

# ULTRACORE® STAINLESS FLUX-CORED WIRES

## Downhand and All Position Stainless Flux-Cored Wires

A family of stainless flux-cored wires that are preferred by welders for effortless slag removal, shiny weld deposits, trouble free feeding, while producing high strength deposits.

## PERFORMANCE PERFECTED

### Welders Choose UltraCore®

- Stable and consistent with CO<sub>2</sub> and mixed gas
- Smooth arc with minimal spatter
- Easy to control out-of-position
- Trouble free feeding and self releasing slag

### Shiny, Smooth Welds

- Clean base material post weld
- Flat welds; no undercut with stringer and weave techniques

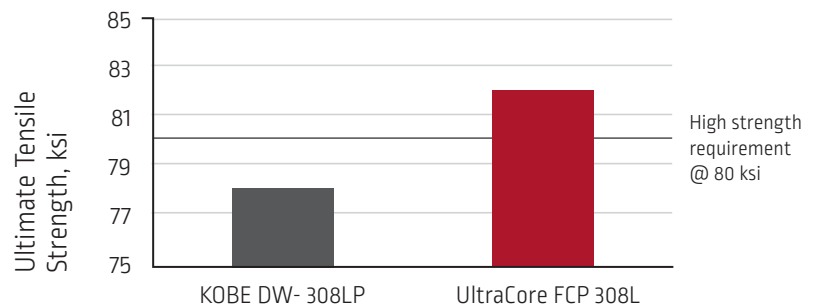
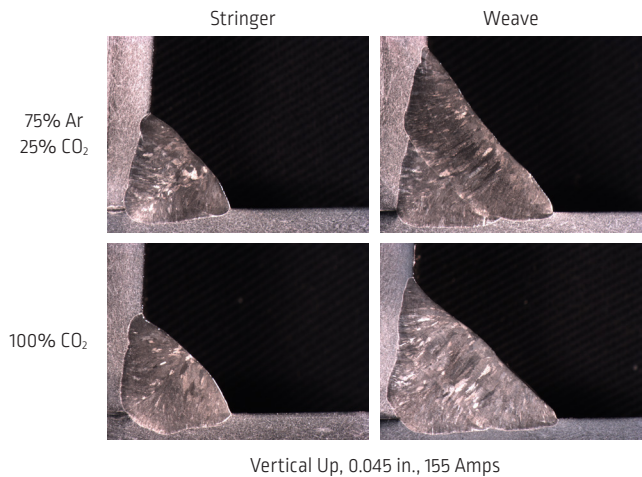
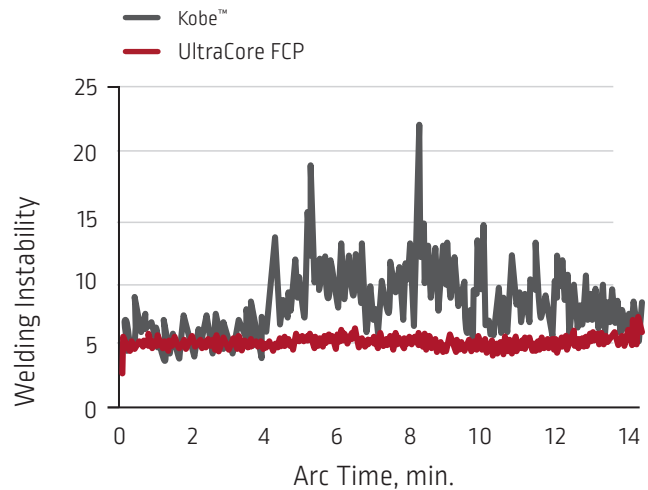
### Mechanical Robustness

- Dual classified - meets 308/308L, 309/309L and 316/316L
- Low carbon, high strength

### Made in the USA



UltraCore Stability Throughout The Weld Cycle



### 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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## DIAMETERS / PACKAGING

Diameter in (mm)	ULTRACORE FCP 308L	ULTRACORE FCP 309L	ULTRACORE FCP 316L
	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)
0.045 (1.1)	ED027949	ED033010	ED033012
1/16 (1.6)	ED027950	ED033011	ED033013

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.22/A5.22M: 2012

		Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Ferrite Number
ULTRACORE FCP 308L	Requirements - AWS E308LT1-1, E308LT1-4 AWS E308T1-1, E308T1-4	Not Specified Not Specified	520 (75) min 550 (80) min	35 min	Not Specified Not Specified
	Typical Results <sup>(3)</sup> - As-Welded with 100% CO <sub>2</sub> As-Welded with 75% Ar/25% CO <sub>2</sub>	386 (56) 393 (57)	566 (82) 572 (83)	40 39	7-11 8-12
ULTRACORE FCP 309L	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 <sup>(3)</sup> - As-Welded with 100% CO <sub>2</sub> As-Welded with 75% Ar/25% CO <sub>2</sub>	434 (63) 450 (65)	565 (82) 593 (86)	33 33	* *
ULTRACORE FCP 316L	Requirements - AWS E316LT1-1, E316LT1-4 AWS E316T1-1, E316T1-4	Not Specified Not Specified	520 (75) min 550 (80) min	30 min	Not Specified Not Specified
	Typical Results <sup>(3)</sup> - As-Welded with 100% CO <sub>2</sub> As-Welded with 75% Ar/25% CO <sub>2</sub>	414 (60) 421 (65)	552 (80) 565 (82)	34 34	6-8 8-11

