

Innershield® NR-5

Mild Steel, Flat & Horizontal • AWS E70T-3

Key Features

- ▶ Fast travel speeds
- ▶ Increased resistance to porosity
- ▶ Consistent bead appearance

Typical Applications

- ▶ Single pass welding on up to 48 mm (3/16 in) thicknesses
- ▶ 3 o'clock welding positions
- ▶ Welds with copper back-up
- ▶ Propane cylinders
- ▶ Robotics/hard automation

Conformances

AWS A5.20/A5.20M: 2005 E70T-3
ASME SFA-A5.20: E70T-3

Welding Positions

Flat & Horizontal

Warning

- ▶ NR-5 is NOT recommended for welding multiple passes.

Maximum Plate Thickness

Diameter - in (mm)	Maximum Plate Thickness - in (mm)
3/32 (2.4)	3/16 (4.8)
0.120 (3.0)	3/16 (4.8)

DIAMETERS / PACKAGING

Diameter in (mm)	600 lb (272 kg) Speed-Feed® Reel	600 lb (272 kg) Speed-Feed® Drum
3/32 (2.4)	ED012698	ED012699
0.120 (3.0)		

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.20/A5.20M: 2005

	Transverse Tensile Strength	Longitudinal	Hardness
	MPa (ksi)	Bend Test	Rockwell B
Requirements - AWS E70T-3	480 (70) min.	180° over 3/4 in Radius No openings exceeding 1/8 in	–
Typical Results ⁽²⁾	505-560 (75-80)	Passed	99

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%S	%P	%Al	%Ti
Requirements - AWS E70T-3	Not Specified						
Typical Results ⁽²⁾	0.17-0.22	0.95-1.11	0.34-0.40	0.008-0.02	0.01-0.02	0.07-0.12	0.40-0.49

TYPICAL OPERATING PROCEDURES

Diameter, Polarity	CTWD mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
3/32 in (2.4 mm), DC+	32 (1-1/4)	2.5 (100)	22-23	340	4.5 (9.9)	3.5 (7.8)	77
		3.8 (150)	23-24	435	6.7 (14.8)	5.6 (12.3)	83
		5.1 (200)	24-25	510	9.0 (19.8)	7.7 (16.9)	85
		6.4 (250)	25-26	575	11.2 (24.7)	9.7 (21.4)	87
0.120 in (3.0 mm), DC+	32 (1-1/4)	3.3 (130)	22-23	500	8.2 (18.0)	7.6 (16.7)	93
		4.2 (165)	23-24	600	10.4 (23.0)	9.5 (20.9)	91
		6.5 (205)	24-25	700	12.9 (28.5)	11.6 (25.6)	90
		6.5 (255)	25-26	800	16.1 (35.5)	14.3 (31.5)	90

⁽¹⁾Typical all weld metal. ⁽²⁾See test results disclaimer below.

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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