



**ESAB Welding & Cutting Products**

CERTIFICATE OF CONFORMANCE  
TO SPECIFICATION REQUIREMENTS  
FOR WELDING ELECTRODES AND FLUXES

SECTION NO.: 6

SUPPLIED TO: QUANTITY:  
DIAMETER:  
HEAT:  
FLUX LOT:

This is to certify that Spoolarc 81 electrode, Classification EM12K, and ESAB OK Flux 10.62 submerged arc welding flux, AWS/ASME Classification F7A8-EM12K-H8, as supplied on the above order, are of the same classification, manufacturing process and material requirements as the flux-wire combination tested on January 21, 2010.

All tests required by Specification AWS/ASME SFA5.17 (F-No. 6) and ANSI/AWS A5.01 Schedule G were performed. The materials tested met all the requirements for Classification F7A8-EM12K-H8. The chemical composition of the electrode and mechanical properties of the deposited weld metal were as follows:

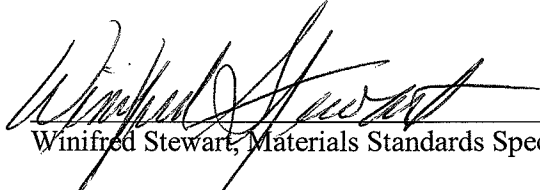
CHEMICAL COMPOSITION OF ELECTRODE						Total
<u>C</u>	<u>Mn</u>	<u>Si</u>	<u>S</u>	<u>P</u>	<u>Cu</u>	<u>Other Elements</u>
.11	.94	.21	.010	.006	.08	<.50

CHEMICAL COMPOSITION OF DEPOSITED WELD METAL (A No. 1)					
.09	1.04	.29	.005	.012	.07

WELD TEST NO.: 100121-1AW	AS-WELDED	CHARPY V-NOTCH IMPACT	
Radiography Test: Met all requirements		Ft-lbs @ -80°F (Joules @ -62°C)	
Tensile Test:		72	(97)
Yield Strength, ksi (MPa)	63.5 (438)	108	(146)
Tensile Strength, ksi (MPa)	75.0 (517)	81	(109)
Elongation, 2-in. %	32.5	116	(156)
		<u>29</u>	( <u>39</u> )
		87 (avg. 3)	(117) (avg. 3)

Welding Conditions:		Base Plate:	A515/516, 1 in. thick
Arc Voltage:	28.5	Set-up:	30° incl. angle, 1/2 in. root gap
Amperage:	535 DCEP	No. of Layers:	8 layers of 2 passes, 1 of 3
Travel Speed:	16 ipm	Preheat:	60°F min.
Diameter:	5/32 in.	Interpass:	300 ± 25°F

WELD METAL DIFFUSIBLE HYDROGEN  
ml/100g (Flux baked @ 800° F for 2 hours)  
5.1, 5.5, 5.4, 6.1 (5.5 avg.)

  
Winifred Stewart, Materials Standards Specialist