



Product: SubCOR EM13K-S MOD
Diameter: 1/8"
Flux Type: HN-590
Current/Polarity: DCEP
Classification: F7A8-EC1-H8
Specification: AWS A5.17/A5.17M
Test Completed: 1/24/2023

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 - # G01695	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	80.7 kJ/in	38.9 kJ/in			80.7 kJ/in	38.9 kJ/in
			Mechanical Properties			
			Test Reference #		PE4761	PE4762
Voltage	28.5	28.5	Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch Impact Properties ft•lbs @ 70°F 0 °F	70,000 58,000 22 40 40	77,500 60,300 31 161 115	85,400 76,900 27 116 115
Current (amps)	525	525				
WFS (ipm)	100	100				
Travel Speed (ipm)	11.11	23				
Stick Out	1"	1"				
# of passes	8	17				
# of layers	5	6				
Preheat Temp. °F	250	70				
Interpass Temp. °F	450	250				
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot - # G01812	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	70.3 kJ/in	38.9 kJ/in			70.3 kJ/in	38.9 kJ/in
			Mechanical Properties			
			Test Reference #		PE5127	PE4752
Voltage	30	28.5	Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch Impact Properties ft•lbs @ 70°F 0 °F	70,000 58,000 22 40 40	79,000 60,100 31 142 108	84,000 72,400 27 162 149
Current (amps)	425	525				
WFS (ipm)	75	100				
Travel Speed (ipm)	10.9	23				
Stick Out	1.5"	1"				
# of passes	10	17				
# of layers	5	6				
Preheat Temp. °F	250	70				
Interpass Temp. °F	450	250				
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot - # G00569	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	70.3 kJ/in	40.1 kJ/in			70.3 kJ/in	40.1 kJ/in
			Mechanical Properties			
			Test Reference #		PE5243	PE5254
Voltage	30	28.5	Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch Impact Properties ft•lbs @ 70°F 0 °F	70,000 58,000 22 40 40	76,400 60,500 31 173 109	83,600 72,000 28 140 108
Current (amps)	425	425				
WFS (ipm)	75	70				
Travel Speed (ipm)	9.7	18.2				
Stick Out	1.5"	1"				
# of passes	10	17				
# of layers	5	7				
Preheat Temp. °F	250	70				
Interpass Temp. °F	450	250				
Weld Position	1G	1G				

**Diffusible Hydrogen - Tested in accordance with AWS A5.17/A5.17M, Clause A8
& Extended Exposure - in accordance with AWS D1.8/D1.8M**

Condition	Lot - #	Test Reference #	Average (ml/100g)
As Received	G00569	HB6445	5.9 (ml/100g)

The information contained or otherwise referenced herein is presented without guarantee or warranty. Hobart Brothers LLC expressly disclaims any liability incurred from any reliance thereon. Data for the above-supplied product are those obtained during the welding process and tested in accordance with the above specification with electrodes of the same manufacturing processes and material requirements. All tests for the above classification were performed satisfactorily. No data is to be construed as a recommendation for any welding condition or technique not controlled by Hobart Brothers. Refer to the Hobart Brothers website at www.hobartbrothers.com for current Safety Data Sheets ("SDS").

James Owens, Quality Assurance Specialist



Product: SubCOR EM13K-S MOD
Diameter: 5/32"
Flux Type: HN-590
Current/Polarity: DCEP
Classification: F7A8-EC1-H8
Specification: AWS A5.17/A5.17M
Test Completed: 1/25/2023

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 - # G01577	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	70.7 kJ/in	39.1 kJ/in			70.7 kJ/in	39.1 kJ/in
			Mechanical Properties			
			Test Reference #		PE5506	PE5504
Voltage	30	30	Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch Impact Properties ft•lbs @ 70°F 0 °F	70,000 58,000 22 40 40	74,700	86,000
Current (amps)	475	525			74,300	74,300
WFS (ipm)	55	60			25	25
Travel Speed (ipm)	12.1	24.4			134	134
Stick Out	1.5"	1.25"			99	99
# of passes	11	20				
# of layers	5	8				
Preheat Temp. °F	250	70				
Interpass Temp. °F	450	250				
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot - # G01666	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	70.7 kJ/in	38.9 kJ/in			70.7 kJ/in	38.9 kJ/in
			Mechanical Properties			
			Test Reference #		PE5512	PE5513
Voltage	30	30	Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch Impact Properties ft•lbs @ 70°F 0 °F	70,000 58,000 22 40 40	76,900	87,200
Current (amps)	475	525			73,000	73,000
WFS (ipm)	55	60			25	25
Travel Speed (ipm)	12.1	23			119	119
Stick Out	1.5"	1.25"			89	89
# of passes	11	20				
# of layers	5	8				
Preheat Temp. °F	250	70				
Interpass Temp. °F	450	250				
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot - # G02409	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	70.7 kJ/in	40.1 kJ/in			70.7 kJ/in	40.1 kJ/in
			Mechanical Properties			
			Test Reference #		PE5109	PE5254
Voltage	30	30	Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch Impact Properties ft•lbs @ 70°F 0 °F	70,000 58,000 22 40 40	76,400	86,800
Current (amps)	475	525			76,300	76,300
WFS (ipm)	65	65			26	26
Travel Speed (ipm)	12.8	23.5			132	132
Stick Out	1.5"	1.25"			106	106
# of passes	11	17				
# of layers	5	7				
Preheat Temp. °F	250	70				
Interpass Temp. °F	450	250				
Weld Position	1G	1G				

**Diffusible Hydrogen - Tested in accordance with AWS A5.17/A5.17M, Clause A8
& Extended Exposure - in accordance with AWS D1.8/D1.8M**

Condition	Lot - #	Test Reference #	Average (ml/100g)
As Received	G02409	HB6446	6.6 (ml/100g)

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