

ULTRACORE® 80Ni1M

Low Alloy, Flat & Horizontal ■ AWS E80T1-Ni1M-JH8, E80T1-M21A4-Ni1-H8

KEY FEATURES

- High deposition in the flat and horizontal positions
- Excellent operator appeal and slag detachability
- Designed for welding with 75-80% Argon / balance CO₂ shielding gas
- ProTech® foil bag packaging

WELDING POSITIONS

Flat & Horizontal

SHIELDING GAS

75-80% Argon / balance CO₂
Flow Rate: 40-55 CFH

CONFORMANCES

AWS A5.29/A5.29M: E80T1-Ni1M-JH8
AWS A5.36/A5.36M: E80T1-M21A4-Ni1-H8

TYPICAL APPLICATIONS

- Structural fabrication
- Heavy equipment
- Shipbuilding

DIAMETERS / PACKAGING

Diameter in (mm)	50 lb (22.7 kg) Coil	500 lb (227 kg) Accu-Trak® Drum	500 lb (227 kg) Speed-Feed® Drum
1/16 (1.6)	ED035768	ED036628	
5/64 (2.0)	ED035769		ED036629
3/32 (2.4)	ED035770		ED036620

MECHANICAL PROPERTIES^{(1) W}

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft-lbf) -40°C (-40°F)
Requirements⁽⁴⁾ AWS A5.29 E80T1-Ni1M-JH8	470 (68) min	550-690 (80-100)	19 min	27 (20) min
Requirements⁽⁴⁾ AWS A5.36 E80T1-M21A4-Ni1-H8	470 (68) min	550-690 (80-100)	19 min	27 (20) min
Typical Results⁽³⁾ As-Welded with 75% Ar / 25% CO ₂	585-595 (85-86)	630-650 (91-94)	27	50-75 (37-57)

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾As-Welded with 100% CO₂. ⁽⁵⁾To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD.

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%S	%P	%Ni	%Mo	%Cr	%V	Diffusible Hydrogen (mL/100g weld deposit)
Requirements⁽⁴⁾ AWS A5.29 E80T1-Ni1M-JH8	0.12 max	1.50 max	0.80 max	0.03 max	0.03 max	0.80-1.10	0.35 max	0.15 max	0.05 max	8.0 max
Requirements⁽⁴⁾ AWS A5.36 E80T1-M21A4-Ni1-H8	0.12 max	1.75 max	0.80 max	0.030 max	0.030 max	0.80-1.10	0.35 max	0.15 max	0.05 max	8 max
Typical Results⁽³⁾ As-Welded with 100% CO ₂	0.04-0.06	1.32-1.36	0.54-0.55	0.004-0.006	0.011-0.012	0.91-1.04	0.01	0.04-0.06	0.02	2.9-4.6

TYPICAL OPERATING PROCEDURES – Flat & Horizontal

Diameter, Polarity Shielding Gas	CTWD ⁽²⁾ 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 (%)
1/16 in (1.6 mm), DC+ 75% Ar / 25% CO ₂	25 (1)	3.2 (125)	22-26	155	2.2 (4.8)	2.0 (4.4)	84 - 89
		6.4 (250)	24-28	250	4.5 (9.9)	4.0 (8.8)	
		9.5 (375)	27-31	325	6.8 (14.9)	6.0 (13.2)	
5/64 in (2.0 mm), DC+ 75% Ar / 25% CO ₂	25 (1)	3.2 (125)	22-26	250	3.5 (7.8)	3.1 (6.8)	84 - 88
		5.7 (225)	24-28	360	6.4 (14.0)	5.5 (12.2)	
3/32 in (2.4 mm), DC+ 75% Ar / 25% CO ₂	31 (1 1/4)	8.3 (325)	28-31	410	8.5 (18.6)	7.5 (16.4)	87 - 89
		3.2 (125)	27-32	340	5.4 (11.9)	4.7 (10.3)	
		5.1 (200)	30-36	620	8.6 (19.0)	7.6 (16.7)	
		6.4 (250)			13.1 (28.8)	11.4 (25.1)	

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾As-Welded with 100% CO₂. ⁽⁵⁾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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