

METALSHIELD® Z

Mild Steel ▪ AWS E70C-GS

KEY FEATURES

- Designed to enhance productivity and quality of single pass lap and fillet welds on galvanized and other zinc coated steels (galvannealed)
- Capable of travel speeds exceeding 55 inches per minute with zero external porosity and less than 1% internal porosity
- Developed for optimal performance with Rapid Z® Waveform Control Technology®
- Reduces both external and internal weld metal porosity inherent to welding coated steel
- Ideal for welding thin gauge material
- Minimizes heat input into the weldment, reducing burn-through potential and minimizing HAZ size
- Able to successfully bridge gaps due to poor fit-up
- Use with DCEN polarity or customized waveforms for optimal productivity and quality

CONFORMANCES

AWS A5.18/A5.18M: E70C-GS
JIS Z 3313 T 49 T15-0 G S G

TYPICAL APPLICATIONS

- Automotive
- Coated Steels
- Robotics / Hard Automation
- Single Pass Welds

WELDING POSITIONS

Flat & Horizontal

SHIELDING GAS

90% Argon / 10% CO₂
 Flow rate: 40-50 CFH

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Fiber Spool	500 lb (227 kg) Accu-Trak® Drum
0.035 (0.9)	ED036258	ED036259
0.040 (1.0)	ED035515	ED035516

MECHANICAL PROPERTIES – As Required per AWS A5.18/A5.18M

	Transverse Tensile Strength MPa (ksi)	Longitudinal Bend Test
Requirements - AWS A5.18: E70C-GS	480 (70) min	180° over 3/4 in Radius
Typical Results ⁽²⁾ As-Welded with 90% Argon / 10% CO ₂	570 (83)	No openings exceeding 1/8 in

⁽¹⁾Typical all weld metal. ⁽²⁾See test results disclaimer.

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.18/A5.18M

	%C	%Mn	%Si	%S	%P
Requirements – AWS A5.18: E70C-G5	Not Specified				
Typical Results⁽²⁾ As-Welded with 90% Argon / 10% CO ₂	0.07-0.12	1.5-2.1	0.9-1.25	0.02 max	0.015 max

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD ⁽³⁾ mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
0.035 in (0.9 mm), DC- 90% Argon / 10% CO ₂	15-19 (5/8-3/4)	6.4 (250)	21	129	1.7 (3.8)	1.6 (3.6)	95
		10.2 (400)	23	163	2.8 (6.1)	2.8 (6.1)	99
		14.0 (550)	24	191	3.8 (8.3)	3.7 (8.1)	97
0.040 in (1.0 mm), DC- 90% Argon / 10% CO ₂	15-19 (5/8-3/4)	2.5 (100)	19	100	1.0 (2.1)	0.9 (2.0)	95
		10.8 (425)	23	220	3.9 (8.6)	3.8 (8.3)	97
		14.0 (550)	26	265	5.1 (11.2)	5.0 (11.0)	98

⁽¹⁾Typical all weld metal. ⁽²⁾See test results disclaimer. ⁽³⁾To estimate ESO, subtract 3/16 in (4.8 mm) from CTWD.

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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