

ULTRACORE® FCP 309L

Stainless ▪ AWS E309LT1-1, E309LT1-4, E309T1-1, E309T1-4

KEY FEATURES

- Dual classified- meets 309/309L
- Q2 Lot® - Certificate showing actual deposit composition and ferrite number (FN) available online
- Stable and consistent CO₂ and mixed gas
- Easy to control out of position
- ProTech® hermetically sealed packaging

WELDING POSITIONS

All

CONFORMANCES

AWS A5.22/A5.22M: & ASME SFA-A5.22:	E309LT1-1, E309LT1-4, E309T1-1, E309T1-4
ABS:	E309LT1-1, E309LT1-4, E309T1-1, E309T1-4
CWB/CSA W48-06:	E309LT1-1, E309LT1-4

TYPICAL APPLICATIONS

- Buffer layers and clad steels - overlays on CMn, mild steel or low alloy steels
- Dissimilar joints - stainless types 410, 304L, 321, and 316L to mild and low alloy steels

SHIELDING GAS

100% CO₂
75% Argon / 25% CO₂

DIAMETERS / PACKAGING

Diameter in (mm)	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)
0.045 (1.1)	ED033010
1/16 (1.6)	ED033011

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.22/A5.22M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Ferrite Number
Requirements AWS E309LT1-1, E309LT1-4 AWS E309T1-1, E309T1-4	Not Specified Not Specified	520 (75) min 550 (80) min	30 min	Not Specified Not Specified
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	434 (63) 450 (65)	565 (82) 593 (86)	33 33	20-22 22-27

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

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.22/A5.22M

	%C⁽⁴⁾	%Mn	%Si	%S	%P
Requirements – AWS E309LT1-1 & E309LT1-4	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max
Typical Results⁽³⁾ As-Welded with 100% CO ₂	≤0.03	1.0	0.8	≤ 0.01	≤ 0.02
As-Welded with 75% Ar/25% CO ₂	≤0.03	1.0	0.9	≤ 0.01	≤ 0.02
	%Ni	%Cr	%Mo	%Cu	%Bi
Requirements – AWS E309LT1-1 & E309LT1-4	12.0 - 14.0	22.0 - 25.0	0.75 max	0.75 max	-
Typical Results⁽³⁾ As-Welded with 100% CO ₂	12.8-13.2	23.6-23.9	≤ 0.20	≤ 0.25	0.01-0.02
As-Welded with 75% Ar/25% CO ₂	12.9-13.3	23.9-24.1	≤ 0.20	≤ 0.25	0.01-0.02

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 (%)
0.045 in (1.1 mm), DC+ 75% Ar/25% CO ₂	19 (3/4)	5.1 (200)	24-27	130	2.1 (4.6)	1.8 (3.9)	85
	19 (3/4)	7.6 (300)	25-28	155	3.2 (7.0)	2.6 (5.8)	83
	19 (3/4)	10.2 (400)	26-29	190	4.2 (9.3)	3.5 (7.8)	84
1/16 in (1.6 mm), DC+ 75% Ar/25% CO ₂	25 (1)	3.6 (140)	23-26	170	2.8 (6.1)	2.3 (5.0)	82
	25 (1)	5.1 (200)	25-28	210	3.9 (8.7)	3.2 (7.1)	82
	25 (1)	8.9 (350)	26-29	290	6.9 (15.1)	5.7 (12.5)	83

⁽¹⁾Typical all weld metal, DC+. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Requirement for E309T1-1, E309T1-4 maximum carbon 0.08%. Chart values for %C are for E309LT1-1, E309LT1-4. ⁽⁵⁾To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD. NOTE: Increase Voltage by 2V when using 100% CO₂.

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

BEFORE USE, READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

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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