**Product:** FabCO Excel-Arc 71
**Diameter:** .045”
**Shielding Gas:** C1 (100% CO2)
**Current/Polarity:** DCEP
**Classification:** E71T-1 H8, E71T-9 H8
**Specification:** AWS A5.20/A5.20M:2005
**Test Completed:** 8/16/2024

# Certificate of Conformance
## For AWS D1.8/D1.8M, Seismic Supplement

This is to certify that the product named herein is of the same classification, manufacturing process, and material requirements as the material used for the tests completed on the date shown, the results of which are recorded below. All tests required by the code or specifications were performed at that time and the material tested met all requirements. The product was manufactured and supplied by the Quality Management System of Hobart Brothers, which meets the requirements of ISO 9001:2015, ANSI/AWS A5.01, and other specification and Military requirements, as applicable.

| Test Settings | High Heat Input | Low Heat Input | Lot- # F000852301 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 84.4 kJ/in | 26.7 kJ/in | Mechanical Properties | | 84.4 kJ/in | 26.7 kJ/in |
| Voltage | 25 | 26 | Test Reference # | | PE2544 | PE2551 |
| Current (amps) | 225 | 250 | | | | |
| WFS (ipm) | 380 | 450 | | | | |
| Travel Speed (ipm) | 4 | 14.6 | Tensile Strength (psi) | 70,000 | 80,400 | 93,100 |
| Stick Out | 3/4“ | 3/4“ | Yield Strength (psi) | 58,000 | 69,900 | 87,000 |
| # of passes | 8 | 20 | Elongation (%) | 22 | 27 | 22 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 116 | 106 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # B611752703191 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 80.4 kJ/in | 27.9 kJ/in | Mechanical Properties | | 80.4 kJ/in | 27.9 kJ/in |
| Voltage | 25 | 26 | Test Reference # | | PD6265 | P6266 |
| Current (amps) | 225 | 250 | | | | |
| WFS (ipm) | 385 | 450 | | | | |
| Travel Speed (ipm) | 4.2 | 14 | Tensile Strength (psi) | 70,000 | 80,920 | 89,800 |
| Stick Out | 3/4“ | 3/4“ | Yield Strength (psi) | 58,000 | 72,700 | 83,500 |
| # of passes | 8 | 20 | Elongation (%) | 22 | 28 | 23 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 122 | 109 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # J60547 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 80.4 kJ/in | 30.3 kJ/in | Mechanical Properties | | 80.4 kJ/in | 30.3 kJ/in |
| Voltage | 25 | 26 | Test Reference # | | PE8214 | PE8515 |
| Current (amps) | 225 | 250 | | | | |
| WFS (ipm) | 385 | 450 | | | | |
| Travel Speed (ipm) | 4 | 13.2 | Tensile Strength (psi) | 70,000 | 83,100 | 91,300 |
| Stick Out | 3/4“ | 3/4“ | Yield Strength (psi) | 58,000 | 73,300 | 85,600 |
| # of passes | 8 | 16 | Elongation (%) | 22 | 27 | 24 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 120 | 118 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

**Diffusible Hydrogen - Tested in accordance with AWS A5.20/A5.20M, Clause 16 & Extended Exposure - in accordance with AWS D1.8/D1.8M**

| Condition | Lot - # | Test Reference # | Average (ml/100g) |
|---|---|---|---|
| As Received | J60547 | HB7665 | 6 (ml/100g) |
| 7 Day Exposure | J60547 | HB7738 | 9 (ml/100g) |



James Owens, Quality Assurance Specialist

**Product:** FabCO Excel-Arc 71
**Diameter:** .045”
**Shielding Gas:** M21-ArC-25
**Current/Polarity:** DCEP
**Classification:** E71T-1M H8, E71T-9M H8
**Specification:** AWS A5.20/A5.20M:2005
**Test Completed:** 8/16/2024

# Certificate of Conformance
## For AWS D1.8/D1.8M, Seismic Supplement

This is to certify that the product named herein is of the same classification, manufacturing process, and material requirements as the material used for the tests completed on the date shown, the results of which are recorded below. All tests required by the code or specifications were performed at that time and the material tested met all requirements. The product was manufactured and supplied by the Quality Management System of Hobart Brothers, which meets the requirements of ISO 9001:2015, ANSI/AWS A5.01, and other specification and Military requirements, as applicable.

