SUPERGLIDE® S3

Mild Steel, Non-Copper Coated Wire ▪ AWS ER70S-3

KEY FEATURES

- Moderate levels of manganese and silicon for deoxidization of clean to light mill scale surfaces
- MicroGuard® Ultra provides superior feeding and arc stability
- Supports short-circuiting, globular, axial spray and pulsed spray transfer
- Non-copper coated

WELDING POSITIONS

All

SHIELDING GAS

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

CONFORMANCES

AWS A5.18/A5.18M:	ER70S-3
ASME SFA-A5.18:	ER70S-3
CWB/CSA W48-06:	ER49S-3
EN ISO 14341-B:	G 49A 2 C S3

TYPICAL APPLICATIONS

- Clean to light mill scale base material
- Sheet metal to 380-485 MPa (55-70 ksi) yield strength material
- Pipeline
- Pressure vessels
- Structural steel

DIAMETERS / PACKAGING

Diameter in (mm)	44 lb (20 kg) Fiber Spool	500 lb (227 kg) Accu-Trak® Drum
0.035 (0.9)	ED028621	ED030772
0.045 (1.1)	ED028622	ED030773

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

	Yield Strength[2] MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @ -18°C (0°F)	Charpy V-Notch J (ft•lbf) @ -29°C (-20°F)
Requirements - AWS ER70S-3 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	405 (59)	510 (74)	26	100 (74)	87 (64)

[1]Typical all weld metal. [2]Measured with 0.2% offset. [3]See test results disclaimer

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

	%C	%Mn	%Si	%S	%P
Requirements - AWS ER70S-3	0.006-0.15	0.90-1.40	0.45-0.75	0.035 max	0.025 max
Typical Results[3]	0.07-0.10	1.15-1.27	0.52-0.59	0.002-0.008	0.005-0.013
	%Cr	**%Mo**	**%Ni**	**%V**	**%Cu**
Requirements - AWS ER70S-3	0.15 max	0.15 max	0.15 max	0.03 max	0.50 max
Typical Results[3]	≤ 0.03	≤ 0.01	≤ 0.04	< 0.01	0.02-0.04

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD[4] 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 100% CO_2[5]	9-12 (3/8-1/2)	2.5 (100) 3.8 (150) 6.4 (250)	18 19 22	80 120 175	0.7 (1.6) 1.1 (2.4) 1.8 (4.0)
Spray Transfer 90% Ar/10% CO_2	12-19 (1/2-3/4)	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 100% CO_2[5]	12-19 (1/2-3/4)	3.2 (125) 3.8 (150) 5.1 (200)	19 20 21	145 165 200	1.5 (3.4) 1.8 (4.0) 2.4 (5.4)
Spray Transfer 90% Ar/10% CO_2	12-19 (1/2-3/4)	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)

[1]Typical all weld metal. [2]Measured with 0.2% offset. [3]See test results disclaimer [4]CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout.
[5]Procedures in these areas are procedures for short circuiting mode using 100% CO_2. When using 75% Argon, 25% CO_2 for short circuit transfer, reduce voltage by 1 to 2 volts.

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.

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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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