SUPERARC® L-59®

Mild Steel, Copper Coated · AWS ER70S-6

BUY AMERICA

KEY FEATURES

- Engineered alloy system enhances silicon island management, reduces post weld cleaning, and enables higher travel speeds for increased productivity
- High levels of manganese and silicon deoxidizers tolerate medium to heavy mill scale surfaces
- Excellent toe-wetting produces a flatter, smooth weld bead for optimal bead appearance
- MicroGuard® Ultra provides superior feeding and arc stability
- Copper coating provides superior arc-starting characteristics for long contact tip life

CONFORMANCES

AWS A5.18:	ER70S-6
ABS - Part 2:	3YSA H5
CWB/CSA W48:	B-G 49A 3 C1 S6 (B-G 49A 3 C G6)
DNV - 2.9:	III Y40MS H5
Llyod's Register - Chapter 11:	3YS H5
BV - Chapter 5:	SA3YHHH
ISO 14341-A:	G 42 3 C1 3Si1 G 46 4 M21 3Si1 G 42 4 M20 3Si1
ISO 14341-B:	G 49A 3 C1 S6

WELDING POSITIONS

All

TYPICAL APPLICATIONS

- Robotic or hard automation
- Automotive
- Pipeline & Offshore
- Pressure vessels
- Heavy fabrication
- Alternative to metal-cored wire

SHIELDING GAS

100% CO_2
75-95% Argon / Balance CO_2
95-98% Argon / Balance O_2
Flow Rate: 30 - 50 CFH

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (14.9 kg) Plastic Spool	44 lb (20 kg) Fiber Spool	44 lb (20 kg) Steel Spool	60 lb (27.2 kg) Fiber Spool	500 lb (227 kg) Accu-Pak® Box
0.035 (0.9)	ED034270	ED033033	ED032366		ED032894
0.040 (1.0)					ED032895
0.045 (1.1)	ED034271		ED032367		ED032896
0.052 (1.3)	ED034272	ED034430*	ED032368	ED032814	ED032897
1/16 (1.6)	ED034356	ED036220**	ED032968		

Diameter in (mm)	500 lb (227 kg) Infinity-Pak®	900 lb (408 kg) Accu-Pak® Box	1000 lb (454 kg) Infinity-Pak®	1000 lb (454 kg) Accu-Pak® Box	1000 lb (454 kg) Precise-Trak® Reel
0.035 (0.9)	ED034402	ED032861			
0.040 (1.0)					
0.045 (1.1)			ED033215	ED032863	ED032808
0.052 (1.3)				ED032864, ED034431*	
1/16 (1.6)				ED032865	

**Buy America Product **Tested Material*

MECHANICAL PROPERTIES[1] – *As Required per AWS A5.18*

	Yield Strength[2] MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft·lbf) @ -29°C (-20°F)	Charpy V-Notch J (ft·lbf) @ -40°C (-40°F)
Requirements - AWS ER70S-6 As-Welded with 100% CO_2	400 (58) min	485 (70) min	22 min	27 (20) min	Not Specified
Typical Results[3]					
As-Welded with 100% CO_2	455 (66)	565 (82)	28	71 (52)	53 (39)
As-Welded with 75% Ar/25% CO_2	485 (70)	595 (86)	25	56 (41)	53 (39)
As-Welded with 90% Ar/10% CO_2	460 (67)	570 (83)	25	75 (55)	65 (48)

WIRE COMPOSITION – *As Required per AWS A5.18*

	%C	%Mn	%Si	%S	%P
Requirements - AWS ER70S-6	0.06-0.15	1.40-1.85	0.80-1.15	0.035 max	0.025 max
	%Cu[4]	**%Ni**	**%Cr**	**%Mo**	**%V**
Requirements - AWS ER70S-6	0.50 max	0.15 max	0.15 max	0.15 max	0.03 max

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD[5] mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
0.035 in (0.9 mm), DC+					
Short Circuit Transfer 75% Ar/25% CO_2[6]	12 (1/2)	2.5 (100) 3.8 (150) 6.4 (250)	17 18 20	80 120 175	0.7 (1.6) 1.1 (2.4) 1.8 (4.0)
Spray Transfer 90% Ar/10% CO_2	19 (3/4)	9.5 (375) 12.7 (500) 15.2 (600)	23 29 30	195 230 275	2.7 (6.0) 3.6 (8.0) 4.4 (9.6)
0.045 in (1.1 mm), DC+					
Short Circuit Transfer 75% Ar/25% CO_2[6]	12 (1/2)	3.2 (125) 3.8 (150) 5.1 (200)	18 19 20	145 165 200	1.5 (3.4) 1.8 (4.0) 2.4 (5.4)
Spray Transfer 90% Ar/10% CO_2	19 (3/4)	8.9 (350) 12.1 (475) 12.7 (500)	27 30 30	285 335 340	4.2 (9.2) 5.7 (12.5) 6.0 (13.2)
0.052 in (1.3 mm), DC+					
Spray Transfer 90% Ar/10% CO_2	19 (3/4)	7.6 (300) 8.1 (320) 12.3 (485)	30 30 32	300 320 430	4.8 (10.6) 5.2 (11.5) 7.8 (17.1)
1/16 in (1.6 mm), DC+					
Spray Transfer 90% Ar/10% CO_2	19 (3/4)	5.3 (210) 6.0 (235) 7.4 (290)	25 27 28	325 350 430	4.8 (10.7) 5.4 (12.0) 6.7 (14.8)

[1]Typical all weld metal. [2]Measured with 0.2% offset. [3]See test results disclaimer [4]Copper due to any coating on the electrode plus the copper content of the filler metal itself, shall not exceed the stated 0.50% max. [5]CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout. [6]Procedures in these areas are procedures for short circuiting mode using 75% Argon, 25% CO_2. NOTE: For 100% CO_2 procedures, add 1 to 2 volts for short circuit transfer and 2 to 3 volts for globular transfer.

Safety Data Sheets (SDS) and Certificates of Conformance are available on our website at www.lincolnelectric.com

FUMES AND GASES can be hazardous to your health.

- Fumes from the normal use of this product contain significant quantities of potentially hazardous compounds. See consumable product label/insert.
- Keep your head out of the fumes.
- Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area.
- An approved respirator should be used unless exposure assessments are below applicable exposure limits.

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 business of Lincoln Electric is manufacturing and selling high quality welding equipment, automated welding systems, consumables, cutting equipment and EV charging systems. Our challenge is to meet the needs of our customers, who are experts in their fields, and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or technical information about their use of our products. Our employees respond to inquiries to the best of their ability based on information and specifications 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, or to provide engineering advice in relation to a specific situation or application. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or communications. Moreover, the provision of such information or technical information does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or technical information, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose or any other equivalent or similar warranty is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the definition of specifications, and 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.

Publication C4.10.4 | Issue Date 10/26
© Lincoln Global, Inc. All Rights Reserved.

All trademarks and registered trademarks are the property of their respective owners.