

# INNERSHIELD® NR®-232-H

Mild Steel, All Position ■ AWS E71T-8-H8, E71T8-A2-CS3-H8

## KEY FEATURES

- High deposition rates for out-of-position welding
- Penetrating arc
- Fast freezing, easy to remove slag system

## CONFORMANCES

<b>AWS A5.20/A5.20M:</b>	E71T-8-H8
<b>AWS A5.36:</b>	E71T8-A2-CS3-H8
<b>ASME SFA-A5.20:</b>	E71T-8-H8
<b>CWB/CSA W48-06:</b>	E491T-8-A3-CS3-H8

## WELDING POSITIONS

All

## TYPICAL APPLICATIONS

- Structural fabrication, including those subject to seismic requirements
- General plate fabrication
- Machinery parts, tanks, hoppers, racks and scaffolding

## DIAMETERS / PACKAGING

Diameter in (mm)	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)
0.068 (1.7)	ED036677
0.072 (1.8)	ED036678

## MECHANICAL PROPERTIES<sup>(1)</sup>

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Hardness Rockwell B	Charpy V-Notch / J (ft-lbf) @ -29°C (-20°F)
<b>Requirements</b> - AWS E71T-8-H8	400 (58) min	480-655 (70-95)	22 min	–	27 (20) min
<b>Typical Results<sup>(3)</sup></b> - As-Welded	460-520 (66-75)	575-615 (83-89)	25-31	87-90	47-75 (35-55)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer

**DEPOSIT COMPOSITION<sup>(1)</sup>**

	%C	%Mn	%Si	%S	%P	%Al	Diffusible Hydrogen (mL/100g weld deposit)
<b>Requirements - AWS E71T-8-H8</b>	0.30 max	1.75 max	0.60 max	0.03 max	0.03 max	1.8 max	8.0 max
<b>Typical Results<sup>(3)</sup></b>	0.16-0.18	0.61-0.72	0.26-0.33	≤0.01	≤0.01	0.5-0.8	5-7

**TYPICAL OPERATING PROCEDURES**

Diameter, Polarity	CTWD <sup>(6)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage <sup>(7)</sup> (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
0.068 in (1.7 mm), DC-	19-32 (3/4-1 1/4)	2.8 (110)	18-19	195	2.3 (5.0)	1.8 (3.9)	78
		3.3 (130)	19-21	225	2.8 (6.2)	2.0 (4.6)	74
		3.8 (150)	19-21	250	3.2 (7.1)	2.4 (5.3)	75
		4.3 (170)	20-22	270	3.5 (7.8)	2.8 (6.1)	78
		5.0 (195)	23-24	300	4.3 (9.4)	3.2 (7.0)	74
		6.4 (250)	23-24	350	5.4 (11.8)	4.0 (9.0)	76
		7.4 (320)	25-27	400	6.9 (15.2)	5.2 (11.4)	75
0.072 in (1.8 mm), DC-	19-32 (3/4-1 1/4)	2.0 (80)	16-18	130	1.8 (4.0)	1.5 (3.3)	83
		3.5 (140)	18-21	225	3.1 (6.8)	2.5 (5.5)	81
		3.9 (155)	19-22	240	3.3 (7.2)	2.7 (6.0)	83
		4.3 (170)	20-23	255	3.6 (8.0)	2.9 (6.5)	81
		6.4 (250)	22-24	315	5.3 (11.7)	4.3 (9.6)	82
		7.4 (290)	23-25	350	6.2 (13.6)	5.0 (11.0)	81

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer  
 NOTE: AWS D1.8 structural steel seismic supplement test data can be found on this product at [www.lincolnelectric.com](http://www.lincolnelectric.com).

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.

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