

# FabCOR<sup>®</sup> Hercules<sup>™</sup>



AWS A5.18: E70C-6M H4

WELDING POSITIONS:



## FEATURES:

- The only manufacturer-recommended wire for welding using the Hercules<sup>™</sup> system.
- Wire manufacturing process optimized for welding using the Hercules<sup>™</sup> system.
- Proprietary formula specifically addresses the disadvantages of welding using high wire feed speeds with conventional wires.
- Designed to offer robust mechanical properties and good low-temperature toughness when welding at higher amperages and wire feed speeds.

## BENEFITS

- Ensures as-designed performance and productivity when using the Hercules system
- Provides consistent feedability at very high wire feed speeds on automated equipment
- Maintains good bead appearance and contour, even when welding at high speeds.
- Suitable for use in critical applications where weld integrity and performance is a key consideration

## APPLICATIONS:

- Heavy equipment fabrication
- Single and multi-pass welding
- Agricultural equipment fabrication
- Automated welding
- Truck and trailer fabrication
- Use with the Hercules system

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

**SHIELDING GAS:** 75-95% Argon (Ar)/Balance Carbon Dioxide (CO<sub>2</sub>), 40-50 cfh (19-24 l/min)

**Note:** FabCOR Hercules<sup>™</sup> has been optimized for use with 90% Ar/10% CO<sub>2</sub> shielding gas. 75% Ar/25% CO<sub>2</sub> is typically used for classification purposes only.

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

**STANDARD DIAMETERS:** 0.052" (1.4 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 CHEMICAL COMPOSITION\* (Chem Pad):

Weld Metal Analysis (%)	75% Ar/25% CO <sub>2</sub>	90% Ar/10% CO <sub>2</sub>	AWS Spec.
Carbon (C)	0.03	0.04	0.12
Manganese (Mn)	1.55	1.68	1.75
Silicon (Si)	0.55	0.67	0.90
Phosphorus (P)	0.009	0.010	0.030
Sulphur (S)	0.020	0.020	0.030
Nickel (Ni)	0.37	0.36	0.50
Boron (B)	0.0011	0.0009	Not Specified

**Note:** AWS Specification single values are maximums

## TYPICAL WELD METAL DIFFUSIBLE HYDROGEN\*:

Hydrogen Equipment	75% Ar/25% CO <sub>2</sub>	90% Ar/10% CO <sub>2</sub>	AWS Spec.
(GAS CHROMATOGRAPHY)	3.1 ml/100 g	3.8 ml/100 g	4.0 ml/100 g Maximum

\*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 LLC.

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

Mechanical Tests	75% Ar/25% CO <sub>2</sub>	90% Ar/10% CO <sub>2</sub>	AWS Spec.
Tensile Strength	84,000 psi (579 MPa)	83,000 psi (572 MPa)	70,000 psi (480 MPa) Min.
Yield Strength	73,000 psi (503 MPa)	72,000 psi (496 MPa)	58,000 psi (400 MPa) Min.
Elongation % in 2" (50 mm)	25%	26%	22% Minimum

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

CVN Temperatures	75% Ar/25% CO <sub>2</sub>	90% Ar/10% CO <sub>2</sub>	AWS Spec.
Avg. @ -20°F (-30°C)	34 ft-lbs (46 Joules)	55 ft-lbs (75 Joules)	20 ft-lbs (27 Joules) Min.
Avg. @ -40F (-40°C)	32 ft-lbs (43 Joules)	41 ft-lbs (56 Joules)	Not Specified

## 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)
0.052 (1.4)	Flat & Horizontal	225	25	300	(7.6)	10.3	(4.7)	3/4	(19)
0.052 (1.4)	Flat & Horizontal	340	26	500	(12.7)	17.0	(7.7)	3/4	(19)
0.052 (1.4)	Flat & Horizontal	365	28	600	(15.2)	20.4	(9.2)	3/4	(19)
0.052 (1.4)	Flat & Horizontal	400	30	700	(17.8)	23.8	(10.8)	3/4	(19)
0.052 (1.4)	Flat & Horizontal	420	32	800	(20.3)	27.2	(12.3)	3/4	(19)
0.052 (1.4)	Flat & Horizontal	430	34	900	(22.9)	30.5	(13.9)	3/4	(19)
1/16 (1.6)	Flat & Horizontal	340	29	450	(11.5)	21.7	(9.8)	7/8	(22)
1/16 (1.6)	Flat & Horizontal	360	30	500	(12.7)	24.1	(10.9)	7/8	(22)
1/16 (1.6)	Flat & Horizontal	385	32	550	(14.0)	26.5	(12.0)	7/8	(22)
1/16 (1.6)	Flat & Horizontal	425	34	600	(15.2)	28.6	(13.0)	7/8	(22)

- Maintaining a proper welding procedure - including pre-heat and interpass temperatures - may be critical depending on the type and thickness of the steel being welded.
- See Above: This information was determined by welding using the Hercules<sup>™</sup> system with 90% Ar/10% CO<sub>2</sub> shielding gas and a flow rate between 40-50 cfh (17-24 l/min).

**AVAILABLE DIAMETERS AND PACKAGES:** For a complete list of diameters and packaging, please contact Hobart Brothers at (800) 424-1543 or (937) 332-5188

Diameter Inches (mm)	1000-lb. (453.6 kg) Recyclable X-Pak
0.052 (1.4)	S279715-058
1/16 (1.6)	S279719-058

## CONFORMANCES AND APPROVALS

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E49C-6M H4
- ASME SFA 5.18, E70C-6M H4
- CWB, M20 (Ar +8%CO<sub>2</sub>), E491T15-M20A4-CS1-H4 (E491C-6MJ-H4)
- CWB, M21 (Ar +20% to 25%CO<sub>2</sub>), E491T15-M21A4-CS1-H4 (E491C-6MJ-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, Miami, FL 33166-6672 (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).

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

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