| Test Settings | High Heat Input | Low Heat Input | Lot- # F000852301 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 82.3 kJ/in | 26.8 kJ/in | Mechanical Properties | | 82.3 kJ/in | 26.8 kJ/in |
| Voltage | 25 | 25 | Test Reference # | | PE2546 | PE2555 |
| Current (amps) | 225 | 250 | | | | |
| WFS (ipm) | 380 | 450 | | | | |
| Travel Speed (ipm) | 4.1 | 14 | Tensile Strength (psi) | 70,000 | 82,500 | 98,900 |
| Stick Out | 3/4“ | 3/4“ | Yield Strength (psi) | 58,000 | 72,000 | 95,500 |
| # of passes | 8 | 20 | Elongation (%) | 22 | 27 | 22 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 127 | 107 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # B614611305181 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 80.4 kJ/in | 28.4 kJ/in | Mechanical Properties | | 80.4 kJ/in | 28.4 kJ/in |
| Voltage | 25 | 26.5 | Test Reference # | | PD6466 | PD6465 |
| Current (amps) | 225 | 250 | | | | |
| WFS (ipm) | 385 | 460 | | | | |
| Travel Speed (ipm) | 4.2 | 14 | Tensile Strength (psi) | 70,000 | 90,500 | 99,400 |
| Stick Out | 3/4“ | 3/4“ | Yield Strength (psi) | 58,000 | 79,000 | 93,900 |
| # of passes | 8 | 18 | Elongation (%) | 22 | 32 | 23 |
| # of layers | 4 | 8 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 120 | 81 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # J60547 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 78.6 kJ/in | 29.2 kJ/in | Mechanical Properties | | 78.6 kJ/in | 29.2 kJ/in |
| Voltage | 25 | 25 | Test Reference # | | PE8212 | PE8213 |
| Current (amps) | 225 | 250 | | | | |
| WFS (ipm) | 385 | 450 | | | | |
| Travel Speed (ipm) | 4 | 14 | Tensile Strength (psi) | 70,000 | 88,700 | 100,000 |
| Stick Out | 3/4“ | 3/4“ | Yield Strength (psi) | 58,000 | 77,300 | 94,100 |
| # of passes | 8 | 19 | Elongation (%) | 22 | 31 | 23 |
| # of layers | 4 | 5 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 114 | 98 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

**Diffusible Hydrogen - Tested in accordance with AWS A5.20/A5.20M, Clause 16 & Extended Exposure - in accordance with AWS D1.8/D1.8M**

| Condition | Lot - # | Test Reference # | Average (ml/100g) |
|---|---|---|---|
| As Received | J60547 | HB7596 | 6 (ml/100g) |
| 7 Day Exposure | J60547 | HB7739 | 8 (ml/100g) |



James Owens, Quality Assurance Specialist

**Product:** FabCO Excel-Arc 71
**Diameter:** .052”
**Shielding Gas:** C1 (100% CO2)
**Current/Polarity:** DCEP
**Classification:** E71T-1C; E71T-9C H8
**Specification:** AWS A5.20/A5.20M:2005
**Test Completed:** 6/14/2024

# Certificate of Conformance
## For AWS D1.8/D1.8M, Seismic Supplement

This is to certify that the product named is of the same classification, manufacturing process, and material requirements as the material, which was used for the test which was concluded on the date shown, the results of which are shown below. All test required by the code or specifications were performed at that time and the material tested met all requirements. The product was manufactured and supplied by the Quality System Program of Hobart Brothers, which meets the requirements of ISO 9001:2015, ANSI/AWS A5.01, and other specification and Military requirements, as applicable.

