ULTRACORE® CLARITY™ M71 LE

Mild Steel, All Positions ▪ AWS E71T-1M-H8, E71T1-M21A0-CS1-H8

KEY FEATURES

- The lowest Manganese Generation Rate (MnGR) of any similarly classified electrode
- Over 80% reduction in MnGR when compared to a standard E71T1-1M flux-cored electrode
- Assists efforts to reduce exposure to Mn
- Designed for welding with 75% Argon / 25% CO_2 shielding gas
- H8 diffusible hydrogen levels
- ProTech® foil bag packaging

WELDING POSITIONS

All

CONFORMANCES

AWS A5.20/A5.20M:	E71T-1M-H8
AWS A5.36/A5.36M:	E71T1-M21A0-CS1-H8
CWB/CSA W48-06:	E491T-9M-H8*

**1/16 diameter only, others pending*

TYPICAL APPLICATIONS

- General Fabrication

SHIELDING GAS

75% Argon / 25% CO_2
Flow rate: 40-50 CFH

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (14.9kg) Fiber Spool
0.045 (1.1)	ED036253
1/16 (1.6)	ED036252

MECHANICAL PROPERTIES[1]

	Yield Strength[2] MPa (ksi)	Tensile Strength MPa (ksi)	Elongation (%)	Charpy V-Notch J (ft▪lbf) @-18°C (0°F)
Requirements AWS A5.20: E71T-1M-H8	400 (58) min	480-655 (70-95)	22 min	27 (20) min
AWS A5.36: E71T1-M21A0-CS1-H8	400 (58) min	480-655 (70-95)	22 min	27 (20) min
Typical Results[3] As-Welded with 75% Ar/25% CO_2	430-440 (62-64)	525-540 (76-78)	25-26	38-85 (28-63)

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

DEPOSIT COMPOSITION[1]

	%C	%Mn	%Si	%S
Requirements AWS A5.20: E71T-1M-H8	0.12 max	1.75 max	0.90 max	0.03 max
AWS A5.36: E71T1-M21A0-CS1-H8				0.030 max
Typical Results[3] As-Welded with 75% Ar/25% CO_2	0.08-0.09	0.12-0.14	0.49-0.54	0.006-0.007
	%P	**%Ni**	**Diffusible Hydrogen (ml/100g weld deposit)**	
Requirements AWS A5.20: E71T-1M-H8	0.03 max	0.50 max	8.0 max	
AWS A5.36: E71T1-M21A0-CS1-H8	0.030 max		8 max	
Typical Results[3] As-Welded with 75% Ar/25% CO_2	0.010	0.44-0.46	4-6	

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD[4] mm (in)	Wire Feed Speed m/min (in/min)	Voltage (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+ 75% Ar/25% CO_2	19 - 25 (3/4 - 1)	5.1 (200)	20-24	165	2.1 (4.6)	1.8 (4.0)	84-88
		6.4 (250)	21-25	180	2.6 (5.8)	2.3 (5.1)	
		7.6 (300)	22-26	215	3.1 (6.9)	2.8 (6.1)	
		8.9 (350)	23-26	235	3.7 (8.1)	3.3 (7.2)	
		10.2 (400)	24-29	260	4.2 (9.3)	3.7 (8.2)	
		11.4 (450)	25-30	280	4.8 (10.6)	4.3 (9.4)	
		12.7 (500)	26-31	300	5.1 (11.2)	4.8 (10.5)	
1/16 in (1.6 mm), DC+ 75% Ar/25% CO_2	19 - 25 (3/4 - 1)	3.2 (125)	22-25	170	2.2 (4.9)	2.0 (4.5)	83-90
		3.8 (150)	22-25	185	2.9 (6.3)	2.5 (5.6)	
		5.1 (200)	23-26	230	3.8 (8.4)	3.3 (7.3)	
		6.4 (250)	24-27	260	4.7 (10.4)	4.2 (9.2)	
		7.6 (300)	25-29	295	6.8 (14.9)	5.1 (11.3)	
		10.2 (400)	27-31	325	7.6 (16.7)	6.8 (14.9)	
		12.7 (500)	29-33	460	9.5 (21.0)	8.6 (19.0)	

[1]Typical all weld metal. [2]Measured with 0.2% offset. [3]See test results disclaimer [4]To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD.

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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THE LINCOLN ELECTRIC COMPANY
22801 St. Clair Avenue ▪ Cleveland, OH ▪ 44117-1199 ▪ U.S.A.
Phone: +1.216.481.8100 ▪ www.lincolnelectric.com