LINCOLN® S6

Mild Steel, Copper Coated - AWS ER70S-6

redzone LINCOLN ELECTRIC

Available to MIG Wire Partner Program Participants

KEY FEATURES

- ER70S-6 MIG wire for general fabrication applications
- Copper-coated mild steel wire ensures smooth arc performance, low spatter, and improved feedability with reduced liner and tip wear
- Suitable for single and multi-pass welding on steels with mill scale, rust, or light contaminants
- Contains silicon and manganese deoxidizers for improved wetting, resulting in a flatter bead profile and cleaner welds

CONFORMANCES

AWS A5.18: ER70S-6
ASME SFA-A5.18: ER70S-6

TYPICAL APPLICATIONS

- General Fabrication

WELDING POSITIONS

All

SHIELDING GAS

100% CO_2
75-95% Argon / balance CO_2
Flow Rate: 30 - 50 CFH

DIAMETERS / PACKAGING

Diameter in (mm)	11 lb (5 kg) Spools 1,848 lb (838 kg) Pallet	33 lb (15 kg) Spools 2,376 lb (1,078 kg) Pallet	500 lb (227 kg) Accu-Trak® Drum 2,000 lb (907 kg) Pallet
0.025 (0.6)	ED038218*		
0.030 (0.8)	ED038219*		
0.035 (0.9)	ED038220*	ED037837	ED038010
0.045 (1.1)		ED037838	ED038011

*11 lb. spool ships 6 spools to a master carton 66 lbs. (30kg)

MECHANICAL PROPERTIES[1]

	Yield Strength[2] MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft-lbf) @ -29°C (-20°F)
Requirements AWS A5.18: ER70S-6	400 (58) min	480 (70) min.	22 min	27 (20) min
Typical Results[3]				
As-Welded with 100%CO2	460 (67)	550 (80)	26	70 (50)
As-Welded with 90%Ar/10%CO2	480 (70)	560 (81)	26	90 (65)

WIRE COMPOSITION

	%C	%Mn	%Si	%S	%P	%Ni	%Cr	%Mo	%V	%Cu (Total)[4]
Requirements AWS A5.18: ER70S-6	0.06 - 0.15	1.40 - 1.85	0.80 - 1.15	0.035 max.	0.025 max.	0.15 max.	0.15 max.	0.15 max.	0.03 max.	0.50 max.
Typical Results[3]	0.08	1.50	0.85	0.010	0.008	0.04	0.04	0.01	<0.01	0.15

[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 for short circuiting mode using 100% CO_2. [7]When using 75% Argon, 25% CO_2 for short circuit transfer, reduce voltage by 1 to 2 volts.

TYPICAL OPERATING PROCEDURES

Diameter, Polarity	CTWD[5] mm (in)	Wire Feed Speed m/min (in/min)	Approx. Voltage (Volts)	Approx. Current (Amps)	Melt-Off Rate kg/hr (lb/hr)
0.025in (0.6mm), DC+					
Short Circuit Transfer 100% CO_2	9-12 (3/8-1/2)	2.5-6.4 (100-250)	17-19	35-80	0.4-0.9 (0.8-2.0)
0.030in (0.8mm), DC+					
Short Circuit Transfer 100% CO_2	9-12 (3/8-1/2)	1.9-7.6 (75-300)	17-22	35-130	0.4-1.6 (0.9-3.6)
0.035in (0.9mm), DC+					
Short Circuit Transfer 100% CO_2	9-12 (3/8-1/2)	2.5-7.5 (100-300)	18-23	80-175	0.7-1.8 (1.6-4.0)
Spray Transfer 90% Ar/ 10% CO_2	12-19 (1/2-3/4)	8.0-15.0 (315-590)	23-30	190-270	2.7-4.4 (6.0-9.6)
0.045in (1.1mm), DC+					
Short Circuit Transfer 100% CO_2	9-12 (3/8-1/2)	3.5-7.0 (135-275)	18-25	150-210	1.5-2.5 (3.4-5.4)
Spray Transfer 90% Ar/ 10% CO_2	12-19 (1/2-3/4)	9.0-13.0 (350-510)	26-35	280-350	4.2-6.0 (9.2-13.2)

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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.

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.

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