Product: FabCOR 86R
Diameter: .045”
Shielding Gas: M21-ArC-25
Current/Polarity: DCEP
Classification: E70C-6M H4
Specification: AWS A5.18/A5.18M:2017
Test Completed: 11/02/2022

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- # B624993101123	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	78.4 kJ/in	28.0 kJ/in	Mechanical Properties		78.4 kJ/in	28.0 kJ/in
Voltage	28.5	28.5	Test Reference #		PD7072	PD7172
Current (amps)	275	275				
WFS (ipm)	420	420				
Travel Speed (ipm)	6	17.2	Tensile Strength (psi)	70,000	75,000	90,000
Stick Out	3/4”	1/2”	Yield Strength (psi)	58,000	60,000	81,000
# of passes	7	16	Elongation (%)	22	31	26
# of layers	4	6	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @	40	91	101
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF			
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # Z619202406111	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	78.4 kJ/in	28.8 kJ/in	Mechanical Properties		78.4 kJ/in	28.8 kJ/in
Voltage	28.5	28.5	Test Reference #		PD2377	PD2372
Current (amps)	275	280				
WFS (ipm)	420	407				
Travel Speed (ipm)	6	16.6	Tensile Strength (psi)	70,000	76,000	91,000
Stick Out	5/8”	3/4”	Yield Strength (psi)	58,000	60,000	79,000
# of passes	8	16	Elongation (%)	22	32	28
# of layers	4	6	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @	40	110	108
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF			
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # G60305	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	78.4 kJ/in	31.1 kJ/in	Mechanical Properties		78.4 kJ/in	31.1 kJ/in
Voltage	28.5	28.5	Test Reference #		PE4885	PE4796
Current (amps)	275	275				
WFS (ipm)	415	415				
Travel Speed (ipm)	6	16.37	Tensile Strength (psi)	70,000	72,000	81,000
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	58,000	70,000
# of passes	8	17	Elongation (%)	22	32	27
# of layers	4	6	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @	40	149	83
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF			
Weld Position	1G	1G				

Diffusible Hydrogen - Tested in accordance with AWS A5.18/A5.18M, Clause 15 & Extended Exposure - in accordance with AWS D1.8/D1.8M

Condition	Lot - #	Test Reference #	Average (ml/100g)
As Received	G60305	HB6206	2.7 (ml/100g)
7 Day Exposure	G60305	HB6230	4.5 (ml/100g)

James Owens, QualityAssurance Specialist

Product: FabCOR 86R
Diameter: .045”
Shielding Gas: M20-ArC-15
Current/Polarity: DCEP
Classification: E70C-6M H4
Specification: AWS A5.18/A5.18M
Test Completed: 5/27/2022

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- # G91101	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	79.1 kJ/in	28.7 kJ/in	Mechanical Properties		79.1 kJ/in	28.7 kJ/in
Voltage	26.5	26.5	Test Reference #		PE4037	PE4036
Current (amps)	285	285				
WFS (ipm)	430	430				
Travel Speed (ipm)	5.74	15.97	Tensile Strength (psi)	70,000	77,700	91,800
Stick Out	1/2”	1/2”	Yield Strength (psi)	58,000	61,400	83,400
# of passes	7	16	Elongation (%)	22	32	25
# of layers	4	6	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @			
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF	40	103	110
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # G91136	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	80.6 kJ/in	29.0 kJ/in	Mechanical Properties		80.6 kJ/in	29.0 kJ/in
Voltage	26.5	26.5	Test Reference #		PE4067	PE4022
Current (amps)	285	285				
WFS (ipm)	430	430				
Travel Speed (ipm)	5.68	15.73	Tensile Strength (psi)	70,000	75,300	88,200
Stick Out	1/2”	1/2”	Yield Strength (psi)	58,000	59,900	76,800
# of passes	7	16	Elongation (%)	22	30	24
# of layers	4	6	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @			
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF	40	96	100
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # G91257	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	79.2 kJ/in	29.7 kJ/in	Mechanical Properties		79.2 kJ/in	29.7 kJ/in
Voltage	26.5	26.5	Test Reference #		PE4013	PE4012
Current (amps)	285	285				
WFS (ipm)	430	430				
Travel Speed (ipm)	5.77	15.4	Tensile Strength (psi)	70,000	81,600	90,900
Stick Out	1/2”	1/2”	Yield Strength (psi)	58,000	70,000	81,100
# of passes	7	16	Elongation (%)	22	26	25
# of layers	4	6	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @			
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF	40	81	91
Weld Position	1G	1G				

Diffusible Hydrogen - Tested in accordance with AWS A5.18/A5.18M, Clause 15 & Extended Exposure - in accordance with AWS D1.8/D1.8M

Condition	Lot - #	Test Reference #	Average (ml/100g)
As Received	G91101	HB5709	3.0 (ml/100g)
7 Day Exposure	G91101	HB5755	2.8 (ml/100g)

