

Excalibur® 10018-D2 MR®

AWS E10018-D2 H4R • Low Alloy, Low Hydrogen

Typical Applications

- ▶ Chromium-molybdenum and other low alloy steels, including AISI 4130, 4140, 8630 and ASTM A182 and A336 Grades F22
- ▶ Carbon-manganese and other low alloy steels
- ▶ Offshore and subsea components
- ▶ Process piping
- ▶ Meets NACE MR0175/ISO15156-2

Conformances

AWS A5.5/A5.5M: 2006	E10018-D2 H4R
ASME SFA-A5.5:	E10018-D2 H4R
ABS:	3YQ620 H5
Lloyd's Register:	3Y62 H5
DNV Grade:	3Y62 H5
CWB/CSA W48-06:	E6918-D2

Key Features

- ▶ Capable of producing weld deposits that exceed 690 MPa (100 ksi) yield strength after 12 hours at 635°C (1175°F)
- ▶ Premium arc performance
- ▶ Q2 Lot® - Certificate showing actual deposit chemistry available online
- ▶ Easy strike and re-strike
- ▶ Effortless slag removal

Welding Positions

All, except vertical down

DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	25 lb (11.3 kg) Easy Open Can	50 lb (22.7 kg) Easy Open Can
3/32 (2.4)	12 (300)	ED033162	ED033163 ED033164
1/8 (3.2)	14 (350)		
5/32 (4.0)	14 (350)		

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.5/A5.5M: 2006

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @ -51°C (-60°F)	Hardness ⁽⁴⁾ HV ₁₀
Requirements - AWS E10018-D2 H4R	600 (87) min.	690 (100) min.	16 min.	27 (20) min.	Not Specified
Typical Results⁽³⁾ - Stress-Relieved 1 hr @ 620°C (1150°F)	650-715 (94-104)	725-780 (105-113)	22-25	56-69 (41-51)	219-242
Welded on AISI 4130 Steel					
Typical Results⁽³⁾ - Stress-Relieved 12 hrs @ 620°C (1150°F)⁽⁴⁾	560-580 (81-84)	650-675 (94-98)	24-25	47-68 (35-50)	210-214

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%P
Requirements - AWS E10018-D2 H4R	0.15 max.	1.65-2.00	0.80 max.	0.03 max.
Typical Results⁽³⁾	0.08-0.12	1.69-1.91	0.35-0.49	0.01-0.02
	%S	%Ni	%Mo	Diffusible Hydrogen (mL/100g weld deposit)
Requirements - AWS E10018-D2 H4R	0.03 max.	0.90 max.	0.25-0.45	4.0 max.
Typical Results⁽³⁾	≤0.01	0.68-0.77	0.34-0.39	2-3

TYPICAL OPERATING PROCEDURES

Polarity	3/32 in (2.4 mm)	Current (Amps) 1/8 in (3.2 mm)	5/32 in (4.0 mm)
DC+	60-110	85-160	110-210
AC	65-120	90-170	115-220

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer below. ⁽⁴⁾Industry specific data, not required by AWS. ⁽⁵⁾Preferred polarity is listed first.
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

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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