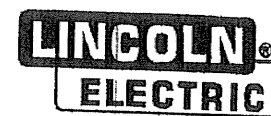


The Lincoln Electric Company  
 22801 St. Clair Avenue  
 Cleveland, Ohio 44117-1169

**CERTIFICATE OF CONFORMANCE**  
 (APPLIES ONLY TO U.S. PRODUCTS)



[1 Year]

Product: Lincolnweld® 860 Flux/  
 LA-75 Electrode  
 Classification: F7A2-EN1K-N1-H8  
 Specification: AWS A5.23-97, ASME SFA-5.23  
 Test Completed: July 26, 2007

This is to certify that the product named above and supplied on the referenced order number is of the same classification, manufacturing process, and material requirements as the material which was used for the test that was conducted on the date shown, the results of which are shown below. All tests required by the specifications shown for classification were performed at that time and the material tested met all requirements. It was manufactured and supplied according to the Quality System Program of the Lincoln Electric Company, Cleveland, Ohio, U.S.A., which meets the requirements of ISO9001, NCA3800, ANSIAAWS A5.01, AS 25902, and other specification and Military requirements, as applicable. The Quality System Program has been approved by ASME, ABS, and VOTUV.

Operating Settings	AWS/ASME Requirements	Results
Electrode Size	5/32 inch	5/32 inch
Polarity	27 - 30	DC+
Voltage, V	28	
Wire Feed Speed, cm/min (in/min)	112 (44)	
Current, amps	32 (1.14)	
Contact Tip to Work Distance, mm (in.)	41 (1.6)	
Travel Speed, cm/min (in/min)	170	
Passes/Layers	160 (300)	
Preheat Temp. °C (°F)	(275 - 325)	
Interpass Temp. °C (°F)	(275 - 325)	
<b>Mechanical properties of the weld deposits (in the as-welded condition)</b>		
Tensile Strength, MPa (ksi)	(70 - 95)	860 (80)
Yield Strength, 0.2% offset, MPa (ksi)	(68 min.)	490 (86)
Elongation, %	22 min.	32
Average Hardness Rockwell B	Not Required	87
Avg. Charpy V-notch Impact Properties		198 (79)
Joules @ -20 °C (ft.lbf @ -20 °F)	(20 min.)	95,111,112 (71,82,63)
Diffusible Hydrogen (mL/100g) per AWS A4.3	8.0 max	4.4
Absolute Humidity (grains moisture/dry air)		66

Analysis (weight %)	N1 Deposit		EN1K Electrode	
	Requirements	Results	Requirements	Results
C	0.12 max.	0.04	0.12 max.	0.08
Mn	1.60 max.	1.63	0.80 - 1.40	0.98
Si	0.80 max.	0.47	0.40 - 0.80	0.55
S	0.025 max.	0.011	0.020 max.	0.008
P	0.020 max.	0.018	0.020 max.	0.008
Cr	0.15 max.	0.03	0.75 - 1.25	0.87
Ni	0.75 - 1.10	0.70	Not Required	0.02
Mo	0.35 max.	0.01	Not Required	0.02
V+Ti+Zr	0.05 max.	0.01	Not Required	0.00
Cu (total)	0.35 max.	0.09	0.35 max.	0.09

This certificate complies to the requirements of EN 10204, Type 2.2.  
 Radiographic Test: Met requirements.  
 Test assembly constructed of ASTM A516 Grade 70 steel.

Results below the detection limits of the instrument or lower than the precision required by specification are reported as zero.  
 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.

*David A. Fink* July 26, 2007  
 Plant Manager, Certification Supervisor Date  
*David A. Fink* July 27, 2007  
 David A. Fink, Manager, Compliance Engineering, Date  
 Consumable R&D Department