David A. Thomas, Quality Assurance Specialist

Product: FabCOR 86R
Diameter: .052”
Shielding Gas: M20-ArC-15
Current/Polarity: DCEP
Classification: E70C-6M H4
Specification: AWS A5.18/A5.18M:2017
Test Completed: 3/25/2020

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

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Test Settings	High Heat Input	Low Heat Input	Lot- # C624501101101	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	80.3 kJ/in	25.0 kJ/in	Mechanical Properties		80.3 kJ/in	25.0 kJ/in
Voltage	31.5	25	Test Reference #		PD9352	PD9351
Current (amps)	425	250				
WFS (ipm)	500	270				
Travel Speed (ipm)	8	15	Tensile Strength (psi)	70,000	78,000	90,000
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	65,000	80,000
# of passes	8	20	Elongation (%)	22	32	27
# of layers	4	7	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @	40	101	85
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF			
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # A605481102171	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	80.3 kJ/in	25.0 kJ/in	Mechanical Properties		80.3 kJ/in	25.0 kJ/in
Voltage	31.5	25	Test Reference #		PD3643	PD3644
Current (amps)	425	250				
WFS (ipm)	455	225				
Travel Speed (ipm)	10	15	Tensile Strength (psi)	70,000	71,600	87,400
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	60,800	77,800
# of passes	8	20	Elongation (%)	22	27	29
# of layers	4	7	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @	40	143	134
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF			
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # A605251116171	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	80.3 kJ/in	25.0 kJ/in	Mechanical Properties		80.3 kJ/in	25.0 kJ/in
Voltage	31.5	25	Test Reference #		PD3643	PD3644
Current (amps)	425	250				
WFS (ipm)	455	225				
Travel Speed (ipm)	10	15	Tensile Strength (psi)	70,000	72,000	87,000
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	61,000	78,000
# of passes	8	20	Elongation (%)	22	27	29
# of layers	4	7	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @	40	143	134
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF			
Weld Position	1G	1G				

Diffusible Hydrogen - Tested in accordance with AWS A5.18/A5.18M, Clause 15 & Extended Exposure - in accordance with AWS D1.8/D1.8M

Condition	Lot - #	Test Reference #	Average (ml/100g)
As Received	C624501101101	HB3969	2.5 (ml/100g)
7 Day Exposure	C624501101101	HB3990	3.5 (ml/100g)

David A. Thomas, Quality Assurance Representative

Product: FabCOR 86R
Diameter: 1/16”
Shielding Gas: M20-ArC-15
Current/Polarity: DCEP
Classification: E70C-6M H4
Specification: AWS A5.18/A5.18M
Test Completed: 6/5/2020

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

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Test Settings	High Heat Input	Low Heat Input	Lot- # D601162507302	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	81.2 kJ/in	30.1 kJ/in	Mechanical Properties		81.2 kJ/in	30.1 kJ/in
Voltage	29	26	Test Reference #		PD9607	PD9578
Current (amps)	420	255				
WFS (ipm)	350	170				
Travel Speed (ipm)	9	12.8	Tensile Strength (psi)	70,000	72,100	83,700
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	58,000	73,300
# of passes	5	19	Elongation (%)	22	31	27
# of layers	3	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	115	111
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # A608700107081	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	80.2 kJ/in	25.2 kJ/in	Mechanical Properties		80.2 kJ/in	25.2 kJ/in
Voltage	28	25	Test Reference #		PD4032	PD4081
Current (amps)	420	260				
WFS (ipm)	315	160				
Travel Speed (ipm)	8.8	15.5	Tensile Strength (psi)	70,000	73,700	83,600
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	59,200	71,600
# of passes	7	20	Elongation (%)	22	33	25
# 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	57	102
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # A6090801074021	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	80.2 kJ/in	25.2 kJ/in	Mechanical Properties		80.2 kJ/in	25.2 kJ/in
Voltage	28	25	Test Reference #		PD4054	PD4055
Current (amps)	420	260				
WFS (ipm)	315	160				
Travel Speed (ipm)	8.8	15.5	Tensile Strength (psi)	70,000	76,500	87,100
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	60,200	76,200
# of passes	7	20	Elongation (%)	22	30	25
# 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	94	109
Weld Position	1G	1G				

Diffusible Hydrogen - Tested in accordance with AWS A5.18/A5.18M, Clause 15 & Extended Exposure - in accordance with AWS D1.8/D1.8M

Condition	Lot - #	Test Reference #	Average (ml/100g)
As Received	D601162507302	HB4213	3.4 (ml/100g)
7 Day Exposure	D601162507302	HB4214	3.4 (ml/100g)

David A. Thomas, Quality Assurance Representative

Product: FabCOR 86R
Diameter: 1/16”
Shielding Gas: M21-ArC-25
Current/Polarity: DCEP
Classification: E70C-6M H4
Specification: AWS A5.18/A5.18M:2021
Test Completed: 3/17/2022

