

# ULTRACORE® 360™ M71

Mild Steel, All Position ■ E71T-1M-JH4, E71T-1C-H4, E71T1-M21A2-CS1-H4, E71T1-C1A0-CS1-H4

## KEY FEATURES

- Seamless design protects the flux core from environmental exposure helping to maintain low diffusible hydrogen and extend shelf life
- Copper coating offers superior feedability and extended contact tip life
- Low spatter and fume levels for less post-weld clean up and a better work environment
- Low H4 diffusible hydrogen levels minimize the risk of hydrogen induced cracking
- Premium arc performance and bead appearance

## WELDING POSITIONS

All

## CONFORMANCES

<b>AWS A5.20:</b>	E71T-1M-JH4, E71T-1C-H4
<b>AWS A5.36:</b>	E71T1-M21A2-CS1-H4, E71T1-C1A0-CS1-H4
<b>EN ISO 17632-A:</b>	T46 3 P M 1 H5
<b>EN ISO 17632-A</b>	T46 2 P C 1 H5

## TYPICAL APPLICATIONS

- Offshore
- Shipbuilding
- Structural
- Oil & Gas

## SHIELDING GAS

80% Ar / 20% CO<sub>2</sub>  
 100% CO<sub>2</sub>  
 Flow rate: 28-38 CFH

## DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Plastic Spool
0.045 (1.1)	W000403768
0.052 (1.3)	W000403769
1/16 (1.6)	W000403770

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

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft·lbf)		
				-18°C (0°F)	-29°C (-20°F)	-40°C (-40°F)
<b>Requirements</b>						
AWS A5.20: E71T-1M-JH4	400 (58) min	490-660 (70-95)	22 min	-	-	27 (20) min
AWS A5.20: E71T-1C-H4				27 (20) min	-	-
AWS A5.36: E71T1-M21A2-CS1-H4				-	27 (20) min	-
AWS A5.36: E71T1-C1A0-CS1-H4				27 (20) min	-	-
<b>Typical Results<sup>(3)</sup></b>						
As-Welded with 80% Ar/ 20% CO <sub>2</sub>	500-540 (72-79)	560-620 (81-90)	24-28	70-100 (51-74)	80-120 (59-90)	35-55 (25-41)
As-Welded with 100% CO <sub>2</sub>	470 (68)	530 (77)	28	50-80 (36-59)	-	-

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer

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

	<b>%C</b>	<b>%Mn</b>	<b>%Si</b>	<b>%S</b>
<b>Requirements</b>				
AWS A5.20: E71T-1M-JH4, E71T-1C-H4	0.12 max	1.75 max	0.90 max	0.03 max
AWS A5.36: E71T1-M21A2-CS1-H4, E71T-C1A0-CS1-H4	0.12 max	1.75 max	0.90 max	0.030 max
<b>Typical Results<sup>(3)</sup></b>				
As-Welded with 80% Ar / 20% CO <sub>2</sub>	0.04-0.06	1.20-1.60	0.30-0.60	< 0.015
	<b>%P</b>	<b>%Cu</b>	<b>%B</b>	<b>Diffusible Hydrogen (mL/100g weld deposit)</b>
<b>Requirements</b>				
AWS A5.20: E71T-1M-JH4, E71T-1C-H4	0.03 max	0.35 max	Not Specified	4.0 max
AWS A5.36: E71T1-M21A2-CS1-H4, E71T-C1A0-CS1-H4	0.030 max	0.35 max	Not Specified	4 max
<b>Typical Results<sup>(3)</sup></b>				
As-Welded with 80% Ar / 20% CO <sub>2</sub>	< 0.015	0.10-0.20	0.002-0.006	2-4

**TYPICAL OPERATING PROCEDURES**

<b>Diameter, Polarity Shielding Gas</b>	<b>CTWD<sup>(5)</sup> mm (in)</b>	<b>Wire Feed Speed m/min (in/min)</b>	<b>Voltage (volts)</b>	<b>Approx. Current (amps)</b>	<b>Melt-Off Rate kg/hr (lb/hr)</b>	<b>Deposition Rate kg/hr (lb/hr)</b>	<b>Efficiency (%)</b>
0.045 in (1.1 mm), DC+ 80% Ar / 20% CO <sub>2</sub>	15-20 (3/4)	6.0 (236)	21-23	160	2.5 (5.5)	2.2 (4.8)	85-88
		7.5 (295)	23-24	190	3.1 (6.9)	2.7 (6.0)	
		9.0 (354)	24-26	220	3.8 (8.3)	3.3 (7.3)	
		10.5 (413)	26-28	250	4.4 (9.7)	3.9 (8.6)	
		11.5 (453)	27-29	260	4.8 (10.6)	4.3 (9.4)	
		13.0 (512)	28-30	270	5.4 (12.0)	4.8 (10.7)	
0.052 in (1.3 mm), DC+ 80% Ar / 20% CO <sub>2</sub>	15-20 (3/4)	5.0 (197)	21-22	210	2.7 (6.1)	2.4 (5.3)	85-88
		6.0 (236)	23-24	240	3.3 (7.3)	2.9 (6.3)	
		8.0 (315)	26-27	280	4.4 (9.7)	3.9 (8.5)	
		9.0 (354)	27-29	300	4.9 (10.9)	4.4 (9.7)	
		10.0 (394)	27-29	320	5.5 (12.1)	4.9 (10.8)	
1/16 in (1.6 mm), DC+ 80% Ar / 20% CO <sub>2</sub>	15-20 (3/4)	3.1 (122)	21-22	190	2.4 (5.3)	2.1 (4.6)	85-88
		5.0 (197)	23-26	280	3.9 (8.6)	3.4 (7.6)	
		6.5 (256)	26-28	350	5.1 (11.2)	4.5 (10.0)	
		7.5 (295)	27-29	370	5.9 (12.9)	5.2 (11.5)	
		9.0 (354)	28-30	400	7.0 (15.5)	6.3 (13.8)	

<sup>(1)</sup>Typical all weld metal. <sup>(3)</sup>See test results disclaimer <sup>(4)</sup>In order to meet the requirements of the G group, the undiluted weld metal shall have not less than the minimum specified for one or more of the elements listed. <sup>(5)</sup>To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD. NOTE: This product contains micro-alloying elements. Additional information available upon request

*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.

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