| Test Settings | High Heat Input | Low Heat Input | Lot- # J01328 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 80.9 kJ/in | 29.7 kJ/in | Mechanical Properties | | 80.9 kJ/in | 29.7 kJ/in |
| Voltage | 24 | 26 | Test Reference # | | PE8109 | PE8108 |
| Current (amps) | 220 | 260 | | | | |
| WFS (ipm) | 245 | 360 | | | | |
| Travel Speed (ipm) | 4 | 14.5 | Tensile Strength (psi) | 70,000 | 81,500 | 92,800 |
| Stick Out | 3/4” | 3/4” | Yield Strength (psi) | 58,000 | 71,100 | 85,900 |
| # of passes | 8 | 18 | Elongation (%) | 22 | 31 | 26 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 93 | 120 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # J01257 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 81.5 kJ/in | 30.9 kJ/in | Mechanical Properties | | 81.5 kJ/in | 30.9 kJ/in |
| Voltage | 24 | 26 | Test Reference # | | PE8120 | PE8119 |
| Current (amps) | 220 | 260 | | | | |
| WFS (ipm) | 245 | 360 | | | | |
| Travel Speed (ipm) | 4 | 14 | Tensile Strength (psi) | 70,000 | 79,600 | 93,100 |
| Stick Out | 3/4” | 3/4” | Yield Strength (psi) | 58,000 | 69,300 | 86,500 |
| # of passes | 8 | 15 | Elongation (%) | 22 | 30 | 23 |
| # of layers | 4 | 6 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 78 | 113 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # J00119 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 78.3 kJ/in | 29 kJ/in | Mechanical Properties | | 78.3 kJ/in | 29 kJ/in |
| Voltage | 24 | 26 | Test Reference # | | PE7602 | PE7601 |
| Current (amps) | 216 | 260 | | | | |
| WFS (ipm) | 255 | 360 | | | | |
| Travel Speed (ipm) | 4 | 14 | Tensile Strength (psi) | 70,000 | 75,800 | 88,300 |
| Stick Out | 5/8“ | 5/8“ | Yield Strength (psi) | 58,000 | 65,900 | 81,700 |
| # of passes | 7 | 18 | Elongation (%) | 22 | 31 | 25 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 103 | 111 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

**Diffusible Hydrogen - Tested in accordance with AWS A5.20/A5.20M, Clause 16 & Extended Exposure - in accordance with AWS D1.8/D1.8M**

| Condition | Lot - # | Test Reference # | Average (ml/100g) |
|---|---|---|---|
| As Received | J00119 | HB7440 | 8 (ml/100g) |
| 7 Day Exposure | J00119 | HB4739 | 7 (ml/100g) |



James Owens, Quality Assurance Specialist

**Product:** FabCO Excel-Arc 71
**Diameter:** .052”
**Shielding Gas:** M21-ArC-25
**Current/Polarity:** DCEP
**Classification:** E71T-1M; E71T-9M H8
**Specification:** AWS A5.20/A5.20M:2005
**Test Completed:** 6/14/2024

# Certificate of Conformance
## For AWS D1.8/D1.8M, Seismic Supplement

This is to certify that the product named is of the same classification, manufacturing process, and material requirements as the material, which was used for the test which was concluded on the date shown, the results of which are shown below. All test required by the code or specifications were performed at that time and the material tested met all requirements. The product was manufactured and supplied by the Quality System Program of Hobart Brothers, which meets the requirements of ISO 9001:2015, ANSI/AWS A5.01, and other specification and Military requirements, as applicable.

| Test Settings | High Heat Input | Low Heat Input | Lot- # J01257 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 81.4 kJ/in | 29.8 kJ/in | Mechanical Properties | | 81.4kJ/in | 29.8 kJ/in |
| Voltage | 24.5 | 27 | Test Reference # | | PE8122 | PE8665 |
| Current (amps) | 225 | 250 | | | | |
| WFS (ipm) | 240 | 350 | | | | |
| Travel Speed (ipm) | 4 | 13.6 | Tensile Strength (psi) | 70,000 | 88,700 | 94,500 |
| Stick Out | 3/4” | 3/4” | Yield Strength (psi) | 58,000 | 76,200 | 87,900 |
| # of passes | 8 | 17 | Elongation (%) | 22 | 30 | 23 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | | | |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | 40 | 107 | 116 |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # J01328 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 81.0 kJ/in | 29.2 kJ/in | Mechanical Properties | | 81.0 kJ/in | 29.2 kJ/in |
| Voltage | 24.5 | 26 | Test Reference # | | PE8107 | PE8106 |
| Current (amps) | 225 | 260 | | | | |
| WFS (ipm) | 240 | 360 | | | | |
| Travel Speed (ipm) | 4 | 15 | Tensile Strength (psi) | 70,000 | 89,300 | 104,000 |
| Stick Out | 3/4” | 3/4” | Yield Strength (psi) | 58,000 | 78,200 | 97,500 |
| # of passes | 8 | 17 | Elongation (%) | 22 | 27 | 23 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | | | |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | 40 | 114 | 79 |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # J00119 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 81.6 kJ/in | 29.4 kJ/in | Mechanical Properties | | 81.6 kJ/in | 29.4 kJ/in |
| Voltage | 24.5 | 26.1 | Test Reference # | | PE7599 | PE7600 |
| Current (amps) | 222 | 259.1 | | | | |
| WFS (ipm) | 255 | 360 | | | | |
| Travel Speed (ipm) | 4 | 13.8 | Tensile Strength (psi) | 70,000 | 81,400 | 93,200 |
| Stick Out | 5/8“ | 3/4“ | Yield Strength (psi) | 58,000 | 70,500 | 86,800 |
| # of passes | 7 | 18 | Elongation (%) | 22 | 28 | 23 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | | | |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | 40 | 110 | 65 |
| Weld Position | 3G | 1G | | | | |

