



UltraCore® 71A85

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

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

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	

Typical Applications

- ▶ Shipbuilding
- ▶ Seismic structural fabrication
- ▶ General fabrication

Welding Positions

All

Shielding Gas

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

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	ED031663	ED031847	ED032047
0.052 (1.3)	ED031886	ED031664	ED031848	ED032048
1/16 (1.6)	ED031887	ED031665	ED031849	ED032049

*Spool may be plastic or fiber.

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)	@ -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)

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DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.20/A5.20M: 2005

	%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

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 Position						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	245	5.2 (11.4)	4.5 (10.0)		
		14.0 (550)	28-33	265	5.7 (12.5)	5.0 (10.9)		
15.2 (600)	28-34	280	6.2 (13.7)	5.4 (11.9)				
0.052 in (1.3 mm), DC+ 75%-85% Ar/ balance CO ₂	25 (1)	All Position						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 Position						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 below. ⁽⁴⁾As-Welded with 75%-85% Argon/Balance CO₂. ⁽⁵⁾To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD.
NOTE 1: FEMA and AWS D1.8 structural steel seismic supplement test data can be found on this product at www.lincolnelectric.com. NOTE 2: 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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