



**ESAB Welding & Cutting Products**

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

SECTION NO. 21

SUPPLIED TO:

YOUR ORDER NO.:  
QUANTITY:  
DIAMETER:  
HEAT:

This is to certify that Spoolarc 65 electrode, AWS/ASME Classification ER70S-2 H4, as supplied on the above order, are of the same classification, manufacturing process and material requirements as the electrode combination tested on April 30, 2010 using CO2 shielding gas.

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-2 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>Ti</u>	<u>Zr</u>	<u>Al</u>	Total <u>Other Elements</u>
.04	1.17	.54	.007	.007	.06	.03	.04	.01	.11	.05	.09	<.50

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

.06	.93	.39	.005	.008	.10	.06	.03	<.01	.04	.01	.03
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WELD TEST NO.: 100430-1AW  
AS-WELDED

CHARPY V-NOTCH IMPACT -

<u>Ft-Lbs @-20°F</u>	<u>(Joules) @ -29°C</u>
45	(61)
63	(85)
21	(28)
63	(85)
<u>48</u>	<u>(65)</u>
52 (avg. 3)	(70) (avg. 3)

Tensile Test:  
Yield Strength, ksi (MPa) 71.0 (489)  
Tensile Strength, ksi (MPa) 82.5 (568)  
Elongation, 2-in. % 28.5

Radiography Test: Met all requirements

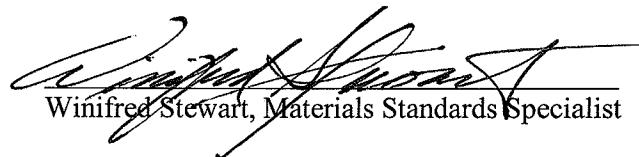
Welding Conditions:

Arc Voltage: 28.8  
Amperage: 373 DCEP  
Travel Speed: 13 ipm  
Diameter: 1/16 in.  
Preheat/Interpass: RT/300 ± 25°F

Base Plate: A515/516 Gd. 70, 3/4 in. Thick  
Set-up: 45° incl. angle, 1/2 in. Root gap  
No. of Layers: 5 layers of 2 passes, 1 of 4

WELD METAL DIFFUSIBLE HYDROGEN

ml/100g: 3.2, 1.7, 2.2, 1.8 (2.2 avg.)

  
Winifred Stewart, Materials Standards Specialist