

CERTIFICATE OF CONFORMANCE



Electrode: **Lincolnweld® L-56®**
 Electrode Size **3/32" (2.4 mm)**
 Flux: **Lincolnweld® 960®**
 Specification: **AWS D1.8:2016**
 Date: **October 28, 2019**

This is to certify that the above listed flux was manufactured to meet the Class F2 requirement of AWS A5.01, and the above listed electrode was manufactured to meet the Class S4 requirement of AWS A5.01, as required by clause 6.3.1.2 of AWS D1.8:2016.

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	High Heat Input Requirements	Low Heat Input Requirements	High Heat Input Results	Low Heat Input Results
Electrode Lot			15952634	15952634
Flux Lot			16307772	16307772
Base Material			ASTM A36 steel	ASTM A36 steel
Current Type/Polarity			DC+	DC+
Plate Thickness, mm (in)	(0.75 - 1)	(0.75 - 1)	25 (1.00)	25 (1.00)
Nominal Voltage, V			36	27
Wire Feed Speed, cm/min (in/min)			312 (123)	226 (89)
Nominal Current, A			450	350
Average Heat Input, kJ/mm (kJ/in)	Not Specified	Not Specified	2.9 (74.8)	1.3 (33.4)
Contact Tip to Work Distance, mm (in)			32 (1.25)	25 (1)
Travel Speed, cm/min (in/min)			33 (13)	43 (17)
Pass/Layers			15/7	24/12
Preheat Temperature, °C (°F)	(250 min.)	(120 max.)	120 (250)	25 (81)
Interpass Temperature, °C (°F)	(450 min.)	(250 max.)	230 (450)	120 (250)
Postweld Heat Treatment	As-welded	As-welded	As-welded	As-welded
Weld Position			1G	1G
Mechanical properties of weld deposits				
Tensile Strength, MPa (ksi)	(70 min.)	(70 min.)	610 (88)	620 (90)
Yield Strength, 0.2% Offset, MPa (ksi)	(58 min.)	(58 min.)	430 (62)	520 (76)
Elongation %	22 min.	22 min.	28	27
Average Impact Energy	(40 min.)	(40 min.)	58 (43)	59 (44)
Joules @ -18 °C (ft-lbs @ 0 °F)			51,55,69 (38,41,51)	58,59,60 (43,44,44)

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Operating Settings	High Heat Input Requirements	Low Heat Input Requirements	High Heat Input Results	Low Heat Input Results
Electrode Lot			16116795	16116795
Flux Lot			16272353	16272353
Base Material			ASTM A36 steel	ASTM A36 steel
Current Type/Polarity			DC+	DC+
Plate Thickness, mm (in)	(0.75 - 1)	(0.75 - 1)	25 (1.00)	25 (1.00)
Nominal Voltage, V			36	27
Wire Feed Speed, cm/min (in/min)			312 (123)	226 (89)
Nominal Current, A			450	350
Average Heat Input, kJ/mm (kJ/in)	Not Specified	Not Specified	2.9 (74.8)	1.3 (33.4)
Contact Tip to Work Distance, mm (in)			32 (1.25)	25 (1)
Travel Speed, cm/min (in/min)			33 (13)	43 (17)
Pass/Layers			15/7	25/12
Preheat Temperature, °C (°F)	(250 min.)	(120 max.)	120 (250)	25 (80)
Interpass Temperature, °C (°F)	(450 min.)	(250 max.)	230 (450)	120 (250)
Postweld Heat Treatment	As-welded	As-welded	As-welded	As-welded
Weld Position			1G	1G
Mechanical properties of weld deposits				
Tensile Strength, MPa (ksi)	(70 min.)	(70 min.)	620 (90)	620 (90)
Yield Strength, 0.2% Offset, MPa (ksi)	(58 min.)	(58 min.)	460 (67)	530 (77)
Elongation %	22 min.	22 min.	29	27
Average Impact Energy	(40 min.)	(40 min.)	83 (61)	62 (46)
Joules @ -18 °C (ft-lbs @ 0 °F)			76,86,86 (56,64,64)	61,61,65 (45,45,48)

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Operating Settings	High Heat Input Requirements	Low Heat Input Requirements	High Heat Input Results	Low Heat Input Results
Electrode Lot			16363094	16363094
Flux Lot			16259147	16259147
Base Material			ASTM A36 steel	ASTM A36 steel
Current Type/Polarity			DC+	DC+
Plate Thickness, mm (in)	(0.75 - 1)	(0.75 - 1)	25 (1.00)	25 (1.00)
Nominal Voltage, V			36	27
Wire Feed Speed, cm/min (in/min)			312 (123)	226 (89)
Nominal Current, A			450	350
Average Heat Input, kJ/mm (kJ/in)	Not Specified	Not Specified	2.9 (74.8)	1.3 (33.4)
Contact Tip to Work Distance, mm (in)			32 (1.25)	25 (1)
Travel Speed, cm/min (in/min)			33 (13)	43 (17)
Pass/Layers			15/7	25/12
Preheat Temperature, °C (°F)	(250 min.)	(120 max.)	120 (250)	25 (80)
Interpass Temperature, °C (°F)	(450 min.)	(250 max.)	230 (450)	120 (250)
Postweld Heat Treatment	As-welded	As-welded	As-welded	As-welded
Weld Position			1G	1G
Mechanical properties of weld deposits				
Tensile Strength, MPa (ksi)	(70 min.)	(70 min.)	600 (87)	620 (89)
Yield Strength, 0.2% Offset, MPa (ksi)	(58 min.)	(58 min.)	440 (64)	530 (76)
Elongation %	22 min.	22 min.	26	27
Average Impact Energy	(40 min.)	(40 min.)	87 (64)	63 (47)
Joules @ -18 °C (ft-lbs @ 0 °F)			84,85,92 (62,63,68)	61,64,64 (45,47,48)

1. This document meets the requirements of AWS A5.01M/A5.01 Schedule F. 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.
2. The Charpy V-notch impact values reported at -18 °C (0 °F) are required when the Lowest Anticipated Service Temperature (LAST) is -29 °C (-20 °F).
3. 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.


 Daniel Gaul, Certification Supervisor October 28, 2019
Date


 Rich Bollas, Certification Supervisor November 05, 2019
Date