METALSHIELD® HDT™

Mild Steel, Flat & Horizontal · AWS E70C-GM-H4

KEY FEATURES

- High deposition metal core wire used in conjunction with Lincoln Electric's licensed Process HDT™ high deposition waveform process solution
- Delivers single wire deposition rates up to 40 lbs/hour
- Designed specifically for high amperage applications to help increase productivity while maintaining stable arc conditions
- Consistent, uniform penetration with excellent toe wetting producing robust weld profiles
- Specially formulated to resist porosity and nitrogen pick up when applied as noted
- Excellent operation on mill scale
- H4 diffusible hydrogen level

WELDING POSITIONS

Flat & Horizontal

CONFORMANCES

AWS A5.18, ASME SFA-A5.18: E70C-GM-H4

TYPICAL APPLICATIONS

- Automated Welds on Heavy Components
- Mining & Construction Machinery
- Machine Bases & Frames
- Heavy Fabrication
- Structural Fabrication
- Robotics/Hard Automation

APPLICATION SCOPE

1F, 2F welds, max. leg size 3/4 in (19mm) in 3 passes
1G welds, max. groove thickness 1.0 in (25mm)
Maximum recommended weave width 3/4 in (19mm)

SHIELDING GAS

75-90% Argon / Balance CO_2
Flow rate: 75-85 CFH

DIAMETERS / PACKAGING

Diameter in (mm)	60 lb (27 kg) Fiber Spool	600 lb (272 kg) Accu-Trak® Drum
1/16 (1.6)	ED037490	ED037060

MECHANICAL PROPERTIES[1]

	Yield Strength[2] MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpoy V-Notch J (ft-lbf) @ -29°C (-20°F)
Requirements AWS A5.18: E70C-GM-H4	400 (58) min	480 (70) min.	22 min.	27 (20) min
Typical Results[3] As-Welded with 75% Ar / 25% CO_2	606 (88)	724 (105)	25	68 (50)

DEPOSIT COMPOSITION

	%C	%Mn	%Si	%S	%P	%Cu
Requirements AWS A5.18: E70C-GM-H4	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified
Typical Results[3] As-Welded with 75% Ar / 25% CO_2	0.07	2.4	1.1	0.01	0.01	0.05

	%Ni	%Cr	%Mo	%V	Diffusible Hydrogen (mL/100g weld deposit)
Requirements AWS A5.18: E70C-GM-H4	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified
Typical Results[3] As-Welded with 75% Ar / 25% CO_2	0.02	0.04	≤ 0.01	≤ 0.01	1-2

[1] Typical all weld metal. [2] Measured with 0.2% offset. [3] See test results disclaimer.

TYPICAL OPERATING PROCEDURES

Diameter, Polarity, Shielding Gas	CTWD in (mm)	Wire Feed Speed in/min (m/min)	Power	Approx. Voltage (Volts)	Approx. Current (Amps)	Melt-Off Rate lb/hr (kg/hr)	Deposition Rate lb/hr (kg/hr)	Efficiency (%)
1/16 in (1.6mm), DC+ 80% Ar / 20% CO_2	1 (25.4)	400 (10.2)	16	36	440	19.2 (8.7)	18.3 (8.3)	95
		500 (12.7)	19	37	510	23.8 (10.8)	22.9 (10.4)	96
		600 (15.2)	22	38	570	27.9 (12.7)	27.1 (12.3)	97
	1.125 (28.6)	700 (17.8)	24	42	565	32.9 (14.9)	31.2 (14.1)	95
		800 (20.3)	27	43	600	37.9 (17.2)	36.3 (16.5)	96
		900 (22.9)	29	44	645	42.0 (19.1)	40.3 (18.3)	96

Note: The listed procedures were welded with HDT mode.

Safety Data Sheets (SDS) and Certificates of Conformance are available on our website at www.lincolnelectric.com

FUMES AND GASES can be hazardous to your health.

- Fumes from the normal use of this product contain significant quantities of potentially hazardous compounds. See consumable product label/insert.
- Keep your head out of the fumes.
- Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area.
- An approved respirator should be used unless exposure assessments are below applicable exposure limits.

TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

CUSTOMER ASSISTANCE POLICY

The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.com for any updated information.

Process HDT™ Activation Capability with Power Wave® Systems

Your purchase of a Lincoln Power Wave Welding System comes with (i) a license to use Lincoln Electric standard Power Wave waveforms, and (ii) Process HDT waveform capability, which requires the purchase of premium Metalshield® HDT™ wire or purchase of a separate license. Unless one of these is purchased, the Process HDT waveform will not be available for use on these machines, and only the standard Power Wave waveforms are usable.

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