* (As Welded):

Mechanical Tests	80% Ar/20% CO ₂	AWS Spec
Tensile Strength	80,000 psi (552 MPa)	70,000 psi (480 MPa) Minimum
Yield Strength	71,000 psi (490 MPa)	58,000 psi (400 MPa) Minimum
Elongation % in 2" (50 mm)	28%	22% Minimum

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

CVN Temperatures	80% Ar/20% CO ₂	AWS Spec
Avg. at -20°F (-30°C)	85 ft•lbs (115 Joules)	20 ft•lbs. (27 Joules) Minimum
Avg. at -51°F (-46°C)	58 ft •lbs (77 Joules)	Not required

*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 A5.18 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 Company.

FabCOR[®] 71

TYPICAL MECHANICAL PROPERTIES* [PWHT @ 1150°F (620°C)]:

Mechanical Tests	80% Ar/20% CO ₂		AWS Spec
	PWHT 1 Hr.	PWHT 3 Hrs.	
Tensile Strength	75,000 psi (517 MPa)	74,000 psi (510 MPa)	Not required
Yield Strength	64,000 psi (441 MPa)	62,000 psi (427 MPa)	Not required
Elongation % in 2" (50 mm)	30%	31%	Not required

TYPICAL CHARPY V-NOTCH IMPACT VALUES* [PWHT @ 1150°F (620°C)]:

CVN Temperatures	80% Ar/20% CO ₂		AWS Spec
	PWHT 1 Hr.	PWHT 3 Hrs.	
Avg. at -51°F (-46°C)	58 ft•lbs (79 Joules)	56 ft•lbs. (76 Joules)	Not required

TYPICAL OPERATING PARAMETERS:

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	26	275	(7.0)	7.0	(3.2)	5/8	(16)
0.045 (1.2)	Flat & Horizontal	250	29	375	(9.5)	9.5	(4.3)	5/8	(16)
0.045 (1.2)	Flat & Horizontal	300	32	455	(11.6)	12.1	(5.5)	3/4	(19)
0.045 (1.2)	Flat & Horizontal	350	35	580	(14.7)	15.9	(7.2)	3/4	(19)

- **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 80% Argon (Ar)/20% Carbon Dioxide (CO₂) shielding gas with a flow rate between 35-50 cfh (17-24 l/min). When welding using 90% Argon (Ar)/10% Carbon Dioxide (CO₂) shielding gas, reduce voltage by approximately 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. (15kg) Vacuum-Packed Spool
0.045 (1.2)	S280912-053

CONFORMANCES AND APPROVALS:

- **AWS A5.18**, E70C-6M H4
- **AWS A5.18M**, E48C-6M H4
- **ASME SFA 5.18**, E70C-6M 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

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 36 St, # 130, Doral, FL 33166-6672 (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 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.

Hobart and FabCOR are registered trademarks of Hobart Brothers Company, Troy, Ohio.

Revision Date: 141201 (Replaces 140717)

