

FabCO[®] 71 HYN



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

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: 75-80% 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), 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 (%)	75% Ar/25% CO ₂	MIL Spec
Carbon (C)	0.06	0.12
Manganese (Mn)	1.53	0.50-1.75
Silicon (Si)	0.35	0.90
Phosphorus (P)	0.008	0.030
Sulphur (S)	0.008	0.030
Nickel (Ni)	0.41	0.50
Chromium (Cr)	0.03	0.20
Molybdenum (Mo)	0.005	0.30
Vanadium (V)	0.017	0.050
Copper (Cu)	0.03	0.20

Note: AWS specification single values are maximums.

TYPICAL DIFFUSIBLE HYDROGEN*:

Hydrogen Equipment	75% Ar/25% CO ₂	MIL Spec
(GAS CHROMATOGRAPHY)	3.9 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)	
	75% Ar/25% CO ₂	MIL Spec	75% Ar/25% CO ₂	MIL Spec
Tensile Strength	92,000 psi (636 MPa)	—	88,800 psi (612 MPa)	—
Yield Strength	86,000 psi (593 MPa)	60,000 - 90,000 psi (410-620 MPa) Minimum	79,900 psi (551 MPa)	60,000 psi (410 MPa) Minimum
Elongation % in 2" (50 mm)	25%	22% Minimum	26%	22% Minimum

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

Mechanical Tests	As Welded		PWHT 2 Hrs @ 1150°F (621°C)	
	75% Ar/25% CO ₂	MIL Spec	75% Ar/25% CO ₂	MIL Spec
Tensile Strength	85,700 psi (591 MPa)	—	85,000 psi (586 MPa)	—
Yield Strength	76,300 psi (526 MPa)	60,000 - 90,000 psi (410-620 MPa) Minimum	74,800 psi (516 MPa)	60,000 psi (410 MPa) Minimum
Elongation % in 2" (50 mm)	28%	22% Minimum	28%	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® 71 HYN

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

CVN Temperatures	As Welded		PWHT 2 Hrs @ 1150°F (621°C)	
	75% Ar/25% CO ₂	MIL Spec	75% Ar/25% CO ₂	MIL Spec
Avg. at -20°F (-30°C)	119 ft•lbs (161 Joules)	30 ft•lbs (41 Joules) Minimum	102 ft•lbs (138 Joules)	30 ft•lbs (41 Joules) Minimum

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

CVN Temperatures	As Welded		PWHT 2 Hrs @ 1150°F (621°C)	
	75% Ar/25% CO ₂	MIL Spec	75% Ar/25% CO ₂	MIL Spec
Avg. at -20°F (-30°C)	113 ft•lbs (153 Joules)	30 ft•lbs (41 Joules) Minimum	92 ft•lbs (125 Joules)	30 ft•lbs (41 Joules) Minimum

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	170	20-25	230 (5.8)	4.8 (2.2)	3/4 (19)
0.045 (1.2)	All Position	200	20-25	340 (8.6)	7.1 (3.2)	1 (25)
0.045 (1.2)	All Position	220	22-27	430 (10.9)	9.0 (4.1)	1 (25)
0.045 (1.2)	Flat & Horizontal	250	23-28	550 (14.0)	11.5 (5.2)	1 (25)
0.052 (1.4)	All Position	175	19-24	190 (4.8)	5.1 (2.3)	3/4 (19)
0.052 (1.4)	All Position	230	22-27	300 (7.6)	8.1 (3.7)	1 (25)
0.052 (1.4)	Flat & Horizontal	250	23-28	330 (8.4)	9.0 (4.1)	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:** This information was determined by welding using 75% Argon (Ar)/25% Carbon Dioxide (CO₂) shielding gas with a flow rate between 35-50 cfh (17-24 l/min).
- **All positions include:** Flat, Horizontal, Vertical Up, and Overhead.

AVAILABLE 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-Packed Spool
0.045 (1.2)	S288612-025
0.052 (1.4)	S288615-025

CONFORMANCES AND APPROVALS:

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

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 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.

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

Hobart and FabCO are registered trademarks of Hobart Brothers LLC, Troy, Ohio.

Revision Date: 201102 (200713)

