

CERTIFICATE OF CONFORMANCE

Product: **SuperArc® L-50®**

Classification: **AWS D1.5 ER70S-3**

Also meet the requirements of **AWS D1.1 ER70S-3**

Date **April 06, 2017**

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-3 Requirements	RESULTS
Required Size for Classification		.045" (1.1 mm)
Current Type/Polarity	DC+	DC+
Shielding Gas	Not Specified	94% Ar, 6% CO2
Nominal Voltage, V	Not Specified	30
Wire Feed Speed, cm/min (in/min)	Not Specified	1143 (450)
Nominal Current, A	Not Specified	305
Average Heat Input, kJ/mm (kJ/in)		1.5 (38)
Contact Tip to Work Distance, mm (in)	Not Specified	19 (3/4)
Travel Speed, cm/min (in/min)	Not Specified	36 (14)
Pass/Layers		14/6
Preheat Temperature, °C (°F)	(60 min.)	20 (70)
Interpass Temperature, °C (°F)	(325 max.)	135 (275)
Postweld Heat Treatment	As-welded	As-welded

Mechanical properties of weld deposits

Tensile Strength, MPa (ksi)	(70 min.)	550 (80)
Yield Strength, 0.2% Offset, MPa (ksi)	(58 min.)	450 (65)
Elongation %	22 min.	29
Average Impact Energy Joules @ -29 °C (ft-lbs @ -20 °F)	(20 min.)	250 (185) 229,253,270 (169,186,199)

Chemical composition of weld deposits (weight %)

C	Info. Only	0.09
Mn	Info. Only	1.04
Si	Info. Only	0.48
P	Info. Only	0.007
S	Info. Only	0.007
Ni	Info. Only	0.02
Cr	Info. Only	0.02
Mo	Info. Only	0.00
V	Info. Only	<0.003
Zr	Info. Only	<0.001
Ti	Info. Only	0.00
Al	Info. Only	0.00
Cu	Info. Only	0.16

Electrode composition (weight %)	ER70S-3 Requirements	Electrode Results
C	0.06 - 0.15	0.09
Mn	0.90 - 1.40	1.18
Si	0.45 - 0.75	0.56
P	0.025 max.	0.006
S	0.035 max.	0.008
Ni	0.15 max.	0.01
Cr	0.15 max.	0.02
Mo	0.15 max.	0.00
V	0.03 max.	<0.003
Cu (Total)	0.50 max.	0.17

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.

Toronto Cunningham

April 06, 2017

Toronto Cunningham, Certification Supervisor

Date

Jonathan S. Ogborn

April 07, 2017

Jon Ogborn, Manager, Consumable Compliance

Date