

**Certificate of Conformance for AWS D1.8**

1. Trade designation: DW-50
2. Size: 0.052 in. (1.3 mm)
3. Shielding gas: 100%CO<sub>2</sub>
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.                    | 280            | 220              |
| Arc Voltage V                           | 32             | 25               |
| 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)<br>ft-lbf [J] |                 |           |           |  |
|                        |                       |                                      |                | ksi [MPa]          | ksi [MPa]         | (%)               | 1                            | 2               | 3         | Avg.      |  |
| 0.052 [1.3]            | AF6Y515 [Original]    | 30 [12]                              | 7-16           | 76 [527]           | 86 [595]          | 27                | 109 [148]                    | 118 [160]       | 118 [160] | 115 [156] |  |
|                        |                       | 79 [31]                              | 5-6            | 63 [433]           | 76 [527]          | 31                | 119 [162]                    | 117 [158]       | 118 [160] | 118 [160] |  |
|                        | AZ6Z635 [Original]    | 30 [12]                              | 7-16           | 78 [537]           | 87 [601]          | 29                | 108 [146]                    | 120 [163]       | 121 [164] | 116 [158] |  |
|                        |                       | 84 [33]                              | 5-6            | 64 [441]           | 78 [541]          | 31                | 80 [108]                     | 77 [104]        | 77 [104]  | 78 [105]  |  |
|                        | AF6Z985 [Original]    | 30 [12]                              | 7-16           | 77 [529]           | 86 [590]          | 28                | 100 [136]                    | 117 [159]       | 107 [145] | 108 [147] |  |
|                        |                       | 84 [33]                              | 5-6            | 65 [449]           | 77 [534]          | 30                | 89 [121]                     | 88 [119]        | 86 [117]  | 88 [119]  |  |
|                        | AF21085 [Most recent] | 33 [13]                              | 7-16           | 78 [535]           | 87 [597]          | 29                | 118 [160]                    | 115 [156]       | 108 [146] | 114 [154] |  |
|                        |                       | 79 [31]                              | 5-6            | 62 [425]           | 75 [518]          | 31                | 127 [172]                    | 131 [178]       | 139 [188] | 132 [179] |  |
|                        | 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                                   | AF01085  | 4                |
| Exposure test (≥72hr)                         | AF01085  | 5                |
| Note 1: Testing method: AWS A5.20             |          |                  |
| Note 2: Exposure conditions: AWS D1.8 Annex E |          |                  |

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