Excalibur® 316/316L-16

AWS E316-16, E316L-16 • Stainless

Key Features

- Flux coating provides smooth arc transfer in all welding positions, except vertical down
- Molybdenum grade for increased corrosion resistance
- Q2 Lot® - Certificate showing actual deposit composition and calculated ferrite number (FN) available online
- Designed with low carbon levels to help eliminate carbide precipitation in high temperature service

Typical Applications

- Molybdenum bearing austenitic stainless steels
- Type 316 and 316L

Conformances

AWS A5.4/A5.4M: 2006	E316-16, E316L-16
ASME SFA-A5.4:	E316-16, E316L-16
ABS:	E316-16, E316L-16
CWB/CSA W48-06:	E316L-16
MIL-E-22200/2:	MIL-316-16, MIL-316L-16

Welding Positions

All, except vertical down

DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	8 lb (3.6 kg) Easy Open Can	10 lb (4.5 kg) Easy Open Can
3/32 (2.4)	12 (300)	ED033104	
1/8 (3.2)	14 (350)		ED033105
5/32 (4.0)	14 (350)		ED033106
3/16 (4.8)	14 (350)		ED033107

MECHANICAL PROPERTIES[1] – *As Required per AWS A5.4/A5.4M: 2006*

	Yield Strength[2] MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Ferrite Number
Requirements				
AWS E316-16	Not Specified	520 (75) min.	30 min.	Not Specified
AWS E316L-16	Not Specified	490 (70) min.	30 min.	Not Specified
Typical Performance[3] - As-Welded	425-450 (62-65)	560-585 (81-85)	40-54	8-13

DEPOSIT COMPOSITION[1] – *As Required per AWS A5.4/A5.4M: 2006*

	%C[4]	%Cr	%Ni	%Mo	%Mn
Requirements - AWS E316L-16	0.04 max.	17.0-20.0	11.0-14.0	2.0-3.0	0.05-2.5
Typical Performance[3]	0.03-0.04	18.7-19.2	11.4-12.1	2.2-2.4	0.7-0.9
	%Si	%P	%S	%Cu	
Requirements - AWS E316L-16	1.00 max.	0.04 max.	0.03 max.	0.75 max.	
Typical Performance[3]	0.29-0.39	≤0.02	≤0.02	≤0.26	

TYPICAL OPERATING PROCEDURES

	Current (Amps)			
Polarity[5]	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

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 below. [4]AWS Requirement for E316-16 is 0.08% max. carbon. [5]Preferred polarity is listed first.

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

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 for any updated information.

THE LINCOLN ELECTRIC COMPANY
22801 St. Clair Avenue • Cleveland, OH • 44117-1199 • U.S.A.
Phone: +1.216.481.8100 • www.lincolnelectric.com

LINCOLN® ELECTRIC
THE WELDING EXPERTS®

Issue Date 01/12