

# OUTERSHIELD® 71 SUPREME

Mild Steel, All Position ▪ AWS E71T-1C-H4, E71T-9C-H4, E71T-1M-H4, E71T-9M-H4



## KEY FEATURES

- Designed to be used with either 100% CO<sub>2</sub> or 75% Argon/25% CO<sub>2</sub> gas
- Smooth, consistent arc performance
- The finished weld exhibits an extremely smooth bead appearance, even on out-of-position welds
- Meets H4 diffusible hydrogen levels

## WELDING POSITIONS

All

## SHIELDING GAS

75% Argon / 25% CO<sub>2</sub>  
 100% CO<sub>2</sub>  
 Flow Rate: 40 - 50 CFH

## CONFORMANCES

### AWS A5.20/A5.20M:

E71T-1C-H4, E71T-9C-H4  
E71T-1M-H4, E71T-9M-H4

### ASME SFA-A5.20:

E71T-1C-H4, E71T-9C-H4  
E71T-1M-H4, E71T-9M-H4

### CWB/CSA W48-06:

E491T-9-H4, E491T-9M-H4

## TYPICAL APPLICATIONS

- Mining
- Offshore
- Bridge fabrication
- High strength fabrication
- Structural steel

## NOTE

- This product is only sold in Canada.
- This product contains micro-alloying elements. Additional information available upon request.

## DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool	500 lb (227 kg) Accu-Trak® Drum	600 lb (272 kg) Accu-Trak® Drum
0.045 (1.1)	ED503040	ED503046*	
0.052 (1.3)	ED503041	ED503047*	
1/16 (1.6)	ED503042		ED503048*

\*Made to Order (MTO)

**MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per CSA W48.06**

	<b>Yield Strength<sup>(2)</sup></b> MPa (ksi)	<b>Tensile Strength</b> MPa (ksi)	<b>Elongation</b> %	<b>Charpy V-Notch</b> J (ft•lbf) @ -29°C (-20°F)
<b>Requirements</b> CWB E491T-9-H4, E491T-9M-H4	400 (58) min	490 (71) min	22 min	27 (20) min
<b>Test Results<sup>(3)</sup></b> 100% CO <sub>2</sub> 75%Ar/25% CO <sub>2</sub>	520-593 (75-86) 560-646 (81-94)	580-640 (84-93) 510-699 (88-101)	26-28 25-28	49-98 (36-72) 102-126 (75-93)

**DEPOSIT COMPOSITION<sup>(1)</sup> – As Required per CSA W48.06**

	<b>%C</b>	<b>%Mn</b>	<b>%Si</b>	<b>%S</b>	<b>%P</b>	<b>%Ni</b>
<b>Requirements</b> CWB E491T-9-H4, E491T-9M-H4	0.18 max	1.75 max	0.90 max	0.03 max	0.03 max	0.50 max
<b>Test Results<sup>(3)</sup></b> 100% CO <sub>2</sub> 75%Ar/25% CO <sub>2</sub>	0.04-0.05 0.03-0.05	1.29-1.43 1.45-1.64	0.43-0.49 0.54-0.68	0.01 0.01	0.01 0.01	0.02-0.03 0.02-0.03
	<b>%Cr</b>	<b>%Mo</b>	<b>%V</b>	<b>%Cu</b>	<b>Diffusible Hydrogen</b> (mL/100g weld deposit)	
<b>Requirements</b> CWB E491T-9-H4, E491T-9M-H4	0.20 max	0.30 max	0.08 max	0.35 max	4.0 max	
<b>Test Results<sup>(3)</sup></b> 100% CO <sub>2</sub> 75%Ar/25% CO <sub>2</sub>	0.04-0.05 0.04-0.05	0.02-0.03 0.02	0.03 0.03-0.04	0.04-0.10 0.04-0.08	3-4 3-4	

**TYPICAL OPERATING PROCEDURES – All Position**

<b>Diameter</b> <b>Polarity</b> <b>Shielding Gas<sup>(4)</sup></b>	<b>Wire Weight</b> g/m (lbs/1000 in)	<b>CTWD<sup>(5)</sup></b> mm (in)	<b>Wire Feed</b> <b>Speed</b> m/min (in/min)	<b>Voltage</b> (volts)	<b>Approx.</b> <b>Current</b> (amps)	<b>Melt-Off</b> <b>Rate</b> kg/hr (lb/hr)	<b>Deposition</b> <b>Rate</b> kg/hr (lb/hr)	<b>Efficiency</b> (%)
0.045 in (1.1 mm), DC+ 75%Ar/25% CO <sub>2</sub>	6.4 (0.361)	25 (1)	4.4-12.7 (175-500)	22-28	125-260	2.0-5.2 (4.5-11.3)	1.8-4.6 (4.0-10.05)	86-88
0.052 in (1.3 mm), DC+ 75%Ar/25% CO <sub>2</sub>	8.6 (0.482)	25 (1)	3.8-10.2 (150-400)	22-31	135-295	2.1-5.4 (4.6-12.0)	1.8-4.9 (4.0-10.07)	86-88
1/16 in (1.6 mm), DC+ 75%Ar/25% CO <sub>2</sub>	12.1 (0.683)	25 (1)	3.8-8.9 (150-350)	23-31	135-365	2.9-6.7 (6.4-14.7)	2.5-5.9 (5.6-13.1)	86-88

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer below. <sup>(4)</sup>When welding under CO<sub>2</sub>, increase voltage by 1 Volt. <sup>(5)</sup>To estimate ESO, subtract 6.0 mm (1/4 in.) 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

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](http://www.lincolnelectric.com) for any updated information.

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#### THE LINCOLN ELECTRIC COMPANY

22801 St. Clair Avenue ■ Cleveland, OH ■ 44117-1199 ■ U.S.A.

Phone: +1.216.481.8100 ■ [www.lincolnelectric.com](http://www.lincolnelectric.com)

