INNERSHIELD® NR®-211-MP

Mild Steel, All Position ▪ AWS E71T-11, E71T11-AZ-CS3

KEY FEATURES

- Versatile welding capability on a variety of base materials
- High operator appeal and good bead appearance
- Easy slag removal
- Fast freezing characteristics accommodate poor fit-up

WELDING POSITIONS

All, except 3/32 in (2.4 mm) diameter

MAXIMUM PLATE THICKNESS

Diameter - in (mm)	Maximum Plate Thickness - in (mm)
0.030 (0.8)	5/16 (7.9)
0.035 (0.9)	5/16 (7.9)
0.045 (1.1)	5/16 (7.9)
0.068 (1.7)	1/2 (12.7)
5/64 (2.0)	1/2 (12.7)
3/32 (2.4)	1/2 (12.7)

CONFORMANCES

AWS A5.20:	E71T-11
AWS A5.36:	E71T11-AZ-CS3
ASME SFA-A5.20:	E71T-11
ABS:	E71T-11*
CWB/CSA W48-06:	E491T-11-H16
DB:	EN 758 T42 Z S N 1
TUV:	EN 758 T42 Z S N 1
EN ISO 17632-B	T49ZT11-1NA-H15
JIS Z 3313:	T 49 TG-1 N S

**Except 0.030 in (0.8 mm) and 0.035 in (0.9 mm) diameters*

TYPICAL APPLICATIONS

- Sheet or thin gauge metal
- Galvanized sheet metal
- Robotic / hard automation
- General fabrication
- 5/16 in. maximum plate thickness for 0.045 in. and smaller diameters
- 1/2 in. maximum plate thickness for 0.068 - 3/32 in. diameters

DIAMETERS / PACKAGING

Diameter in (mm)	1 lb (0.5 kg) Plastic Spool 5 lb (2.3 kg) Master Carton	10 lb (4.5 kg) Plastic Spool	14 lb (6.4 kg) Coil 56 lb (25.4 kg) Master Carton
0.030 (0.8)	ED031448	ED033130	
0.035 (0.9)	ED030584	ED016354	
0.045 (1.1)		ED016363	
0.068 (1.7)			ED012506
5/64 (2.0)			ED012508
3/32 (2.4)			

Diameter in (mm)	25 lb (11.3 kg) Steel Spool	50 lb (22.7 kg) Coil	500 lb (227 kg) Accu-Trak® Drum
0.030 (0.8)			
0.035 (0.9)	ED030637		ED029838
0.045 (1.1)	ED030638		ED029028
0.068 (1.7)	ED030641	ED012507	
5/64 (2.0)	ED030645	ED012509	
3/32 (2.4)		ED013869	

MECHANICAL PROPERTIES[1]

	Yield Strength[2] MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Hardness Rockwell B
Requirements - AWS E71T-11	400 (58) min	480-655 (70-95)	20 min	–
Typical Results[3]	435-475 (63-69)	605-645 (88-94)	22-25	89-92

[1]Typical all weld metal. [2]Measured with 0.2% offset. [3]See test results disclaimer

DEPOSIT COMPOSITION[1]

	%C	%Mn	%Si	%S	%P	%Al
Requirements - AWS E71T-11	0.30 max	1.75 max	0.60 max	0.03 max	0.03 max	1.8 max
Typical Results[3]	0.23-0.26	0.57-0.66	0.17-0.26	≤0.01	≤0.01	1.3-1.6

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 (%)
0.030 in (0.8 mm), DC-	13 (1/2)	1.3 (50)	13-14	30	0.2 (0.5)	0.2 (0.4)	81
		2.5 (100)	13-14	60	0.5 (1.1)	0.4 (0.8)	75
		3.8 (150)	14-15	80	0.7 (1.6)	0.6 (1.2)	78
		5.1 (200)	14-15	100	1.0 (2.1)	0.8 (1.7)	81
		6.4 (250)	15-16	130	1.2 (2.6)	1.0 (2.1)	80
		7.6 (300)	18-19	140	1.4 (3.2)	1.2 (2.6)	81
0.035 in (0.9 mm), DC-	13-16 (1/2-5/8)	1.3 (50)	14-15	30	0.4 (0.8)	0.3 (0.7)	81
		1.8 (70)	15-16	60	0.5 (1.2)	0.5 (1.0)	83
		2.8 (110)	16-17	115	0.7 (1.6)	0.6 (1.3)	78
		3.8 (150)	17-18	130	1.0 (2.2)	0.8 (1.7)	78
		5.1 (200)	18-19	155	1.4 (3.0)	1.1 (2.5)	84
		7.0 (275)	20-21	155	2.0 (4.4)	1.5 (3.4)	78
0.045 in (1.1 mm), DC-	16 (5/8)	1.8 (70)	15-16	120	0.7 (1.6)	0.5 (1.1)	69
		2.3 (90)	16-17	140	1.0 (2.2)	0.8 (1.7)	77
		2.8 (110)	17-18	160	1.2 (2.7)	1.0 (2.3)	85
		3.3 (130)	18-19	170	1.5 (3.2)	1.2 (2.7)	84
0.068 in (1.7 mm), DC-	19-32 (3/4-1 1/4)	1.0 (40)	15-16	125	1.0 (2.1)	0.8 (1.7)	81
		1.9 (75)	18-19	190	1.8 (4.0)	1.5 (3.4)	85
		3.3 (130)	20-21	270	3.2 (7.0)	2.8 (6.1)	88
		4.4 (175)	23-24	300	4.3 (9.4)	3.8 (8.4)	89
5/64 in (2.0 mm), DC-	19-32 (3/4-1 1/4)	1.3 (50)	16-17	180	1.6 (3.5)	1.3 (2.9)	83
		1.9 (75)	18-19	235	2.4 (5.3)	2.0 (4.5)	85
		3.0 (120)	20-21	290	3.8 (8.4)	3.4 (7.4)	88
		4.1 (160)	22-23	325	5.1 (11.2)	4.5 (10.0)	89
3/32 in (2.4 mm), DC-	19-32 (3/4-1 1/4)	1.3 (50)	16-17	245	2.3 (5.0)	1.9 (4.2)	84
		1.9 (75)	19-20	305	3.4 (7.5)	2.9 (6.4)	85
		2.5 (100)	20-21	365	4.5 (10.0)	3.9 (8.7)	87
		3.3 (130)	22-23	400	5.9 (12.9)	5.1 (11.3)	88

[1]Typical all weld metal. [2]Measured with 0.2% offset. [3]See test results disclaimer

Safety Data Sheets (SDS) 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.

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