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

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Test Settings	High Heat Input	Low Heat Input	Lot- # G60184	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	79.4 kJ/in	30.1 kJ/in	Mechanical Properties		79.4 kJ/in	30.1 kJ/in
Voltage	29	28	Test Reference #		PE3767	PE3771
Current (amps)	430	275				
WFS (ipm)	350	190				
Travel Speed (ipm)	9.2	15.4	Tensile Strength (psi)	70,000	79,000	81,000
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	60,000	69,000
# of passes	8	20	Elongation (%)	22	30	28
# of layers	4	7	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @	40	82	114
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF			
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # B602360101182	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	83.6 kJ/in	30.1 kJ/in	Mechanical Properties		83.6 kJ/in	30.1 kJ/in
Voltage	29	26	Test Reference #		PD7158	PD7154
Current (amps)	420	255				
WFS (ipm)	369	170				
Travel Speed (ipm)	8.8	13	Tensile Strength (psi)	70,000	74,000	86,000
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	58,000	74,000
# of passes	6	20	Elongation (%)	22	32	26
# of layers	3	7	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @	40	76	96
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF			
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # Z60121010221	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	83.6 kJ/in	30.1 kJ/in	Mechanical Properties		83.6 kJ/in	30.1 kJ/in
Voltage	29	26	Test Reference #		PD0514	PD0525
Current (amps)	420	255				
WFS (ipm)	369	170				
Travel Speed (ipm)	8.8	13	Tensile Strength (psi)	70,000	83,000	86,000
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	68,000	76,000
# of passes	6	20	Elongation (%)	22	29	28
# of layers	3	7	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @	40	83	95
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF			
Weld Position	1G	1G				

Diffusible Hydrogen - Tested in accordance with AWS A5.18/A5.18M, Clause 15 & Extended Exposure - in accordance with AWS D1.8/D1.8M

Condition	Lot - #	Test Reference #	Average (ml/100g)
As Received	G60077	HB5525	1.9 (ml/100g)
7 Day Exposure	G60077	HB5542	2.3 (ml/100g)

David A. Thomas, Quality Assurance Specialist

Product: FabCOR 86R
Diameter: 3/32”
Shielding Gas: M20-ArC-15
Current/Polarity: DCEP
Classification: E70C-6M H4
Specification: AWS A5.18/A5.18M
Test Completed: 4/19/2021

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 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 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- # D01724	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	80.8 kJ/in	41.1 kJ/in	Mechanical Properties		80.8 kJ/in	41.1 kJ/in
Voltage	31.5	27	Test Reference #		PE2223	PE2230
Current (amps)	500	350				
WFS (ipm)	170	110				
Travel Speed (ipm)	11.7	13.8	Tensile Strength (psi)	70,000	82,000	93,400
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	64,800	82,700
# of passes	8	14	Elongation (%)	22	26	26
# of layers	4	6	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @			
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF	40	84	97
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # D01732	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	82.2 kJ/in	40.5 kJ/in	Mechanical Properties		82.2 kJ/in	40.5 kJ/in
Voltage	31.5	27	Test Reference #		PE2218	PE2224
Current (amps)	500	350				
WFS (ipm)	180	110				
Travel Speed (ipm)	11.5	14	Tensile Strength (psi)	70,000	80,100	87,800
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	61,600	77,300
# of passes	7	14	Elongation (%)	22	29	26
# of layers	4	6	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	137
Weld Position	1G	1G				

Test Settings	High Heat Input	Low Heat Input	Lot- # F02543	AWS D1.8 Requirements	High Heat Input	Low Heat Input
	79.4 kJ/in	39.6 kJ/in	Mechanical Properties		79.4 kJ/in	39.6 kJ/in
Voltage	31.5	27	Test Reference #		PE2248	PE2237
Current (amps)	500	350				
WFS (ipm)	180	110				
Travel Speed (ipm)	11.9	14.3	Tensile Strength (psi)	70,000	87,400	90,500
Stick Out	3/4”	3/4”	Yield Strength (psi)	58,000	65,200	79,100
# of passes	9	14	Elongation (%)	22	26	26
# of layers	5	6	Average Charpy V-notch			
Preheat Temp. ºF	300+/-25	RT	Impact Properties ft•lbs @			
Interpass Temp. ºF	500+/-50	200+/-25	+70 ºF	40	80	108
Weld Position	1G	1G				

Diffusible Hydrogen - Tested in accordance with AWS A5.18/A5.18M, Clause 15 & Extended Exposure - in accordance with AWS D1.8/D1.8M

Condition	Lot - #	Test Reference #	Average (ml/100g)
As Received	D01732	HB4800	3.1 (ml/100g)
7 Day Exposure	F02543	HB4814	3.2 (ml/100g)

David A. Thomas, Quality Assurance Representative