

# ULTRACORE® HD-C

Mild Steel, All Position ■ AWS E71T-9C-H8, E71T1-C1A2-CS1-H8



## KEY FEATURES

- High deposition rates, increase weld deposition exceeding 10 lbs/hr out-of-position
- Fast freezing slag for a flat bead shape and increased productivity in all positions, including vertical up
- Operators can set the machine on a single setting and weld in all positions
- Little or no pre-weld clean up required, weld over light rust, mill scale, and primer

## WELDING POSITIONS

All

## CONFORMANCES

<b>AWS 5.20/A5.20M:</b>	E71T-1C-H8, E71T-9C-H8
<b>AWS A5.36:</b>	E71T1-C1A2-CS1-H8
<b>ABS:</b>	3YSA H10
<b>Lloyd's Register:</b>	3YS H10
<b>DNV:</b>	III YMS H10
<b>CWB/CSA W48-06:</b>	E491T-9-H8
<b>EN ISO 17632-B</b>	T493T1-1CA-H10

## TYPICAL APPLICATIONS

- Shipbuilding
- General fabrication

## SHIELDING GAS

100% CO<sub>2</sub>  
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	50 lb (22.7 kg) Coil	500 lb (227 kg) Accu-Trak® Drum
0.045 (1.1)	ED033756	ED033755	ED033757		
0.052 (1.3)	ED033759	ED033758	ED033760		ED034376
1/16 (1.6)	ED033762	ED033761	ED033763	ED036529*	ED033785

\*Buy America Product \*\*Spool may be plastic or fiber.

## MECHANICAL PROPERTIES<sup>(1)</sup>

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft-lbf)	
				@ -18°C (0°F)	@ -29°C (-20°F)
<b>Requirements</b> AWS E71T-1C-H8 AWS E71T-9C-H8	400 (58) min	480-660 (70-95)	22 min	27 (20) min Not Specified	Not Specified 27 (20) min
<b>Test Results<sup>(3)</sup></b> - As-Welded with 100% CO <sub>2</sub>	540-560 (78-81)	590-610 (86-89)	27	37-111 (27-82)	31-85 (23-63)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer

**DEPOSIT COMPOSITION<sup>(1)</sup>**

	%C	%Mn	%Si
<b>Requirements</b> - AWS E71T-1C-H8, E71T-9C-H8	0.12 max	1.75 max	0.90 max
<b>Test Results<sup>(3)</sup></b> - As-Welded with 100% CO <sub>2</sub>	0.04-0.05	1.36-1.46	0.38-0.42
	%S	%P	Diffusible Hydrogen (mL/100g weld deposit)
<b>Requirements</b> - AWS E71T-1C-H8, E71T-9C-H8	0.03 max	0.03 max	8 max
<b>Test Results<sup>(3)</sup></b> - As-Welded with 100% CO <sub>2</sub>	0.01	0.01	4-6

**TYPICAL OPERATING PROCEDURES**

Diameter, Polarity Shielding Gas	CTWD <sup>(4)</sup> 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+ 100% CO <sub>2</sub>	19 - 25 (3/4 - 1)	4.4 (175)	22-25	145	1.8 (3.9)	1.5 (3.4)	85 - 87
		6.4 (250)	23-28	185	2.5 (5.6)	2.2 (4.8)	
		7.6 (300)	24-30	215	3.1 (6.8)	2.6 (5.8)	
		8.9 (350)	25-31	235	3.6 (7.9)	3.1 (6.8)	
		10.2 (400)	27-32	255	4.1 (9.0)	3.5 (7.8)	
		11.4 (450)	28-33	280	4.6 (10.1)	4.0 (8.8)	
		12.7 (500)	27-33	300	5.1 (11.3)	4.4 (9.8)	
		14.0 (550)	28-33	315	5.6 (12.4)	4.9 (10.8)	
0.052 in (1.3 mm), DC+ 100% CO <sub>2</sub>	19 - 25 (3/4 - 1)	3.8 (150)	22-25	155	2.1 (4.7)	1.7 (3.8)	81 - 85
		5.1 (200)	23-26	190	2.9 (6.3)	2.4 (5.2)	
		6.4 (250)	23-27	225	3.5 (7.8)	2.9 (6.5)	
		7.6 (300)	24-29	265	4.3 (9.4)	3.6 (7.9)	
		8.9 (350)	26-30	285	5.0 (11.0)	4.2 (9.2)	
		9.5 (375)	27-30	310	5.3 (11.7)	4.5 (9.9)	
		10.8 (425)	28-32	325	6.0 (13.3)	5.1 (11.2)	
		12.1 (475)	29-33	345	6.8 (14.9)	5.7 (12.6)	
1/16 in (1.6 mm), DC+ 100% CO <sub>2</sub>	19 - 25 (3/4 - 1)	3.8 (150)	21-26	195	2.9 (6.4)	2.4 (5.3)	84 - 87
		4.4 (175)	22-27	245	3.4 (7.5)	2.9 (6.3)	
		5.1 (200)	22-27	260	3.9 (8.5)	3.3 (7.2)	
		5.7 (225)	23-28	290	4.4 (9.6)	3.7 (8.1)	
		6.4 (250)	24-29	310	4.8 (10.6)	4.1 (9.1)	
		7.6 (300)	25-30	330	5.8 (12.7)	4.9 (10.9)	
		8.3 (325)	25-30	365	6.3 (13.8)	5.4 (11.9)	
		8.9 (350)	26-30	390	6.7 (14.8)	5.8 (12.8)	
10.2 (400)	27-31	405	7.7 (16.9)	6.7 (14.7)			

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer <sup>(4)</sup>As-Welded with 100% CO<sub>2</sub> <sup>(5)</sup>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](http://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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