

# FabCO® 71 HYD



MIL-24403/1: MIL-71T-1-HYD

**WELDING POSITIONS:**



## FEATURES:

- Fast freezing slag
- Low diffusible hydrogen
- Low moisture pickup
- Excellent CVN impact toughness

## BENEFITS:

- Suitable for all position welding
- Helps minimize risk of hydrogen-induced cracking, can lower preheat requirements in certain applications
- Maintains low diffusible hydrogen following atmospheric exposure
- Resists cracking in severe applications

## APPLICATIONS:

- Non-alloyed and fine grain steels
- Military shipbuilding
- HSLA-65
- Single or multi-pass welding

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

**SHIELDING GAS:** 100% Carbon Dioxide (CO<sub>2</sub>), 35-50 cfh (17-24 l/min)

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

**STANDARD DIAMETERS:** 0.045" (1.2 mm), 0.052" (1.4 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 (%)	100% CO <sub>2</sub>	MIL Spec
Carbon (C)	0.02	0.12
Manganese (Mn)	1.42	0.50-1.75
Silicon (Si)	0.35	0.90
Phosphorus (P)	0.005	0.030
Sulphur (S)	0.005	0.030
Nickel (Ni)	0.35	0.50
Chromium (Cr)	0.03	0.20
Molybdenum (Mo)	0.003	0.30
Vanadium (V)	0.003	0.050
Copper (Cu)	0.02	0.20

**Note:** AWS specification single values are maximums.

## TYPICAL DIFFUSIBLE HYDROGEN\*:

Hydrogen Equipment	100% CO <sub>2</sub>	MIL Spec
(GAS CHROMATORAPHY)	3.3 ml/100 g	8.0 ml/100 g Maximum

\*product may be controlled to maximum of H5 at customer request

## TYPICAL MECHANICAL PROPERTIES\*: Low heat (30 kJ/in)

Mechanical Tests	As Welded		PWHT 2 Hrs @ 1150°F (621°C)	
	100% CO <sub>2</sub>	MIL Spec	100% CO <sub>2</sub>	MIL Spec
Tensile Strength	77,700 psi (536 MPa)	—	71,100 psi (490 MPa)	—
Yield Strength	70,400 psi (485 MPa)	60,000 - 90,000 psi (410-620 MPa)	62,100 psi (428 MPa)	60,000 psi (410 MPa) Minimum
Elongation % in 2" (50 mm)	29%	22% Minimum	30%	22% Minimum

## TYPICAL MECHANICAL PROPERTIES\*: High heat (75 kJ/in)

Mechanical Tests	As Welded		PWHT 2 Hrs @ 1150°F (621°C)	
	100% CO <sub>2</sub>	MIL Spec	100% CO <sub>2</sub>	MIL Spec
Tensile Strength	70,400 psi (485 MPa)	—	73,900 psi (510 MPa)	—
Yield Strength	62,000 psi (427 MPa)	60,000 - 90,000 psi (410-620 MPa)	62,050 psi (428 MPa)	60,000 psi (410 MPa) Minimum
Elongation % in 2" (50 mm)	33%	22% Minimum	32%	22% Minimum

\*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 MIL-24403/1 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.

# FabCO<sup>®</sup> 71 HYD

## TYPICAL CHARPY V-NOTCH IMPACT VALUES\*: Low heat (30 kJ/in)

CVN Temperatures	As Welded		PWHT 2 Hrs @ 1150°F (621°C)	
	100% CO <sub>2</sub>	MIL Spec	100% CO <sub>2</sub>	MIL Spec
Avg. at -20°F (-30°C)	252 ft•lbs (342 Joules)	30 ft•lbs (41 Joules) Minimum	268 ft•lbs (363 Joules)	30 ft•lbs (41 Joules) Minimum
Avg. at -40°F (-40°C)	138 ft•lbs (187 Joules)	—	294 ft•lbs (399 Joules)	—

## TYPICAL CHARPY V-NOTCH IMPACT VALUES\*: High heat (75 kJ/in)

CVN Temperatures	As Welded		PWHT 2 Hrs @ 1150°F (621°C)	
	100% CO <sub>2</sub>	MIL Spec	100% CO <sub>2</sub>	MIL Spec
Avg. at -20°F (-30°C)	159 ft•lbs (216 Joules)	30 ft•lbs (41 Joules) Minimum	279 ft•lbs (378 Joules)	30 ft•lbs (41 Joules) Minimum
Avg. at -40°F (-40°C)	138 ft•lbs (187 Joules)	—	218 ft•lbs (296 Joules)	—

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	21-26	215 (5.5)	3.96 (1.8)	3/4 (19)
0.045 (1.2)	All Position	200	21-26	330 (8.4)	6.05 (2.7)	1 (25)
0.045 (1.2)	All Position	220	22-27	370 (9.4)	6.69 (3.0)	1 (25)
0.045 (1.2)	Flat & Horizontal	240	23-28	410 (10.4)	7.52 (3.4)	1 (25)
0.052 (1.4)	All Position	170	24	175 (4.4)	4.8 (2.2)	3/4 (19)
0.052 (1.4)	Flat & Horizontal	250	28	310 (7.9)	8.1 (3.7)	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**
- **See Above:** The above information was determined by welding using 100% Carbon Dioxide (CO<sub>2</sub>) 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)	15-lb. (6.8kg) Vacuum-Packaged Spool	33-lb. (15kg) Vacuum-Packaged Spool	250-lb. (113.4kg) X-PK
0.045 (1.2)	S284912-025	S284912-053	—
0.052 (1.4)	S284915-025	S284915-053	S284915-061

## CONFORMANCES AND APPROVALS:

- **MIL-24403/1:** MIL-71T-1-HYD

**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](mailto: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](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).

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