

9CRMV-N

Low Alloy Steel ■ AWS ER90S-B9

KEY FEATURES

- Improved long term creep properties
- Can weld equivalent (P91) 9CrMoV steels

CONFORMANCES

AWS A5.28	ER90S-B9
BS EN ISO 21952-A	W CrMo91

WELDING POSITIONS

All

TYPICAL APPLICATIONS

- Power Plants
- Elevated Temperature Piping
- Turbine Castings
- Oil Refineries

DIAMETERS / PACKAGING

Diameter mm (in)	5 kg (11 lb) Tube
2.4 (3/32)	ED033377, T9CRMV-N-24*
3.2 (1/8)	ED033378, T9CRMV-N-32*

*The Metrode part number will be replacing the current EDO numbers after the inventory has been depleted.

MECHANICAL PROPERTIES⁽¹⁾ - As Required per AWS A5.28

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %		Charpy V-Notch J (ft·lbf) @ 20°C (68°F)	Hardness HV ₁₀ ⁽⁴⁾
			4.0 dia.	5.0 dia.		
Requirements AWS ER90S-B9	415 (60) min	620 (90) min	16 min	17 min	–	–
Typical Results⁽³⁾ Stress-Relieved @ 760°C (1400°F) for 2 hrs	675 (98)	780 (113)	22	19	220 (162)	265

WIRE COMPOSITION⁽¹⁾ - As Required per AWS A5.28

	%C	%Mn	%Si	%S	%P	%Cr	%Ni
Requirements AWS ER90S-B9	0.08 - 0.13	0.40 - 0.80	0.15 - 0.50	0.010 max	0.010 max	8.5 - 9.5	0.40 - 0.80
Typical Results⁽³⁾	0.10	0.50	0.25	0.006	0.008	8.7	0.60
	%Mo	%Nb	%V	%N	%Cu	%Al	
Requirements AWS ER90S-B9	0.85 - 1.10	0.03 - 0.08	0.15 - 0.25	0.03 - 0.07	0.10 max	0.40 max	
Typical Results⁽³⁾	1.00	0.05	0.20	0.05	0.03	<0.01	

TYPICAL OPERATING PROCEDURES

Polarity	Amperage mm (in)	
	2.5 (3/32)	3.2 (1/8)
DC-	70 - 110	80 - 140

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Industry specific data, not required by AWS.
NOTE: Additional test data available upon request.

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

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