**Diffusible Hydrogen - Tested in accordance with AWS A5.20/A5.20M, Clause 16 & Extended Exposure - in accordance with AWS D1.8/D1.8M**

| Condition | Lot - # | Test Reference # | Average (ml/100g) |
|---|---|---|---|
| As Received | J00119 | HB7462 | 4 (ml/100g) |
| 7 Day Exposure | J00119 | HB7441 | 6 (ml/100g) |



James Owens, Quality Assurance Specialist

**Product:** FabCO Excel-Arc 71
**Diameter:** 1/16”
**Shielding Gas:** C1 (100% CO2)
**Current/Polarity:** DCEP
**Classification:** E71T-1 C/M, E71T-9 C/M H8
**Specification:** AWS A5.20/A5.20M:2005
**Test Completed:** 9/26/2022

# Certificate of Conformance
## For AWS D1.8/D1.8M, Seismic Supplement

This is to certify that the product named is of the same classification, manufacturing process, and material requirements as the material, which was used for the test which was concluded on the date shown, the results of which are shown below. All test required by the code or specifications were performed at that time and the material tested met all requirements. The product was manufactured and supplied by the Quality System Program of Hobart Brothers, which meets the requirements of ISO 9001:2015, ANSI/AWS A5.01, and other specification and Military requirements, as applicable.

| Test Settings | High Heat Input | Low Heat Input | Lot- # C604351904291 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 78.8 kJ/in | 31.0 kJ/in | Mechanical Properties | | 78.8 kJ/in | 31.0 kJ/in |
| Voltage | 24 | 26 | Test Reference # | | PD7581 | PD7733 |
| Current (amps) | 230 | 282 | | | | |
| WFS (ipm) | 170 | 240 | | | | |
| Travel Speed (ipm) | 4.2 | 13.9 | Tensile Strength (psi) | 70,000 | 83,000 | 86,000 |
| Stick Out | 3/4” | 3/4” | Yield Strength (psi) | 58,000 | 73,000 | 82,000 |
| # of passes | 8 | 17 | Elongation (%) | 22 | 26 | 25 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ +70 ºF | 40 | 144 | 111 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | | | | |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # Z601232203162 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 82.5 kJ/in | 31.0 kJ/in | Mechanical Properties | | 82.5 kJ/in | 31.0 kJ/in |
| Voltage | 28 | 27 | Test Reference # | | PD2034 | PD2033 |
| Current (amps) | 275 | 279 | | | | |
| WFS (ipm) | 235 | 240 | | | | |
| Travel Speed (ipm) | 4.0 | 15 | Tensile Strength (psi) | 70,000 | 72,600 | 83,100 |
| Stick Out | 3/4” | 3/4” | Yield Strength (psi) | 58,000 | 63,400 | 76,200 |
| # of passes | 7 | 21 | Elongation (%) | 22 | 31 | 25 |
| # of layers | 4 | 8 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ +70 ºF | 40 | 197 | 134 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | | | | |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # F04119 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 79.7 kJ/in | 31.2 kJ/in | Mechanical Properties | | 79.7 kJ/in | 31.2 kJ/in |
| Voltage | 24 | 27 | Test Reference # | | PE4413 | PE4416 |
| Current (amps) | 220 | 290 | | | | |
| WFS (ipm) | 170 | 245 | | | | |
| Travel Speed (ipm) | 4.02 | 14.8 | Tensile Strength (psi) | 70,000 | 71,400 | 82,700 |
| Stick Out | 5/8“ | 3/4“ | Yield Strength (psi) | 58,000 | 62,700 | 77,000 |
| # of passes | 7 | 17 | Elongation (%) | 22 | 31 | 25 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ +70 ºF | 40 | 116 | 115 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | | | | |
| Weld Position | 3G | 1G | | | | |