## DEPOSIT COMPOSITION<sup>(1)</sup> – As Required per AWS A5.22/A5.22M:2012

		%C <sup>(4)</sup>	%Mn	%Si	%S	%P
ULTRACORE FCP 308L	Requirements - AWS E308LT1-1 & E308LT1-4	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max
	Typical Results <sup>(3)</sup> - As-Welded with 100% CO <sub>2</sub> As-Welded with 75% Ar/25% CO <sub>2</sub>	≤ 0.03 ≤ 0.03	1.2-1.3 1.4-1.5	0.6-0.7 0.7-0.8	≤ 0.01 ≤ 0.01	≤ 0.02 ≤ 0.02
		%Ni	%Cr	%Mo	%Cu	%Bi
	Requirements - AWS E308LT1-1 & E308LT1-4	9.0-11.0	18.0-21.0	0.75 max	0.75 max	-
ULTRACORE FCP 309L	Typical Results <sup>(3)</sup> - As-Welded with 100% CO <sub>2</sub> As-Welded with 75% Ar/25% CO <sub>2</sub>	9.5-9.9 9.7-9.9	18.0-18.6 18.5-19.0	≤ 0.20 ≤ 0.20	≤ 0.25 ≤ 0.25	0.01-0.02 0.01-0.02
		%C <sup>(4)</sup>	%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 <sup>(3)</sup> - As-Welded with 100% CO <sub>2</sub> As-Welded with 75% Ar/25% CO <sub>2</sub>	≤ 0.03 ≤ 0.03	1.0 1.0	0.8 0.9	≤ 0.01 ≤ 0.01	≤ 0.02 ≤ 0.02
ULTRACORE FCP 316L		%Ni	%Cr	%Mo	%Cu	%Bi
	Requirements - AWS E316LT1-1 & E316LT1-4	12.0-14.0	22.0-25.0	0.75 max	0.75 max	-
	Typical Results <sup>(3)</sup> - As-Welded with 100% CO <sub>2</sub> As-Welded with 75% Ar/25% CO <sub>2</sub>	12.8-13.2 12.9-13.3	23.6-23.9 23.9-24.1	≤ 0.20 ≤ 0.20	≤ 0.25 ≤ 0.25	0.01-0.02 0.01-0.02
		%C <sup>(4)</sup>	%Mn	%Si	%S	%P
ULTRACORE FCP 316L	Requirements - AWS E316LT1-1 & E316LT1-4	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max
	Typical Results <sup>(3)</sup> - As-Welded with 100% CO <sub>2</sub> As-Welded with 75% Ar/25% CO <sub>2</sub>	≤ 0.03 ≤ 0.03	1.0 1.1	0.6 0.7	≤ 0.01 ≤ 0.01	≤ 0.02 ≤ 0.02
		%Ni	%Cr	%Mo	%Cu	%Bi
	Requirements - AWS E316LT1-1 & E316LT1-4	11.0-14.0	17.0-20.0	2.0-3.0	0.75 max	-
ULTRACORE FCP 316L	Typical Results <sup>(3)</sup> - As-Welded with 100% CO <sub>2</sub> As-Welded with 75% Ar/25% CO <sub>2</sub>	12.3-12.5 12.3-12.5	18.0-18.5 18.5-19.0	2.5-2.8 2.5-2.8	≤ 0.25 ≤ 0.25	0.02-0.03 0.02-0.03

<sup>(1)</sup> Typical all weld metal, DC+. <sup>(2)</sup> Measured with 0.2% offset. <sup>(3)</sup> See test results disclaimer below <sup>(4)</sup> Requirement for E308T1-1, E308T1-4, E309T-1, E309T-4, E316T1-1, E316T1-4 maximum carbon 0.08%. Chart values for %C are for E308LT1-1, E308LT1-4, E309LT1-1, E309LT1-4, E316LT1-1, E316LT1-4. <sup>(5)</sup> Typical Ferrite number range to come NOTE: Increase voltage by 2V when using 100% CO<sub>2</sub>.

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/m<sup>3</sup> maximum exposure guideline for general welding fume. BEFORE USE, READ AND UNDERSTAND THE MATERIAL SAFETY DATA SHEET (MSDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

### CUSTOMER ASSISTANCE POLICY

The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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