



Outershield® XLH-70

Mild Steel, Flat & Horizontal • AWS E70T-1C-H8, E70T-9C-H8

Key Features

- ▶ Meets AWS D1.8 seismic lot waiver requirements for demand critical welds.
- ▶ H8 diffusible hydrogen levels - controlled for high resistance to hydrogen induced cracking.
- ▶ High deposition rates and excellent fast follow characteristics.
- ▶ Stiff wire enables feeding over long distances.
- ▶ Tolerates mild levels of surface contaminants.
- ▶ Designed for welding with CO₂ shielding gas.

Conformances

AWS A5.20/A5.20M: 2005 E70T-1C-H8, E70T-9C-H8
 ASME SFA-5.20: E70T-1C-H8, E70T-9C-H8
 ABS: 3YSA-H5
 FEMA 353
 AWS D1.8

Welding Positions

Flat & Horizontal

Typical Applications

- ▶ Structural fabrication
- ▶ Heavy equipment
- ▶ General fabrication
- ▶ Seismic applications
- ▶ Machinery fabrication

Shielding Gas

100% CO₂
 Flow Rate: 40-50 CFH

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(AWS E70T-1C, E70T-9C)

DIAMETERS / PACKAGING

Diameter in (mm)	50 lb (22.7 kg) Coil	500 lb (227 kg) Speed-Feed® Drum
3/32 (2.4)	ED030236	ED030360

NOTE: Speed-Feed® drums require rotation for proper payoff.

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 AWS E70T-1C-H8 AWS E70T-9C-H8	400 (58) min.	480-660 (70-95)	22 min.	27 (20) min.	– 27 (20) min.
Typical Results⁽³⁾ As-Welded with 100% CO ₂	480-530 (70-77)	570-620 (82-89)	27-30	61-134 (45-99)	42-107 (31-79)

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

	%C	%Mn	%Si
Requirements - AWS E70T-1C-H8, E70T-9C-H8	0.12 max.	1.75 max.	0.90 max.
Test Results⁽³⁾ As-Welded with 100% CO ₂	0.06-0.07	1.40-1.60	0.48-0.58
	%S	%P	Diffusible Hydrogen (mL/100g weld deposit)
Requirements - AWS E70T-1C-H8, E70T-9C-H8	0.03 max.	0.03 max.	8.0 max.
Test Results⁽³⁾ As-Welded with 100% CO ₂	≤0.01	≤0.01	3-6

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 (%)
3/32 in. (2.4 mm), DC+ 100% CO ₂	32 (1-1/4)	3.8 (150)	23-26	345	6.5 (14.4)	5.6 (12.4)	86
		5.1 (200)	27-30	445	8.7 (19.2)	7.6 (16.8)	87
		6.4 (250)	28-31	510	10.9 (24.0)	9.5 (21.0)	87
		7.6 (300)	30-32	570	13.1 (28.8)	11.4 (25.2)	87
		8.3 (325)	31-33	600	14.2 (31.2)	12.4 (27.3)	87

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer below. ⁽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.

CUSTOMER ASSISTANCE POLICY

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