ULTRACORE® 71A85

Mild Steel, All Position · AWS E71T-1M-H8, E71T-9M-H8

BUY AMERICA

KEY FEATURES

- Fast freezing slag for out-of-position welding
- Designed for welding with 75 - 85% Argon/ balance CO2 shielding gas
- Premium arc performance and bead appearance
- Meets AWS D1.8 seismic lot waiver requirements

TYPICAL APPLICATIONS

- Shipbuilding
- Seismic structural fabrication
- General fabrication

SHIELDING GAS

75% - 85% Argon / Balance CO2
Flow Rate: 40 - 50 CFH

CONFORMANCES

AWS A5.20/A5.20M: 2005	E71T-1M-H8, E71T-9M-H8
ASME SFA-A5.20:	E71T-1M-H8, E71T-9M-H8
ABS:	3YSA H10
Lloyd's Register:	3YS H10
DNV Grade:	III YMS H10
CWB/CSA W48-06:	E491T-9M H8
EN ISO 17632-B:	T493T1-1MA-H10
FEMA 353	
AWS D1.8	

WELDING POSITIONS

All

DIAMETERS / PACKAGING

Diameter in (mm)	15 lb (6.8 kg) Plastic Spool 60 lb (27.2 kg) Master Carton	33 lb (15 kg) Spool	50 lb (22.7 kg) Fiber Spool	500 lb (227 kg) Accu-Trak® Drum
0.045 (1.1)	ED031885, ED037917*	ED031663, ED032383**, ED035592* ED033950**	ED031847, ED038178*	ED032047
0.052 (1.3)	ED031886, ED037918*	ED031664, ED035591*	ED031848	ED032048
1/16 (1.6)	ED031887, ED036597*	ED031665, ED033765**, ED035590*	ED031849, ED038179*	ED032049, ED038180*

** Buy America Product ** Q2 Tested*

MECHANICAL PROPERTIES[1] – *AS REQUIRED PER AWS A5.20/A5.20M: 2005*

	Yield Strength[2] MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft-lbf) @ -18°C (0°F)	Charpy V-Notch J (ft-lbf) @ -29°C (-20°F)
Requirements[4] AWS E71T-1M-H8, AWS E71T-9M-H8	400 (58) min	480-655 (70-95)	22 min	27 (20) min. Not Specified	Not Specified 27 (20) min.
Typical Results[3] As-Welded with 75%-85% Ar/balance CO_2	550-600 (80-88)	600-650 (87-94)	24 - 26	64-115 (47-85)	43-95 (32-70)

DEPOSIT COMPOSITION[1]

	%C	%Mn	%Si	%S	%P	Diffusible Hydrogen (mL/100g weld deposit)
Requirements[4] AWS E71T-1M-H8, E71T-9M-H8	0.12 max	1.75 max	0.90 max	0.03 max	0.03 max	8.0 max
Typical Results[3] As-Welded with 75%-85% Ar/balance CO_2	0.03-0.04	1.43-1.56	0.52-0.59	<0.01	0.01	6-8

[1]Typical all weld metal. [2]Measured with 0.2% offset. [3]See test results disclaimer. [4]As-Welded with 100% CO_2.

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD[5] 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%-85% Ar/ balance CO_2	25 (1)	All Positions					86-88
		4.4 (175)	21-26	125	1.8 (4.0)	1.6 (3.5)	
		6.4 (250)	22-27	150	2.6 (5.7)	2.3 (5.0)	
		7.6 (300)	23-28	165	3.1 (6.8)	2.7 (6.0)	
		8.9 (350)	23-29	190	3.6 (8.0)	3.2 (7.0)	
		10.2 (400)	25-30	205	4.1 (9.1)	3.6 (8.0)	
		11.4 (450)	26-31	225	4.7 (10.3)	4.1 (9.0)	
		Flat & Horizontal					
		12.7 (500)	27-32	215	5.2 (11.4)	4.5 (10.0)	
		14.0 (550)	28-33	230	5.7 (12.5)	5.0 (10.9)	
		15.2 (600)	28-34	245	6.2 (13.7)	5.4 (11.9)	
0.052 in (1.3 mm), DC+ 75%-85% Ar/ balance CO_2	25 (1)	All Positions					86-88
		3.8 (150)	21-26	150	2.0 (4.5)	1.8 (3.9)	
		5.1 (200)	21-27	165	2.7 (6.0)	2.4 (5.2)	
		6.4 (250)	22-27	190	3.4 (7.5)	2.9 (6.5)	
		7.6 (300)	23-28	215	4.1 (9.0)	3.5 (7.8)	
		8.9 (350)	24-29	235	4.7 (10.5)	4.1 (9.1)	
		9.5 (375)	25-30	255	5.1 (11.2)	4.4 (9.8)	
		Flat & Horizontal					
		10.8 (425)	26-31	275	5.8 (12.7)	5.0 (11.1)	
		12.1 (475)	27-32	295	6.4 (14.2)	5.6 (12.4)	
		12.7 (500)	27-33	315	6.8 (15.0)	5.9 (13.0)	
1/16 in (1.6 mm), DC+ 75%-85% Ar/ balance CO_2	25 (1)	All Positions					86-88
		3.2 (125)	20-25	185	2.4 (5.3)	2.1 (4.6)	
		4.4 (175)	21-26	215	3.3 (7.4)	2.9 (6.4)	
		5.1 (200)	22-27	235	3.8 (8.4)	3.3 (7.3)	
		5.7 (225)	23-28	265	4.3 (9.5)	3.7 (8.2)	
		6.4 (250)	24-29	285	4.8 (10.5)	4.2 (9.2)	
		7.6 (300)	25-30	315	5.7 (12.6)	5.0 (11.0)	
		Flat & Horizontal					
		8.3 (325)	26-31	335	6.2 (13.7)	5.4 (11.9)	
		8.9 (350)	27-32	365	6.7 (14.7)	5.8 (12.8)	
		10.2 (400)	28-33	385	7.6 (16.8)	6.6 (14.6)	

[1]Typical all weld metal. [2]Measured with 0.2% offset. [3]See test results disclaimer [4]As-Welded with 100% CO_2. [5]To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD.

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.

Publication C3.12.6 | Issue Date 08/24

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