

# TECH-ROD® 309/309L-16

Stainless · AWS E309-16, E309L-16

## KEY FEATURES

- Flux coating provides smooth arc transfer in all welding positions, except vertical down
- Q2 Lot® - Certificate showing actual deposit composition and ferrite number (FN) by ferrite scope available online

## WELDING POSITIONS

All, except vertical down

## CONFORMANCES

**AWS A5.5:** E309-16, E309L-16  
**ASME SFA-5.4:** E309-16, E309L-16

## TYPICAL APPLICATIONS

- Designed for joining stainless steel to mild or low alloy steel
- Industrial & General Fabrication

## DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	8 lb (3.6 kg) Easy Open Can 24 lb (10.8 kg) Master Carton	10 lb (4.5 kg) Easy Open Can 30 lb (13.5 kg) Master Carton
3/32 [2.4]	12 [300]	EL309L16093632	EL309L16125634 EL309L16156634 EL309L16187634
1/8 [3.2]	14 [350]		
5/32 [4.0]	14 [350]		
3/16 [4.8]	14 [350]		

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.4

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %
<b>Requirements</b> AWS E309-16 AWS E309L-16	Not Specified Not Specified	550 (80) min 520 (75) min	30 min 30 min
<b>Typical Results<sup>(3)</sup></b> - As-Welded	455-470 (66-68)	580-600 (84-87)	35-44

## DEPOSIT COMPOSITION<sup>(1)</sup> – As Required per AWS A5.4

	%C <sup>(4)</sup>	%Cr	%Ni	%Mo	%Mn
<b>Requirements</b> - AWS E309L-16	0.04 max	22.0-25.0	12.0-14.0	0.75 max	0.5-2.5
<b>Typical Results<sup>(5)</sup></b>	0.02-0.04	23.0-24.4	13.0-13.4	0.04-0.14	1.8-2.3
	%Si	%P	%S	%Cu	FN
<b>Requirements</b> - AWS E309L-16	1.00 max	0.04 max	0.03 max	0.75 max	Not Specified
<b>Typical Results<sup>(5)</sup></b>	0.56-0.79	≤0.03	≤0.02	≤0.16	10-18

## TYPICAL OPERATING PROCEDURES

Polarity <sup>(6)</sup>	Current (Amps)			
	3/32 in (2.4 mm)	1/8 in (3.2 mm)	5/32 in (4.0 mm)	3/16 in (4.8 mm)
DC+	40-70	60-100	90-140	120-185
AC	40-70	60-100	90-140	120-185

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer. <sup>(4)</sup>AWS Requirement for E309-16 is 0.15% max. carbon. <sup>(5)</sup>Preferred polarity is listed first.

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 SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

*Safety Data Sheets (SDS) and Certificates of Conformance are available on our website at [www.lincolnelectric.com](http://www.lincolnelectric.com)*

FUMES AND GASES can be hazardous to your health.

- Fumes from the normal use of this product contain significant quantities of potentially hazardous compounds. See consumable product label/insert.
- Keep your head out of the fumes.
- Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area.
- An approved respirator should be used unless exposure assessments are below applicable exposure limits.

#### 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

The business of Lincoln Electric is manufacturing and selling high quality welding equipment, automated welding systems, consumables, and cutting equipment. Our challenge is to meet the needs of our customers, who are experts in their fields, and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or technical information about their use of our products. Our employees respond to inquiries to the best of their ability based on information and specifications 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, or to provide engineering advice in relation to a specific situation. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or communications. Moreover, the provision of such information or technical information does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or technical information, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose or any other equivalent or similar warranty is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the definition of specifications, and the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

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