

9CRMO

Low Alloy, Copper Coated · AWS ER80S-B8

KEY FEATURES

- B8 alloyed steel: 9% chromium, 1% molybdenum martensitic alloy for elevated temperature service up to 600°C (1112°F)
- Designed for high strength and improved corrosion resistance in superheated steam, hot hydrogen gas and high sulphur crude oils where higher performance than 5% chromium, 0.5% molybdenum steels is required
- Weld metal chemistry is low in impurity elements allowing it to respect the X Factor (<15ppm) and J-factor (<120ppm)

WELDING POSITIONS

All

SHIELDING GAS

MIG 5-20% CO₂ /Argon
TIG 100% Argon*

**Also required as a purge for root passes*

CONFORMANCES

AWS A5.28: ER80S-B8
BS EN ISO 21952-A: CrMo9

TYPICAL APPLICATIONS

- Heat Exchangers
- Furnace Piping
- Pressure Vessels
- Oil Refineries
- Boiler superheater tubing

DIAMETERS / PACKAGING

Diameter mm (in)	5kg (11lb) Spool	15kg (33lb) Spool
1.2 (0.047)		M9CRMO-12
2.0 (5/64)	T9CRMO-20	
2.4 (3/32)	T9CRMO-24	
3.2 (1/8)	T9CRMO-32	

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.28/A5.28M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft-lbf) @20°C (68°F)
Requirements - AWS ER80S-B8	470 (68)	590 (86)	17	-
Typical Results ⁽³⁾				
TIG: PWHT 1hr @ 745°C (1373°F)	612 (89)	730 (106)	27	80 (59)

DEPOSIT COMPOSITION – As Required per AWS A5.28/A5.28M

	%C	%Mn	%Si	%S	%P
Requirements - AWS ER80S-B8	0.06-0.10	0.40-0.60	0.30-0.50	0.020 max	0.020 max
Typical Results ⁽³⁾	0.07	0.50	0.40	0.010	0.015
	%Cr	%Ni	%Mo	%Cu	
Requirements - AWS ER80S-B8	8.5-10.0	0.50 max	0.80-1.20	0.35 max	
Typical Results ⁽³⁾	9.0	0.10	0.90	0.10	

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout.

⁽⁵⁾Procedures in these areas are procedures for short circuiting mode using 100% CO₂. When using 75% Argon, 25% CO₂ for short circuit transfer, reduce voltage by 1 to 2 volts.

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.

TYPICAL OPERATING PROCEDURES

	Polarity	Diameter mm [in]	Current (Amps)	Voltage (Volts)
MIG	DC+	1.2 [0.047]	260	26
TIG	DC-	2.4 [3/32]	140	14

^(a)Typical all weld metal. ^(b)Measured with 0.2% offset. ^(c)See test results disclaimer ^(d)CTWD [Contact Tip to Work Distance]. Subtract 1/4 in [6.4 mm] to calculate Electrical Stickout.
^(e)Procedures in these areas are procedures for short circuiting mode using 100% CO₂. When using 75% Argon, 25% CO₂ for short circuit transfer, reduce voltage by 1 to 2 volts.

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.

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