

# INNERSHIELD® NR®-555

Low Alloy, All Position ▪ AWS E81T8-G, E81T8-A5-K8-H8

## KEY FEATURES

- Self-shielded electrode designed for welding in structural applications
- Welder friendly operability and flat bead face in out-of-position fillets and groove welds
- Meets AWS D1.8 seismic lot waiver requirements
- ProTech® foil bag packaging shields against moisture, prevents rust and prolongs storage life

## WELDING POSITIONS

All

## CONFORMANCES

<b>AWS A5.29:</b>	E81T8-G
<b>AWS A5.36:</b>	E81T8-A5-K8-H8
<b>AWS D1.8</b>	
<b>ISO 17632-A:</b>	T465ZYN1H10
<b>JIS Z 3313:</b>	T55 5 T7-1 N A N2M1-H10

## TYPICAL INDUSTRY SEGMENTS

- Structural
- General Fabrication

## DIAMETERS / PACKAGING

Diameters in (mm)	25 lb (11.3 kg) Plastic Spool
1/16 (1.6)	ED035565
5/64 (2.0)	ED035566

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

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation (%)	Charpy V-Notch J (ft·lbf)		
				-46°C (-50°F)	-29°C (-20°F)	21°C (70°F)
<b>Requirements</b>						
AWS A5.29: E81T8-G	470 (68) min	550-690 (80-100) min	19	-	-	-
AWS A5.36: E81T8-A5-K8-H8				27 (20) min	-	-
AWS D1.8: 80 ksi Classification		550 (80) min		-	54 (40) min	54 (40) min
<b>Typical Results<sup>(3)</sup></b>						
AWS A5.36	550 (80)	630 (91)	25	100 (74)	-	-
AWS D1.8 High Heat Input (80 kJ/in)	490 (70)	615 (88)	26	-	64 (47)	143 (105)
AWS D1.8 Low Heat Input (30 kJ/in)	580 (84)	650 (93)	24	-	108 (80)	172 (127)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measure with 0.2% offset. <sup>(3)</sup>See test results disclaimer <sup>(4)</sup>To estimate ESO, subtract 1/4 in. (6.0 mm) from CTWD.

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

	%C	%Mn	%Si	%S	%P	%Ni
<b>Requirements</b> AWS A5.29: E81T8-G	0.15 max	1.00-2.00	0.40 max	0.030 max	0.030 max	0.50-1.50
AWS A5.36: E81T8-A5-K8-H8						
<b>Typical Results<sup>(3)</sup></b>	0.05	1.84	0.17	0.001	0.011	1.12
	%Cr	%Mo	%V	%Al	Diffusible Hydrogen (mL/100g weld deposit)	
<b>Requirements</b> AWS A5.29: E81T8-G	0.20 max	0.20 max	0.05 max	1.80 max	-	
AWS A5.36: E81T8-A5-K8-H8					8 max	
<b>Typical Results<sup>(3)</sup></b>	0.05	0.01	0.00	0.84	5	

**TYPICAL OPERATING PROCEDURES**

Diameter, Polarity Shielding Gas	CTWD <sup>(4)</sup> 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 (%)
1/16 in (1.6 mm), DC- Optimal Settings	22 (7/8)	2.8 (110)	19	185	2.0 (4.5)	1.5 (3.4)	77%
Min - Max	22 (7/8)	1.8-3.0 (75-120)	16-20	145-200	1.4-2.2 (3.0-4.9)	1.0-1.6 (2.2-3.6)	72-77%
5/64 in (2.0 mm), DC- Optimal Settings	22 (7/8)	2.8 (110)	19	245	2.9 (6.5)	2.5 (5.5)	85%
Min - Max	22 (7/8)	1.8-3.0 (75-120)	16-21	185-260	1.9-3.2 (4.1-7.1)	1.4-2.6 (3.0-5.8)	74-85%

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measure with 0.2% offset. <sup>(3)</sup>See test results disclaimer <sup>(4)</sup>To estimate ESO, subtract 1/4 in. (6.0 mm) from CTWD.

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**

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