LINCOLN® ER90S-B3

Low Alloy Steel · AWS ER90S-B3

KEY FEATURES

- B3 alloyed steel: 2.25% chromium, 1% molybdenum alloyed steel consumable designed for prolonged elevated temperature service up to 600°C (1112°F)
- Excellent corrosion resistance in refineries to sulfur bearing crude oil at 250°C-450°C (482°F-842°F)
- Q2 Lot®- Certificate showing actual wire chemistry and mechanical properties available online
- Weld metal chemistry is low in impurity elements allowing it to respect the X Factor (<15ppm) and J-factor (<120ppm)

CONFORMANCES

AWS A5.28: ER90S-B3

TYPICAL APPLICATIONS

- Petro-Chemical
- Power Plants
- Piping
- Turbine Casting
- Steam Chests
- Valve Bodies
- Boiler Superheaters
- Heat Exchangers
- Fractionators

WELDING POSITIONS

All

SHIELDING GAS

100% Argon

DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Plastic Tube 30 lb (13.6 kg) Master Carton
3/32 (2.4)	ED034358
1/8 (3.2)	ED034359

MECHANICAL PROPERTIES[1] – *As Required per AWS A5.28*

	Yield Strength[2] MPa (ksi)	Tensile MPa (ksi)	Elongation on 4d (%)	Charpy V-Notch @-28°C (-20°F) J (ft-lbf)	Hardness (Rockwell B)
Requirements - ER90S-B3	540 (78) min	620 (90) min	17 min	-	-
TIG (100% Argon)	575-620 (83-90)	690-725 (100-105)	22-24	250-264 (185-195)	95-97

WIRE COMPOSITION[1] – *As Required per AWS A5.28*

	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	%Cu
Requirements AWS ER90S-B3	0.07-0.12	0.40-0.70	0.40-0.70	0.025 max	0.025 max	2.30-2.70	0.20 max	0.90-1.20	0.35 max
Test Results[3]	0.10	0.56-0.58	0.53-0.54	0.003-0.004	0.005	2.40	0.03-0.04	1.02-1.04	0.06-0.08

[1]Typical all weld metal. [2]Measured with 0.2% offset. [3]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^3 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

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 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.

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