

# Grinox® 10

**Stainless • AWS E316L-16**

## Key Features

- ▶ Grinox® 10 features good resistance to intergranular corrosion up to 400°C and good resistance to pitting corrosion into environments containing non-oxidizing acids.
- ▶ Good resistance to scaling in presence of air and oxidizing combustion gases up to 800°C.

## Conformances

AWS A5.4 E316L-16

CWB Approved according to CSA W48-14

## Welding Positions

All, except vertical down

## Typical Applications

- ▶ Type 18%Cr - 12%Ni - 2.5%Mo stainless steel, such as Type 316, 316L and also AISI 316 L Type ASTM: A 182 Gr. F 316L, A 213 Gr. TP 316L, A296/A351 Gr.CF8 M, A314 Type 316 L and similars.
- ▶ Equipment, tubing and vessel Manufacturing for Chemical, Food & Beverage, Textile and Pharmaceutical industries.

## DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	10 lb Capsule (4.54 kg) 30 lb Master (13.62 kg)
3/32 (2.4)	12 (305)	55737
1/8 (3.2)	14 (350)	55738
5/32 (4.0)	14 (350)	55739

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

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J(ft*lb) @ °C (°F)
Requirements AWS E316L-16	Not Specified	483 (70) min.	30 min.	Not Specified
Typical Results <sup>(3)</sup> : As-Welded, 1/8" (3.2 mm) Electrode Diameter	Not Specified	564(82)	49	Not Specified

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

	%C	%Mn	%Si	%P	%S
Requirements AWS E316L-16	0.04 max.	0.50 – 2.5	0.90 max.	0.04 max.	0.03 max.
Typical Results <sup>(3)</sup>	0.035	0.832	0.610	0.034	0.022
	%Ni	%Cr	%Mo	%Cu	
Requirements AWS E316L-16	11.00 – 14.00	17.0 – 20.0	2.00 – 3.00	0.75 max.	
Typical Results <sup>(3)</sup>	11.362	18.109	2.626	0.127	

## TYPICAL OPERATING PROCEDURES

Polarity <sup>(5)</sup>	3/32 in (2.4 mm)	Current (Amps) 1/8 in (3.2 mm)	5/32 (4.0 mm)
D.C. + / A.C.	70 – 85	85 – 110	110 – 140

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

(1)Typical all weld metal. (2)Measured with 0.2% offset. (3)See test results disclaimer on next page. (5) Preferred polarity is listed first.

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

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.

Lincoln Electric is a responsive manufacturer, but 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.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to [www.lincolnelectric.com](http://www.lincolnelectric.com) for any updated information.

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**LINCOLN ELECTRIC COMPANY OF CANADA**  
939 Gana Court • Mississauga • Ontario • L5S 1N9  
Phone: +1.905.565.5600 • [www.lincolnelectric.ca](http://www.lincolnelectric.ca)

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