



**ESAB Welding & Cutting Products**

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

SECTION NO.: 24

SUPPLIED TO:

YOUR ORDER NO.:  
QUANTITY:  
DIAMETER:  
HEAT:

This is to certify that Spoolarc 86 electrode, AWS/ASME Classification ER70S-6 H4, as supplied on the above order, are of the same classification, manufacturing process and material requirements as the electrode combination tested on February 1, 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-6 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>Total Other Elements</u> |
|----------|-----------|-----------|----------|----------|-----------|-----------|-----------|-----------|-----------------------------|
| .09      | 1.54      | .92       | .004     | .007     | .04       | .02       | .04       | .02       | <.50                        |

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

|     |      |     |       |      |     |     |     |      |
|-----|------|-----|-------|------|-----|-----|-----|------|
| .09 | 1.20 | .72 | <.003 | .008 | .08 | .03 | .05 | <.01 |
|-----|------|-----|-------|------|-----|-----|-----|------|

Weld Deposit Analysis meets the requirements of ASME Section IX A Number 1.

WELD TEST NO.: 100201-1AW

AS-WELDED

CHARPY V-NOTCH IMPACT  
Ft-Lbs @ -22°F (Joules @ -30°C)

Tensile Test:

|                             |            |         |
|-----------------------------|------------|---------|
| Yield Strength, ksi (MPa)   | 65.5 (451) | 44 (59) |
| Tensile Strength, ksi (MPa) | 82.5 (568) | 45 (61) |
| Elongation, 2-in. %         | 29.0       | 37 (50) |

Radiography Test: Met all requirements

|                         |
|-------------------------|
| 37 (50)                 |
| <u>56 (76)</u>          |
| 42 (avg.3) (57) (avg.3) |

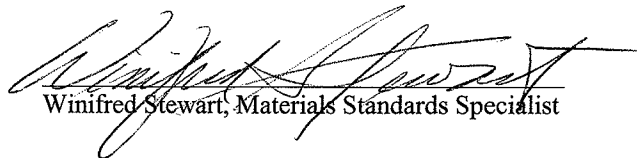
Welding Conditions:

Arc Voltage: 30.0  
Amperage: 341 DCEP  
Travel Speed: 12 ipm  
Diameter: 1/16 in.

Base Plate: A515/516 Gd. 70, 3/4 in. Thick  
Set-up: 45° incl. angle, 1/2 in. Root gap  
No. of Layers: 6 layers of 2 passes, 1 of 3 passes  
Preheat/Interpass: RT/300 ± 25°F

WELD METAL DIFFUSIBLE HYDROGEN  
ml/100g: 2.0, 1.8, 1.8, 2.7 (2.1 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.

  
Winifred Stewart, Materials Standards Specialist

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