

# LINCOLN® ER100S-1

Mild Steel ▪ AWS ER100S-1

## KEY FEATURES

- A low carbon, high manganese wire with nickel and molybdenum designed to weld high strength steels such as HY-80 and HSLA-80
- Delivers yield strength greater than 690 MPa (100 ksi)
- Capable of producing welds with 690 MPa (100 ksi) tensile strength
- Prior to using this material for ASME Boiler and Pressure Vessel Code Section III applications, please contact the Lincoln Electric Specials Department to receive a Certified Material Test Report (CMTR) which meets all requirements of NCA-3860
- Product is marked every 4 in. (101.6 mm) with AWS classification and LOT number for easy identification

## WELDING POSITIONS

All

## CONFORMANCES

<b>AWS A5.28/A5.28M:</b>	ER100S-1, ER110S-1
<b>ASME SFA-A5.28:</b>	ER100S-1, ER110S-1
<b>MIL-E-23765/2:</b>	MIL-100S-1

## TYPICAL APPLICATIONS

- HY-80 base material
- ASTM A514, A543, A724 and A782 quenched and tempered plate
- Various heat input conditions
- Military low alloy applications
- Nuclear Steam Generators and other components

## ASME IX QUALIFICATION

ASME IX Qualification:	QW432 F-No 6
	QW432 A-No 10

## DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Carton
3/32 (2.4)	ED034097
1/8 (3.2)	ED034098

## WIRE COMPOSITION - As Required per AWS A5.28/A5.28M

	%C	%Mn	%Si	%Ni	%Mo
<b>Requirements</b> - AWS ER100S-1	0.08 max	1.25-1.80	0.20-0.55	1.40-2.10	0.25-0.55
<b>Typical Results</b> <sup>(1)</sup>	0.05-0.06	1.63-1.69	0.46-0.50	1.88-1.96	0.43-0.45
	%Cr	%S	%P	%V	%Al
<b>Requirements</b> - AWS ER100S-1	0.30 max	0.010 max	0.010 max	0.05 max	0.10 max
<b>Typical Results</b> <sup>(1)</sup>	0.04-0.06	0.002-0.005	0.005-0.009	≤ 0.01	≤ 0.01
	%Ti	%Zr	%Cu	Total Others	
<b>Requirements</b> - AWS ER100S-1	0.10 max	0.10 max	0.25 max	0.50 max	
<b>Typical Results</b> <sup>(1)</sup>	0.03-0.04	≤ 0.01	0.11-0.14	-	

<sup>(1)</sup>See test results disclaimer

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.

*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.