

# CERTIFICATE OF CONFORMANCE

Product: **SuperArc® L-59®**

Classification: **AWS D1.5 ER70S-6**

Also meets the requirements of **AWS D1.1 ER70S-6**

Date **May 24, 2019**

This is to certify that the product named above is of the same classification(s) and design as the material used for the tests reported herein. The material was tested according to the specification(s) indicated and met all requirements. It was manufactured and supplied according to a Quality System Program that meets the requirements of ISO9001 among others as documented on The Lincoln Electric web page (<http://www.lincolnelectric.com/en-us/company/Pages/certifications.aspx>).

Operating Settings	ER70S-6 Requirements	RESULTS
Electrode Size		.045" (1.1 mm)
Current Type/Polarity	DC+	DC+
Shielding Gas	Not Specified	75% Ar, 25% CO2
Wire Feed Speed, cm/min (in/min)	Not Specified	1092 (430)
Nominal Voltage, V	Not Specified	30
Nominal Current, A	Not Specified	290
Average Heat Input, kJ/mm (kJ/in)		1.4 (35)
Travel Speed, cm/min (in/min)	Not Specified	37 (14.75)
Contact Tip to Work Distance, mm (in)	Not Specified	19 (3/4)
Pass/Layers		16/6
Preheat Temperature, °C (°F)	(60 min.)	20 (70)
Interpass Temperature, °C (°F)	(325 max.)	150 (300)
Postweld Heat Treatment	As-welded	As-welded

**Mechanical properties of weld deposits**

Tensile Strength, MPa (ksi)	(70 min.)	560 (81)
Yield Strength, 0.2% Offset, MPa (ksi)	(58 min.)	450 (66)
Elongation %	22 min.	25
Average Impact Energy Joules @ -29 °C (ft-lbs @ -20 °F)	(20 min.)	95 (70) 91,95,98 (67,70,72)

**Chemical composition of weld deposits (weight %)**

C	Info. Only	0.09
Mn	Info. Only	1.16
Si	Info. Only	0.69
P	Info. Only	0.006
S	Info. Only	0.021
Ni	Info. Only	0.01
Cr	Info. Only	0.03
Mo	Info. Only	<0.00
V	Info. Only	<0.003
Cu	Info. Only	0.15
Ti	Info. Only	0.00
Zr	Info. Only	<0.001
Al	Info. Only	0.00

Electrode composition (weight %)	ER70S-6 Requirements	Electrode Results
C	0.06 - 0.15	0.09
Mn	1.40 - 1.85	1.46
Si	0.80 - 1.15	0.92
S	0.035 max.	0.021
P	0.025 max.	0.005
Cr	0.15 max.	0.04
Ni	0.15 max.	0.01
Mo	0.15 max.	<0.00
V	0.03 max.	<0.003
Cu (Total)	0.50 max.	0.18

- This document meets the requirements of AWS A5.01M/A5.01 Schedule G. When a specific lot number is referenced it also meets the requirements of EN10204, type 2.2. It does not meet the requirements of type 3.1.
- Strength values in SI units are reported to the nearest 10 MPa converted from actual data. Preheat and interpass temperature values in SI units are reported to the nearest 5 degrees.

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*Toronto Cunningham*  
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Toronto Cunningham, Certification Supervisor      May 24, 2019  
Date

*Jonathan S. Ogborn*  
\_\_\_\_\_  
Jon Ogborn, Manager, Consumable Compliance      May 24, 2019  
Date