

UltraCore® 71A85

Mild Steel • AWS E71T-1C, E71T-9C

Key Features

- ▶ Q2 Lot® - Certificate showing actual deposit chemistry and mechanical properties available online
- ▶ Available as Batch Managed Inventory
- ▶ 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
- ▶ Each spool is identified with AWS classification and LOT number

ASME IX Qualification

ASME IX Qualification: QW432 F-No 6, QW442 A-No 1

Conformances

AWS A5.20/A5.20M:	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
- ▶ Nuclear power plant construction and maintenance

Welding Positions

All

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Plastic Spool
0.045 (1.1)	ED033950
1/16 (1.6)	ED033951

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(AWS E71T-1C, E71T-9C)

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.20/A5.20M

	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)

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

	%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)	4.4 (175)	21-26	125	1.8 (4.0)	1.6 (3.5)	86-88
		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)	
		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)	
1/16 in (1.6 mm), DC+ 75%-85% Ar/ balance CO ₂	25 (1)	3.2 (125)	20-25	185	2.4 (5.3)	2.1 (4.6)	86-88
		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)	
		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 on pg. 12. ⁽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.