

METALSHIELD® MC-70XLS® BUY AMERICA

Mild Steel • AWS E70C-6M-H4



KEY FEATURES

- Minimal silicon islands for an exceptionally clean weld surface
- Minimal post weld clean up
- Best-in-class edge wetting for excellent bead appearance
- Smooth, stable arc characteristics with low spatter levels
- Tolerates welding over mill scale and rust
- Low H4 diffusible hydrogen levels
- High deposition rates and fast travel speeds
- All packaging and diameters are available meeting Buy America & American Iron & Steel (AIS) standards.

WELDING POSITIONS

Flat & Horizontal (CV processes)
Out of Position (Pulse waveforms)

CONFORMANCES

AWS A5.18, ASME SFA-A5.18: E70C-6M-H4
AWS D1.8: 0.045 in., 0.052 in., 1/16 in.

TYPICAL APPLICATIONS

- Robotics/Hard Automation
- Structural Fabrication
- Heavy Fabrication
- Pressure Vessels
- Agriculture

SHIELDING GAS

75-92% Argon / Balance CO₂
Flow rate: 40-60 CFH

DIAMETERS / PACKAGING

Diameter in (mm)	50 lb (22.7 kg) Fiber Spool	750 lb (340 kg) Accu-Trak® Drum
0.045 (1.1)	ED038231	ED038232
0.052 (1.3)	ED038234	ED038235
1/16 (1.6)	ED038237	ED038238

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft-lbf) @ -29°C (-20°F)
Requirements AWS A5.18: E70C-6M-H4	400 (58) min	480 (70) min	22 min	27 (20) min
Typical Results⁽³⁾ As-Welded with 75% Argon / 25% CO ₂ As-Welded with 90% Argon / 10% CO ₂	450-510 (65-75) 450-550 (65-80)	510-590 (75-85) 550-620 (80-90)	26-30 26-30	40-75 (30-55) 60-105 (45-75)

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

DEPOSIT COMPOSITION^(b)

	%C	%Mn	%Si	%S	%P	%Cu
Requirements AWS A5.18: E70C-6M-H4	0.12 max.	1.75 max.	0.90 max.	0.03 max.	0.03 max.	0.50 max.
Typical Performance^(a) As-Welded with 75% Ar / 25% CO ₂ As-Welded with 90% Ar / 10% CO ₂	0.04-0.07	1.25-1.55 1.25-1.60	0.55-0.80 0.60-0.85	0.010-0.020	0.005-0.010	0.01-0.05
	%Ni	%Cr	%Mo	%V	Diffusible Hydrogen (mL/100g weld deposit)	
Requirements AWS A5.18: E70C-6M-H4	0.50 max.	0.20 max.	0.30 max.	0.08 max.	4.0 max.	
Typical Performance^(a) As-Welded with 75% Ar / 25% CO ₂ As-Welded with 90% Ar / 10% CO ₂	0.30-0.40	0.01-0.03	0.01-0.02	0.01-0.02	2-4	

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD ^(d) mm [in]	Wire Feed Speed m/min [in/min]	Voltage ^(b) (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr [lb/hr]	Deposition Rate kg/hr [lb/hr]	Efficiency (%)
0.045 in (1.1 mm), DC+ 90% Argon / 10% CO ₂	19-25 (3/4-1)	5.1 [200]	21-23	155	2.3 [5.0]	2.1 [4.6]	92
		6.4 [250]	22-24	185	2.8 [6.2]	2.6 [5.8]	94
		7.6 [300]	22-26	220	3.5 [7.7]	3.2 [7.0]	91
		8.9 [350]	22-27	245	4.0 [8.9]	3.7 [8.2]	93
		10.2 [400]	23-27	260	4.6 [10.1]	4.3 [9.4]	93
		11.4 [450]	23-28	280	5.2 [11.4]	4.9 [10.7]	94
		12.7 [500]	23-29	305	5.7 [12.6]	5.5 [12.2]	97
		14.0 [550]	24-29	315	6.3 [13.9]	6.2 [13.6]	98
		15.2 [600]	25-30	325	6.8 [15.1]	6.7 [14.8]	98
		16.5 [650]	26-30	355	7.5 [16.5]	7.4 [16.3]	98
0.052 in (1.3 mm), DC+ 90% Argon / 10% CO ₂	19-25 (3/4-1)	17.8 [700]	26-30	360	8.0 [17.7]	7.9 [17.5]	99
		5.1 [200]	22-24	210	3.1 [6.8]	2.9 [6.3]	94
		6.4 [250]	22-26	260	3.9 [8.5]	3.5 [7.8]	92
		7.6 [300]	22-27	290	4.6 [10.2]	4.3 [9.5]	94
		8.9 [350]	23-28	315	5.4 [11.9]	5.2 [11.4]	97
		10.2 [400]	24-28	350	6.2 [13.6]	6.1 [13.4]	97
		11.4 [450]	25-28	370	6.9 [15.3]	6.8 [15.1]	99
		12.7 [500]	27-29	390	7.7 [17.0]	7.6 [16.8]	99
1/16 in (1.6 mm), DC+ 90% Argon / 10% CO ₂	25-32 (1-1 1/4)	14.0 [550]	27-30	420	8.4 [18.6]	8.3 [18.3]	99
		3.8 [150]	22-24	230	3.2 [7.0]	2.8 [6.2]	89
		5.1 [200]	22-25	280	4.3 [9.4]	3.9 [8.7]	93
		6.4 [250]	23-27	310	5.3 [11.6]	5.0 [11.0]	94
		7.6 [300]	24-28	370	6.3 [13.9]	6.3 [13.8]	99
		8.9 [350]	26-30	400	7.4 [16.3]	7.2 [15.9]	98
		10.2 [400]	26-30	450	8.3 [18.4]	8.3 [18.4]	99
		11.4 [450]	27-31	480	9.5 [21.0]	9.3 [20.6]	98

^(b)Typical all weld metal. ^(c)Measured with 0.2% offset. ^(d)See test results disclaimer.
^(a)To estimate ESO, subtract 3/16 in (4.8 mm) from CTWD. ^(b)For greater percentage of CO₂ shielding gas, increase voltage by 1-2 volts.

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 business of Lincoln Electric is manufacturing and selling high quality welding equipment, automated welding systems, consumables, cutting equipment and EV charging systems. Our challenge is to meet the needs of our customers, who are experts in their fields, and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or technical information about their use of our products. Our employees respond to inquiries to the best of their ability based on information and specifications 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, or to provide engineering advice in relation to a specific situation or application. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or communications. Moreover, the provision of such information or technical information does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or technical information, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose or any other equivalent or similar warranty is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the definition of specifications, and 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.