

# CERTIFICATE OF CONFORMANCE



Electrode: **Outershield® 71 Elite**  
 Electrode Size **.052" (1.3 mm)**  
 Specification: **AWS D1.8:2021**  
 Date: **November 16, 2023**

This is to certify that the above listed product was manufactured to meet the Class T4 requirement of AWS A5.01 as required by clause 6.3.1.2 of AWS D1.8:2021.

It was manufactured and supplied according to a Quality System Program that meets the requirements of ISO9001 among others as documented on The Lincoln Electric web page (<http://www.lincolnelectric.com/en-us/company/Pages/certifications.aspx>).

| Operating Settings                            | High Heat Input Requirements | Low Heat Input Requirements | High Heat Input Results   | Low Heat Input Results   |
|---|------------------------------|-----------------------------|---------------------------|--------------------------|
| Electrode Lot                                 |                              |                             | 17627645                  | 17627645                 |
| Base Material                                 |                              |                             | ASTM A36 steel            | ASTM A36 steel           |
| Current Type/Polarity                         |                              |                             | DC+                       | DC+                      |
| Plate Thickness, mm (in)                      | (3/4)                        | (3/4)                       | 19 (3/4)                  | 19 (3/4)                 |
| Wire Feed Speed, cm/min (in/min)              |                              |                             | 572 (225)                 | 381 (150)                |
| Nominal Voltage, V                            |                              |                             | 24                        | 24                       |
| Nominal Current, A                            |                              |                             | 190                       | 140                      |
| Average Heat Input, kJ/mm (kJ/in)             | Not Specified                | Not Specified               | 2.4 (59.9)                | 1.0 (25.8)               |
| Travel Speed, cm/min (in/min)                 |                              |                             | 11 (4.5)                  | 21 (8.2)                 |
| Contact Tip to Work Distance, mm (in)         |                              |                             | 25 (1)                    | 25 (1)                   |
| Pass/Lavers                                   |                              |                             | 9/5                       | 24/9                     |
| Preheat Temperature, °C (°F)                  | (250 min.)                   | (120 max.)                  | 150 (300)                 | 20 (70)                  |
| Interpass Temperature, °C (°F)                | (450 min.)                   | (250 max.)                  | 260 (500)                 | 95 (200)                 |
| Postweld Heat Treatment                       | As-welded                    | As-welded                   | As-welded                 | As-welded                |
| Weld Position                                 |                              |                             | 3G                        | 1G                       |
| Shielding Gas                                 | Not Specified                | Not Specified               | 100% CO2                  | 100% CO2                 |
| <b>Mechanical properties of weld deposits</b> |                              |                             |                           |                          |
| Tensile Strength, MPa (ksi)                   | (70 min.)                    | (70 min.)                   | 540 (79)                  | 560 (81)                 |
| Yield Strength, 0.2% Offset, MPa (ksi)        | (58 min.)                    | (58 min.)                   | 470 (68)                  | 500 (73)                 |
| Elongation %                                  | 22 min.                      | 22 min.                     | 33                        | 27                       |
| Average Impact Energy                         | (40 min.)                    | (40 min.)                   | 160 (118)                 | 149 (110)                |
| Joules @ 21 °C (ft-lbs @ 70 °F)               |                              |                             | 157,160,164 (116,118,121) | 121,161,164 (89,119,121) |

- This document meets the requirements of AWS A5.01M/A5.01 Schedule F. When a specific lot number is referenced it also meets requirements of EN10204, type 2.2. It does not meet the requirements of type 3.1.
- The Charpy V-notch impact values reported at 21 °C (70 °F) are required when the Lowest Anticipated Service Temperature (LAST) is 10 °C (50 °F).
- Lot testing exemption as defined in AWS D1.8/D1.8M: 6.3.3 by testing a minimum of 3 lots for approval has been completed. For further questions please contact customer service. <https://www.lincolnelectric.com/en/Ask-the-Experts/Contact-Us>
- The strength and elongation properties reported here were obtained from tensile specimens artificially aged at 105°C (220°F) for 48 hours.
- Strength values in SI units are reported to the nearest 10 MPa converted from actual data. Preheat and interpass temperature values in SI units are reported to the nearest 5 degrees.

 November 16, 2023  
 Daniel Gaul, Certification Supervisor Date

 November 21, 2023  
 Chris Hood, Manager, Quality Assurance Date