

METALSHIELD® CLARITY™ MC® -707

Mild Steel ■ AWS E70C-6M H4

KEY FEATURES

- Over 40% reduction in Manganese Generation Rate when compared to a conventional E70C-6M electrode
- Assists efforts to reduce exposure to Manganese
- H4 diffusible hydrogen levels
- High deposition rates and fast travel speeds
- Superior arc wetting and bead appearance

WELDING POSITIONS

Flat & Horizontal

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Fiber Spool	500 lb (227 kg) Accu-Trak® Drum (20 in dia.)
0.045 (1.1)	ED036370	ED036491
0.052 (1.3)	ED036371	ED036492
1/16 (1.6)	ED036372	ED036493

CONFORMANCES

AWS A5.18/A5.18M:	E70C-6M-H4
AWS A5.36/A5.36M:	E70T15-M20A4-CS1-H4
CWB/CSA W48-06:	E492C-6M-H4

TYPICAL APPLICATIONS

- Robotics/hard automation
- Structural fabrication
- General fabrication

SHIELDING GAS

90% Ar, 10% CO₂
Flow rate: 40-60 CFH

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.18/A5.18M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft-lbf)	
				@ -29° C (-20° F)	@ -40° C (-40° F)
Requirements - AWS A5.18: E70C-6M-H4	400 (58) min	480 (70) min	22 min	27 (20) min	-
AWS A5.36: E70T15-M20A4-CS1-H4	400 (58) min	490-660 (70-95)	22 min	-	27 (20) min
Typical Results⁽³⁾ As-Welded with 75% Ar / 25% CO ₂ ⁽⁴⁾ As-Welded with 90% Ar / 10% CO ₂	440-480 (64-70) 440-500 (64-72)	520-565 (75-82) 525-570 (76-83)	24-31 28-32	30-74 (22-55) 84-149 (62-110)	- 39-146 (23-108)

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.18/A5.18M

	%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
AWS A5.36: E70T15-M20A4-CS1-H4				0.030 max	0.030 max	
Typical Results⁽³⁾ As-Welded with 75% Ar / 25% CO ₂ ⁽⁴⁾ As-Welded with 90% Ar / 10% CO ₂	0.03-0.05 0.04-0.06	0.60-0.67 0.61-0.70	0.57-0.65 0.61-0.64	0.011-0.014 0.011-0.013	0.005-0.007 0.005-0.006	0.04-0.05 0.04-0.06
	%Ni	%Cr	%Mo	%V	%B	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	Not Specified	4.0 max
AWS A5.36: E70T15-M20A4-CS1-H4						4 max
Typical Results⁽³⁾ As-Welded with 75% Ar / 25% CO ₂ ⁽⁴⁾ As-Welded with 90% Ar / 10% CO ₂	0.02-0.03 0.02	0.03-0.04 0.03-0.04	0.02 0.02	<0.01 <0.01	0.002-0.003 0.003	1-2 1

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Required gas mixture 75-80% Argon/Balance CO₂ for AWS testing.

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD ⁽⁵⁾ mm (in)	Wire Feed Speed m/min (in/min)	Voltage ⁽⁶⁾ (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	150	2.3 (5.1)	2.1 (4.7)	94-99
		6.4 (250)	22-24	175	2.9 (6.4)	2.7 (6.0)	
		7.6 (300)	22-25	190	3.4 (7.6)	3.3 (7.3)	
		8.9 (350)	23-26	215	4.0 (8.9)	3.9 (8.5)	
		10.2 (400)	24-27	235	4.6 (10.2)	4.5 (9.8)	
		11.4 (450)	24-28	260	5.2 (11.5)	5.0 (11.1)	
		12.7 (500)	24-28	270	5.8 (12.7)	5.6 (12.4)	
		14.0 (550)	25-28	290	6.4 (14.0)	6.2 (13.6)	
		15.2 (600)	25-30	300	6.9 (15.3)	6.8 (14.9)	
0.052 in (1.3 mm), DC+ 90% Argon / 10% CO ₂	19-25 (3/4-1)	16.5 (650)	26-30	320	7.5 (16.6)	7.3 (16.2)	94-99
		17.8 (700)	26-31	325	8.1 (17.8)	7.9 (17.5)	
		5.1 (200)	22-25	200	3.1 (6.8)	2.9 (6.4)	
		6.4 (250)	22-25	230	3.9 (8.5)	3.7 (8.2)	
		7.6 (300)	23-26	255	4.6 (10.2)	4.5 (9.9)	
		8.9 (350)	24-27	285	5.4 (11.9)	5.3 (11.6)	
		10.2 (400)	24-28	310	6.2 (13.6)	6.1 (13.4)	
1/16 in (1.6 mm), DC+ 90% Argon / 10% CO ₂	25-32 (1-1 1/4)	11.4 (450)	25-28	340	6.9 (15.3)	6.8 (15.1)	94-99
		12.7 (500)	27-29	365	7.7 (17.0)	7.6 (16.8)	
		14.0 (550)	28-30	390	8.4 (18.6)	18.5 (18.6)	
		3.8 (150)	22-24	215	3.1 (6.9)	2.9 (6.3)	
		5.1 (200)	22-25	260	4.2 (9.2)	4.0 (8.7)	
		6.4 (250)	23-27	295	5.2 (11.5)	5.0 (11.1)	
		7.6 (300)	24-28	350	6.2 (13.7)	6.1 (13.5)	
1/16 in (1.6 mm), DC+ 90% Argon / 10% CO ₂	25-32 (1-1 1/4)	8.9 (350)	26-30	375	7.3 (16.0)	7.2 (15.9)	94-99
		10.2 (400)	26-30	425	8.3 (18.3)	8.3 (18.3)	
		11.4 (450)	27-31	460	9.3 (20.6)	9.4 (20.7)	

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer. ⁽⁴⁾Required gas mixture 75-80% Argon/Balance CO₂ for AWS testing. ⁽⁵⁾To estimate ESO, subtract 3/16 in (4.8 mm) from CTWD. ⁽⁶⁾For greater percentage of CO₂ shielding gas, increase voltage by 1-2 volts. NOTE: This product contains micro-alloying elements. Additional information available upon request.

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

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.

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