

INNERSHIELD® NR®-305

Mild Steel, Flat & Horizontal ▪ AWS E70T-6, E70T6-A2-CS3-H16

KEY FEATURES

- High deposition rates in the flat and horizontal positions
- Smooth arc and low spatter levels
- Capable of producing weld deposits with impact properties exceeding 27 J (20 ft•lbf) at -29°C (-20°F)
- Welds on lightly rusted or primed plate
- Meets AWS D1.8 seismic lot waiver requirements

WELDING POSITIONS

Flat & Horizontal

CONFORMANCES

AWS A5.20/A5.20M:	E70T-6 H16
AWS A5.36:	E70T6-A2-CS3-H16
ASME SFA-A5.20:	E70T-6 H16
FEMA 353	
AWS D1.8	
JIS Z 3313	T 49 3 T6-0 N A-H15

TYPICAL APPLICATIONS

- General plate fabrication
- Shipyards, stiffener welding on barges
- Structural fabrication, including those subject to seismic requirements
- Welding over tack welds made with stick electrode
- Bridges and offshore rigs

DIAMETERS / PACKAGING

Diameter in (mm)	25 lb (11.3 kg) Steel Spool	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)	50 lb (22.7 kg) Coil	50 lb (22.7 kg) 50 lb Coil (Vacuum Sealed Foil Bag)
5/64 (2.0)	ED034185	ED030971	ED012593	ED030005
3/32 (2.4)				

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Hardness Rockwell B	Charpy V-Notch J (ft•lbf) @ -29°C (-20°F)
Requirements - AWS E70T-6	400 (58) min	480-655 (70-95)	22 min	—	27 (20) min
Typical Results⁽³⁾ - As-Welded	465-535 (68-77)	565-620 (82-90)	24-28	88-93	27-41 (20-30)

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%S	%P	%Al
Requirements - AWS E70T-6	0.30 max	1.75 max	0.60 max	0.03 max	0.03 max	1.8 max
Typical Results⁽³⁾	0.06-0.09	1.08-1.57	0.20-0.27	≤0.01	≤0.01	0.9-1.1

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+	35-51 (1 3/8-2)	4.4 (175)	20-22	300	8.5 (10.5)	4.0 (8.8)	84
		5.6 (220)	21-23	330	6.0 (13.3)	5.0 (11.1)	83
		6.6 (260)	22-24	360	7.1 (15.7)	5.9 (13.1)	83
		7.6 (300)	24-26	375	8.2 (18.1)	6.9 (15.2)	84
		8.3 (325)	25-27	400	8.9 (19.7)	7.4 (16.4)	83
3/32 in (2.4 mm), DC+	41-54 (1 5/8-2 1/4) ⁽⁴⁾	4.1 (160)	21-23	330	6.0 (13.3)	5.0 (11.0)	82
		6.1 (240)	24-26	425	9.1 (20.0)	7.6 (16.7)	83
		7.6 (300)	27-29	475	11.3 (25.0)	9.5 (21.0)	84
		10.2 (400)	33-35	525	15.2 (33.4)	12.7 (28.0)	83

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Use CTWD of 2 1/4 in (54 mm) for wire feed speeds greater than 300 ipm. NOTE: FEMA 353 and AWS D1.8 structural steel seismic supplement test data can be found on this product at www.lincolnelectric.com.

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.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.com for any updated information.