

ULTRACORE® SR-12M

Mild Steel, All Position ▪ AWS E71T-12MJ-H8, E71T12-M21A5-CS2-H8

KEY FEATURES

- Capable of meeting 20 ft•lbf @ -50°F in both the as-welded and stress relieved conditions
- A premium arc performance make UltraCore® SR-12M easy to use for welders of all skill levels
- ProTech® foil bag packaging

WELDING POSITIONS

All

SHIELDING GAS

75 - 80% Argon / balance CO₂
Flow Rate: 40 - 50 CFH

CONFORMANCES

AWS A5.20/5.20M:	E71T-12M-JH8
AWS A5.36/5.36M:	E71T12-M21A5-CS2-H8, E71T12-M21P5-CS2-H8
ASME SFA-5.20:	E71T-12M-JH8
CWB / CSA W48-06:	E491T-12MJ-H8

TYPICAL APPLICATIONS

- General Fabrication
- Offshore Industry
- Petrochemical

DIAMETERS / PACKAGING

Diameter in. (mm)	33 lb (15 kg) Fiber Spool
0.045 (1.1)	ED034529
0.052 (1.3)	ED034530
1/16 (1.6)	ED034531

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf)	
				@ -40°C (-40°F)	@ -46°C (-50°F)
Requirements					
AWS A5.20 - E71T-12M-JH8 As-welded with 75-80% Ar / Balance CO ₂		480-620 (70-90)		27 (20) min	—
AWS A5.36 - E71T1-M21A5-CS2-H8 As-Welded with 75%-80% Ar/ Balance CO ₂	400 (58) min	480-655 (70-95)	22 min	—	27 (20) min
AWS A5.36 - E71T1-M21P5-CS2-H8 Stress Relieved 1hr @ 620°C (1150°F) with 75%-80% Ar/ Balance CO ₂		480-655 (70-95)		—	27 (20) min
Test Results⁽³⁾					
As-Welded with 75%-80% Ar/ Balance CO ₂	500 (73)	590 (86)	25	134 (99)	125 (92)
Stress-Relieved 1 hr @ 620°C (1150°F) with 75%-80% Ar/ Balance CO ₂	440 (64)	545 (79)	33	—	117 (86)

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

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%S	%P	%Ni	Diffusible Hydrogen (mL/100g weld deposit)
Requirements AWS A5.20 - E71T-12M-JH8 As-Welded with 75-80% Ar / Balance CO ₂ AWS A5.36 - E71T1-M21A5-CS2-H8 E71T1-M21P5-CS2-H8	0.12 max	1.60 max	0.90 max	0.03 max 0.030 max	0.03 max 0.030 max	0.50 max	8 max
Test Results⁽³⁾ As-Welded with 75% Ar / 25% CO ₂	0.06	1.45	0.44	0.008	0.014	0.01	5.6

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD ⁽⁴⁾ 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+ As-Welded with 75% Ar / 25% CO ₂	25 (1)	3.8 (175)	20-25	140	1.8 (4.0)	1.6 (3.5)	85-88
		5.7 (225)	21-26	150	2.3 (5.1)	2.0 (4.5)	
		6.4 (250)	22-27	170	2.6 (5.7)	2.2 (4.8)	
		7.6 (300)	23-28	200	3.5 (7.7)	3.1 (6.8)	
		10.2 (400)	24-29	220	4.2 (9.2)	3.5 (7.8)	
		12.7 (500)	26-32	260	5.1 (11.2)	4.5 (9.9)	
0.052 in (1.3 mm), DC+ As-Welded with 75% Ar / 25% CO ₂	25 (1)	3.8 (150)	20-25	150	2.0 (4.5)	1.8 (3.9)	85-88
		6.4 (250)	24-29	235	3.4 (7.5)	2.9 (6.5)	
		8.9 (350)	28-32	295	4.7 (10.5)	4.1 (9.1)	
		11.4 (450)	29-34	330	6.1 (13.5)	5.3 (11.7)	
1/16 in (1.6 mm), DC+ As-Welded with 75% Ar / 25% CO ₂	25 (1)	3.8 (150)	21-26	200	2.9 (6.3)	2.5 (5.5)	85-88
		5.1 (200)	22-27	245	3.8 (8.4)	2.9 (6.4)	
		6.4 (250)	24-29	285	4.8 (10.6)	4.1 (9.1)	
		7.6 (300)	26-31	325	5.8 (12.7)	4.9 (10.9)	
		8.9 (350)	28-33	340	6.7 (14.7)	5.8 (12.8)	

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

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