



**ESAB Welding & Cutting Products**

**CERTIFICATE OF CONFORMANCE  
TO SPECIFICATION REQUIREMENTS  
FOR WELDING ELECTRODES**

SECTION NO. 22

SUPPLIED TO:

YOUR ORDER NO.:  
QUANTITY:  
DIAMETER:  
HEAT:

This is to certify that Spoolarc 82 electrode, AWS/ASME Classification ER70S-3 H4, as supplied on the above order, are of the same classification, manufacturing process and material requirements as the electrode combination tested on April 25, 2011 using CO<sub>2</sub> shielding gas. It was manufactured and supplied according to the Quality System Program of ESAB Welding & Cutting Products, Ashtabula, Ohio, which meets the requirements of ISO9001, NCA3800, ANSI/AWS A5.01, and other specification and Military requirements, as applicable.

All tests required by Specification AWS /ASME SFA5.18 (F-No. 6) and ANSI/AWS A5.01 Schedule G were performed. The materials tested met all the requirements for Classification ER70S-3 H4. The chemical composition of the electrode and mechanical properties of the deposited weld metal were as follows:

CHEMICAL COMPOSITION OF ELECTRODE:

<u>C</u>	<u>Mn</u>	<u>Si</u>	<u>S</u>	<u>P</u>	<u>Cu</u>	<u>Ni</u>	<u>Cr</u>	<u>Mo</u>	<u>V</u>	Total <u>Other Elements</u>
.09	1.15	.50	.010	.011	.11	.03	.06	.01	<.01	<.50

CHEMICAL COMPOSITION OF DEPOSITED WELD METAL (A-No. 1):

.07	.80	.29	.016	.012	.12	.04	.05	.01	<.001
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WELD TEST NO.: 110425-1AW

AS-WELDED

CHARPY V-NOTCH IMPACT Weld 071213-1AW

Ft-Lbs @ 0°F (Joules @ -18°C)

Tensile Test:

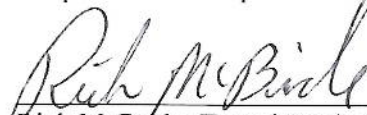
Yield Strength, ksi (MPa)	63.5 (438)	59	(80)
Tensile Strength, ksi (MPa)	77.0 (531)	24	(32)
Elongation, 2-in. %	28.0	32	(43)
		35	(47)
Radiography Test: Met all requirements		<u>55</u>	<u>(75)</u>
		40.7 (avg.3)	(55) (avg.3)

Welding Conditions:

Arc Voltage:	28.0	Base Plate:	A515/516 Gd. 70, 3/4 in. Thick
Amperage:	348 DCEP	Set-up:	45° incl. angle, 1/2 in. Root gap
Travel Speed:	13 ipm	No. of Layers:	3 layers of 2 passes, 3 layers of 3 passes
Diameter:	1/16 in.	Preheat/Interpass:	RT/300 ± 25°F

WELD METAL DIFFUSIBLE HYDROGEN  
ml/100g: 1.8, 2.2, 2.8, 3.0 (2.4 avg.)

The electrode diameter required to be tested for this classification is either .045 or 1/16 in. The .030, .035 and .052 sizes will also meet this requirement. This certification complies with the requirements of EN 10204 Type 2.2.

  
Rich McBride, Tested Products Supervisor

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