**Diffusible Hydrogen - Tested in accordance with AWS A5.20/A5.20M, Clause 16 & Extended Exposure - in accordance with AWS D1.8/D1.8M**

| Condition | Lot - # | Test Reference # | Average (ml/100g) |
|---|---|---|---|
| As Received | C600301902292 | HB6002 | 6.7 (ml/100g) |
| 7 Day Exposure | C600301902292 | HB6100 | 7.9 (ml/100g) |



James Owens, Quality Assurance Spec

**Product:** FabCO Excel-Arc 71
**Diameter:** 1/16”
**Shielding Gas:** M21-ArC-25
**Current/Polarity:** DCEP
**Classification:** E71T-1M H8, E71T-9M H8
**Specification:** AWS A5.20/A5.20M:2005
**Test Completed:** 9/27/2022

# Certificate of Conformance
## For AWS D1.8/D1.8M, Seismic Supplement

This is to certify that the product named is of the same classification, manufacturing process, and material requirements as the material, which was used for the test which was concluded on the date shown, the results of which are shown below. All test required by the code or specifications were performed at that time and the material tested met all requirements. The product was manufactured and supplied by the Quality System Program of Hobart Brothers, which meets the requirements of ISO 9001:2015, ANSI/AWS A5.01, and other specification and Military requirements, as applicable.

| Test Settings | High Heat Input | Low Heat Input | Lot- # C604351904291 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 78.8 kJ/in | 31.0 kJ/in | Mechanical Properties | | 78.8 kJ/in | 31.0 kJ/in |
| Voltage | 24 | 25.5 | Test Reference # | | PD7581 | PD7733 |
| Current (amps) | 230 | 282 | | | | |
| WFS (ipm) | 170 | 240 | | | | |
| Travel Speed (ipm) | 4.2 | 13.9 | Tensile Strength (psi) | 70,000 | 83,000 | 90,000 |
| Stick Out | 3/4” | 3/4” | Yield Strength (psi) | 58,000 | 73,000 | 82,000 |
| # of passes | 8 | 17 | Elongation (%) | 22 | 26 | 24 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 144 | 126 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # Z601232203162 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 79.2 kJ/in | 31.0 kJ/in | Mechanical Properties | | 79.2 kJ/in | 31.0 kJ/in |
| Voltage | 24 | 25.5 | Test Reference # | | PD1878 | PD1876 |
| Current (amps) | 220 | 282 | | | | |
| WFS (ipm) | 170 | 230 | | | | |
| Travel Speed (ipm) | 4.0 | 13.9 | Tensile Strength (psi) | 70,000 | 84,000 | 94,000 |
| Stick Out | 3/4” | 3/4” | Yield Strength (psi) | 58,000 | 72,000 | 84,000 |
| # of passes | 8 | 19 | Elongation (%) | 22 | 30 | 24 |
| # of layers | 4 | 8 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 128 | 126 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

| Test Settings | High Heat Input | Low Heat Input | Lot- # F04119 | AWS D1.8 Requirements | High Heat Input | Low Heat Input |
|---|---|---|---|---|---|---|
| | 79.4 kJ/in | 30.6 kJ/in | Mechanical Properties | | 79.4 kJ/in | 30.6 kJ/in |
| Voltage | 24.5 | 25.6 | Test Reference # | | PE4417 | PE4418 |
| Current (amps) | 225 | 289 | | | | |
| WFS (ipm) | 170 | 245 | | | | |
| Travel Speed (ipm) | 4.03 | 14.3 | Tensile Strength (psi) | 70,000 | 78,100 | 89,000 |
| Stick Out | 3/4“ | 3/4“ | Yield Strength (psi) | 58,000 | 66,900 | 84,100 |
| # of passes | 8 | 17 | Elongation (%) | 22 | 30 | 25 |
| # of layers | 4 | 7 | Average Charpy V-notch | | | |
| Preheat Temp. ºF | 300+/-25 | RT | Impact Properties ft•lbs @ | 40 | 122 | 134 |
| Interpass Temp. ºF | 500+/-50 | 200+/-25 | +70 ºF | | | |
| Weld Position | 3G | 1G | | | | |

**Diffusible Hydrogen - Tested in accordance with AWS A5.20/A5.20M, Clause 16 & Extended Exposure - in accordance with AWS D1.8/D1.8M**

| Condition | Lot - # | Test Reference # | Average (ml/100g) |
|---|---|---|---|
| As Received | F04119 | HB6003 | 7.0 (ml/100g) |
| 7 Day Exposure | F04119 | HB6025 | 10.3 (ml/100g) |



James Owens, Quality Assurance Specialist