

Certificate of Conformance for AWS D1.8

1. Trade designation: DW-50
2. Size: 1/16 in. (1.6 mm)
3. Shielding gas: 75%Ar-25%CO₂
4. Current/Polarity: DCEP
5. Specification: AWS A5.20
6. Classification: E71T-1C/M-H8, E71T-9C/M-H8
7. Factory: Ibaraki plant, Japan
8. Test condition:

| Heat input conditions | Low heat input | High heat input |
|---|----------------|------------------|
| Desired heat input level kJ/in. [kJ/cm] | 30 [12] | 79 [31] |
| Welding position | Flat(1G) | Vertical up (3G) |
| Welding Current Amp. | 300 | 200 |
| Arc Voltage V | 32 | 21 |
| Preheat temp. °F [°C] | ≤ 120 [≤ 49] | 250 ≤ [121 ≤] |
| Inter-pass temp. °F [°C] | ≤ 250 [≤ 121] | 450 ≤ [232 ≤] |

9. Test result:

| Wire diameter in. [mm] | Lot.No. | Average of Heat input kJ/in. [kJ/cm] | Layers -Passes | Tensile properties | | | Impact properties | | | | |
|------------------------|---------------------------|--------------------------------------|----------------|--------------------|-------------------|-------------------|------------------------------|-----------------|-----------|-----------|--|
| | | | | 0.2% O.S. | T.S. | EI | vE+70°F (21°C) ft-lbf [J] | | | | |
| | | | | ksi [MPa] | ksi [MPa] | (%) | 1 | 2 | 3 | Avg. | |
| 1/16 [1.6] | AJ980613802 [Original] | 33 [13] | 8-19 | 81 [561] | 92 [632] | 23 | 82 [111] | 83 [112] | 76 [103] | 80 [109] | |
| | | 71 [28] | 5-6 | 72 [495] | 88 [604] | 27 | 105 [143] | 107 [145] | 118 [160] | 110 [149] | |
| | AL8Y5113802 [Original] | 33 [13] | 8-19 | 80 [551] | 90 [619] | 25 | 91 [123] | 86 [117] | 87 [118] | 88 [119] | |
| | | 74 [29] | 5-6 | 75 [518] | 89 [614] | 28 | 119 [161] | 117 [158] | 114 [155] | 117 [158] | |
| | AL894313802 [Original] | 33 [13] | 8-18 | 84 [576] | 93 [642] | 23 | 61 [83] | 60 [82] | 58 [78] | 60 [81] | |
| | | 81 [32] | 5-6 | 77 [532] | 91 [628] | 29 | 117 [159] | 128 [174] | 119 [161] | 122 [165] | |
| | AL220513802 [Most recent] | 33 [13] | 8-20 | 80 [551] | 89 [616] | 25 | 114 [154] | 114 [154] | 108 [147] | 112 [152] | |
| | | 71 [28] | 5-8 | 72 [493] | 85 [586] | 30 | 125 [169] | 121 [164] | 122 [165] | 122 [166] | |
| | AWS D1.8 Spec. | Low heat input | 24-36 [9-14] | - | 58min. [400 min.] | 70min. [483 min.] | 22 min. | 40min. [54min.] | | | |
| | | High heat input | 63-95 [25-37] | - | | | | | | | |

10. Diffusible Hydrogen Test

| Condition | Lot. No. | Average(ml/100g) |
|---|----------|------------------|
| As Received | AF03935 | 5 |
| Exposure test (≥ 72hr) | AF03935 | 10 |
| Note 1: Testing method: AWS A5.20 | | |
| Note 2: Exposure conditions: AWS D1.8 Annex E | | |

Susumu Imaoka
 Manager of Quality Assurance Section
 Quality Management Dept.
 Welding Business
 KOBE STEEL, LTD.

Shintaro Ozaki
 QA Manager
 Ibaraki Plant
 Welding Business
 KOBE STEEL, LTD.