

Innershield® NR-311

AWS E70T-7 • Mild Steel, Flat & Horizontal

Typical Applications

- ▶ Recommended for fillet, lap and butt welds on 3.2 mm (1/8 in) and thicker steel, including some low alloy steels
- ▶ General fabrication
- ▶ Assembly welding

Conformances

AWS A5.20/A5.20M: 2005	E70T-7
ASME SFA-A5.20:	E70T-7
ABS:	E70T-7
CWB/CSA W48-06:	E492T-7

Key Features

- ▶ High deposition rates and fast travel speeds
- ▶ Easy slag removal
- ▶ Optimal toe wash-in
- ▶ Deep penetration
- ▶ High resistance to cracking
- ▶ Welds on lightly rusted or primed plate

Welding Positions

Flat & Horizontal

DIAMETERS / PACKAGING

Diameter in (mm)	14 lb (6.4 kg) Coil 56 lb (25.4 kg) Master Carton	25 lb (11.3 kg) Steel Spool	50 lb (22.7 kg) Coil	600 lb (272 kg) Speed-Feed® Reel	600 lb (272 kg) Speed-Feed® Drum
5/64 (2.0)	ED014464	ED030649	ED014459		ED012628
3/32 (2.4)			ED012629		
7/64 (2.8)			ED012632	ED012633	

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

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Hardness Rockwell B
Requirements - AWS E70T-7	400 (58) min.	480-655 (70-95)	22 min.	–
Typical Results ⁽³⁾ - As-Welded	420-475 (61-69)	600-645 (87-93)	23-26	88-92

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.20/A5.20M: 2005

	%C	%Mn	%Si	%S	%P	%Al
Requirements - AWS E70T-7	0.30 max.	1.75 max.	0.60 max.	0.03 max.	0.03 max.	1.8 max.
Typical Results ⁽³⁾	0.25-0.29	0.44-0.51	0.09-0.12	≤0.01	≤0.01	1.4-1.7

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 (%)
5/64 in (2.0 mm), DC-	38 (1 1/2)	2.5 (100)	20-23	190	2.9 (6.4)	2.3 (5.0)	78
		4.1 (160)	24-28	275	4.7 (10.3)	3.6 (8.0)	78
		6.1 (240)	25-29	355	7.0 (15.4)	5.6 (12.4)	80
		7.6 (300)	27-31	410	8.8 (19.3)	7.2 (15.8)	82
3/32 in (2.4 mm), DC-	45 (1 3/4)	1.9 (75)	20-23	200	3.2 (7.0)	2.5 (5.4)	77
		3.4 (135)	23-26	300	5.9 (13.1)	4.6 (10.2)	78
		3.8 (150)	24-27	325	6.6 (14.6)	5.2 (11.4)	78
		5.3 (210)	26-28	400	9.3 (20.4)	7.5 (16.5)	81
6.9 (270)	28-30	450	11.9 (26.2)	10.0 (22.0)	84		
7/64 in (2.8 mm), DC-	45 (1 3/4)	2.5 (100)	23-26	325	5.4 (12.0)	4.5 (10.0)	83
		3.7 (145)	25-27	400	8.1 (17.8)	6.6 (14.5)	82
		4.4 (175)	26-28	450	9.8 (21.5)	8.2 (18.0)	83
		6.1 (240)	30-32	550	13.4 (29.5)	11.6 (25.5)	86
7.6 (300)	32-34	625	16.7 (36.9)	15.0 (33.0)	89		

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾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

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