

EXCALIBUR® 2594-16

Stainless ▪ AWS E2594-16

KEY FEATURES

- A super-duplex grade electrode that provides matching chemistry and mechanical property characteristics to wrought super-duplex alloys such as 2507 and Zeron 100, as well as to super-duplex casting alloys (ATSM A890)
- Welding heat input ranges between 1 to 2 ks/in are recommend
- High tensile and yield strength results, as well as superior resistance to Stress Cracking (SCC) and pitting corrosion
- Great corrosion resistance in a range of environments

WELDING POSITIONS

All, except vertical down

CONFORMANCES

| | |
|-----------------------------|----------|
| AWS A5.4/A5.4M: 2012 | E2594-16 |
| ASME SFA-A5.4: | E2594-16 |

TYPICAL APPLICATIONS

- Process Pipework
- Pumps and Valves
- Pressure Vessels
- Welding 2507 and Zeron 100 Duplex Stainless Steels

DIAMETERS / PACKAGING

| Diameter in (mm) | Length in (mm) | 8 lb (3.6 kg) Easy Open Can 24 lb (10.9 kg) Master Carton | 10 lb (4.5 kg) Easy Open Can 30 lb (13.6 kg) Master Carton |
|---------------------|-------------------|--|---|
| 3/32 (2.4) | 12 (305) | ED034989 | ED034990 ED034991 ED034992 |
| 1/8 (3.2) | 14 (355) | | |
| 5/32 (4.0) | 14 (355) | | |
| 3/16 (4.8) | 14 (355) | | |

DEPOSIT COMPOSITION⁽¹⁾

| | %C | %Cr | %Ni | %Mo | %Mn | %Si |
|--------------------------------------|----------|-------------|-------------|-----------|--------------|----------|
| Requirements AWS E2594-16 | 0.04 max | 24.0 - 27.0 | 8.0 - 10.5 | 3.5 - 4.5 | 0.5 - 2.0 | 1.00 max |
| Typical Results⁽²⁾ | 0.02 | 25.4 | 9.2 | 4.2 | 0.8 | 0.58 |
| | %P | %S | %N | %Cu | FN | |
| Requirements AWS E2594-16 | 0.04 max | 0.03 max | 0.20 - 0.30 | 0.75 max | Not Required | |
| Typical Results⁽²⁾ | 0.01 | 0.01 | 0.22 | 0.07 | 30 - 60 | |

TYPICAL OPERATING PROCEDURES

| Polarity ⁽⁵⁾ | 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+ | 40-80 | 75-110 | 95-150 | 130-200 |
| AC | 40-80 | 75-110 | 95-150 | 130-200 |

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾AWS Requirement for E316-16 is 0.08% max. carbon. ⁽⁵⁾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/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.

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.

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