

UltraCore® SR-9C

Low Alloy, All Positions • AWS E71T-9C-JH8, E71T1-C1A4-CS1-H8

Key Features

- ▶ Capable of exceeding 20 ft-lbs at -40°F in the as-welded condition at -20°F after PWHT of 1 hour @ 1150°F.
- ▶ Designed for welding with 100% CO₂ shielding gas

Typical Applications

- ▶ Railcar fabrication
- ▶ General fabrication
- ▶ Pressure vessels

Conformances

AWS A5.20/A5.20M:	E71T-9C-JH8
AWS A5.36/A5.36M:	E71T1-C1A4-CS1-H8
	E71T1-C1P2-CS1-H8

Welding Positions

All

Shielding Gas

100% CO₂
Flow rate: 40-50 CFH

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Fiber Spool (Plastic Bag)	500 lb (227 kg) Accu-Trak® Drum
1/16 (1.6)	ED034473	ED034758

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation (%)	Charpy V-Notch J (ft-lbf)	
				-29°C (-20°F)	-40°C (-40°F)
Requirements AWS A5.29: E81T1-K2C-JH4 As-Welded with 100% CO ₂	400 (58) min.	480-655 (70-95)	22 min.	–	27 (20) min
AWS A5.36: E71T1-C1A4-CS1-H8 As-Welded with 100% CO ₂	400 (58) min.	480-655 (70-95)	22 min.	–	27 (20) min
AWS A5.36: E71T1-C1P2-CS1-H8 Stress Relieved with 100% CO ₂ for 1 hr. @ 621°C (1150°F)	400 (58) min.	480-655 (70-95)	22 min.	27 (20) min.	–
Typical Results⁽³⁾ As-Welded with 100% CO ₂	555-582 (81-84)	615-630 (89-91)	25-27	–	35-95 (24-71)
Stress Relieved with 100% CO ₂ for 1 hr @ 620°C (1150°F)	515-520 (75-76)	530-565 (77-82)	26-31	30-120 (21-87)	–

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(AWS E71T-1C-JH8, E71T-9C-JH8)

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si
Requirements AWS A5.20: E71T-9C-JH8 AWS A5.36: E71T1-C1A4-CS1-H8, E71T1-C1P2-CS1-H8	0.12 max.	1.75 max.	0.90 max.
Typical Results⁽³⁾ As-welded with 100% CO ₂	0.04-0.05	1.37-1.56	0.45-0.51
	%S	%P	Diffusible Hydrogen (mL/100g weld deposit)
Requirements AWS A5.20: E71T-9C-JH8 AWS A5.36: E71T1-C1A4-CS1-H8, E71T1-C1P2-CS1-H8	0.03 max. 0.030 max.	0.03 max. 0.030 max.	8.0 max. 8 max.
Test Results⁽³⁾ As-welded with 100% CO ₂	0.008	0.015	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 (%)
1/16 in (1.6 mm), DC+ 100% CO₂							
Optimal Settings	25 (1)	8.6 (338)	27	310	2.9-7.7 (6.4-17.0)	2.4-6.4 (5.3-14.1)	82-87
Min - Max	19-25 (3/4-1)	3.8-8.9 (150-350)	22-31	200-360			

⁽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.

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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