

Product: FabCO RXR Diameter: 1/16" Shielding Gas: C1 (100% CO2) Current/Polarity: DCEP Classification: E70T-1, E70T-9 Specification: AWS A5.20/A5.20M:2021 Test Completed: 9/06/2022

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 In	put Low Heat Input	Lot	·# F06236	AWS D1.8		High Heat Input	Low Heat Input	
	84.7 kJ/ir	31.2 kJ/in		Mechanical Properties	Requirer	nents	84.7 kJ/in	31.2 kJ/in	
Voltage	32	28		Test Reference #			PE4264	PE4256	
Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. ºF Interpass Temp. ºF Weld Position	400 420 9.1 3/4" 7 4 300+/-2! 500+/-50 1G	250 210 13.4 3/4" 20 7 5 RT 0 200+/-25 1G	, Iı	Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch npact Properties ft•lbs @ +70 ⁰F	70,0 58,0 22 40	00	84,000 67,500 25 82	93,200 84,400 23 62	
Test Settings	High Heat In	put Low Heat Input	Lot	# C000671202441			High Heat Input	Low Heat Input	
g_	79.1 kJ/ir	28.7 kJ/in		Mechanical Properties	Requirer	nents	79.1 kJ/in	28.7 kJ/in	
Voltage	32	28		Test Reference #			PD8033	PD8041	
Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. % Interpass Temp. % Weld Position	400 420 9.7 3/4" 8 4 300+/-25 500+/-50 1G	250 210 14.6 3/4" 20 7 5 RT 200+/-25 1G	,	Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch npact Properties ft•lbs @ +70 ⁰F	70,0 58,0 22 40	00 00 2	92,100 77,800 27 64	98,700 82,200 23 44	
Test Settings High Hea		put Low Heat Input	Lot	· # Z020301601432			High Heat Input	Low Heat Input	
	81.5 kJ/ir	29.4 kJ/in		Mechanical Properties	Requireme		81.5 kJ/in	29.4 kJ/in	
Voltage	32	28		Test Reference #			PD1897	PC0802	
Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. ^o F Interpass Temp. ^o F Weld Position	400 400 9.4 3/4" 7 4 300+/-25 500+/-50 1G	250 210 14.3 3/4" 23 8 75 RT 200+/-25 1G	, II	Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch mpact Properties ft•lbs @ +70 ⁰F	70,000 58,000 22 40		86,800 71,900 29 79	100,000 94,400 23 65	
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		F06236		HB6001		4.9 (ml/100g)			

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F06236

7 Day Exposure

7.4 (ml/100g)

HB3173

James Owens, Quality Assurance Specialist



Product: FabCO RXR Diameter: 3/32" Shielding Gas: C1 (100% CO2) Current/Polarity: DCEP Classification: E70T-1, E70T-9C Specification: AWS A5.20/A5.20M:2021 Test Completed: 2/24/2022

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

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Test Settings	High Heat Inpu	It Low Heat Input	Lot- #	G00091	AWS D1.8		High Heat Input	Low Heat Input
	82.5 kJ/in	40.0 kJ/in		Mechanical Properties	Requirem	nents	82.5 kJ/in	40.0 kJ/in
	0.4	00		Test Reference #			PE3559	PE3603
Voltage Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. ^o F Interpass Temp. ^o F Weld Position	34 550 240 13.6 1" 8 4 300+/-25 500+/-50 1G	28 350 125 14.7 1" 17 6 RT 200+/-25 1G	۲ Av Imp	Fensile Strength (psi) Yield Strength (psi) Elongation (%) verage Charpy V-notch bact Properties ft∙lbs @ +70 ⁰F	70,000 58,000 22 40	00	86,000 70,000 24 59	95,000 84,000 24 68
Toot Cottingo	Link Lost Inn			D040024042952	1		High Heat Input	Low Heat Innut
Test Settings			Lot- #	Machanical Bronartics	AWS D Requirem	1.8 nents		27.9 k l/im
	04.4 KJ/IN	37.0 KJ/IN					04.4 KJ/III	37.0 KJ/III
Voltage	34	27		lest Reference #			PD/1/0	FD/135
Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. ^o F Interpass Temp. ^o F Weld Position	550 240 13 1" 7 4 300+/-25 500+/-50 1G	350 125 15 1" 14 6 RT	۲ Av Imp	Tensile Strength (psi) Yield Strength (psi) Elongation (%) verage Charpy V-notch pact Properties ft•lbs @	70,00 58,00 22	00 00	92,000 77,000 27	99,000 89,000 24
Interpass Temp. ^o F Weld Position	500+/-50 1G	200+/-25 1G		+70 1	-0		54	00
Interpass Temp. ^o F Weld Position	500+/-50 1G	200+/-25 1G	L ot- #	7002191114072			U-4 High Heat Input	
Interpass Temp. ^o F Weld Position Test Settings	500+/-50 1G High Heat Inpu 80.1 k.//in	200+/-25 1G It Low Heat Input 37.8 k.//in	Lot- #	Z002191114072 Mechanical Properties	AWS D Requirem	1.8 nents	High Heat Input 80.1 k.l/in	Low Heat Input
Interpass Temp. ^o F Weld Position Test Settings	500+/-50 1G High Heat Inpu 80.1 kJ/in	200+/-25 1G It Low Heat Input 37.8 kJ/in	Lot- #	Z002191114072 Mechanical Properties Test Reference #	- AWS D Requirem	1.8 nents	High Heat Input 80.1 kJ/in PD0546	Low Heat Input 37.8 kJ/in PD0535
Interpass Temp. ^o F Weld Position Test Settings Voltage Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. ^o F Interpass Temp. ^o F Weld Position	500+/-50 1G High Heat Inpu 80.1 kJ/in 34 550 225 14 1" 8 4 300+/-25 500+/-50 1G	200+/-25 1G it Low Heat Input 37.8 kJ/in 27 350 125 15 1" 14 6 RT 200+/-25 1G	Lot- #	Z002191114072 Mechanical Properties Test Reference # Fensile Strength (psi) Yield Strength (psi) Elongation (%) verage Charpy V-notch bact Properties ft•lbs @ +70 °F	- AWS D Requiren 70,00 58,00 22 40	1.8 lents	High Heat Input 80.1 kJ/in PD0546 90,000 74,000 26 70	Low Heat Input 37.8 kJ/in PD0535 99,000 92,000 23 60
Interpass Temp. ^o F Weld Position Test Settings Voltage Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. ^o F Interpass Temp. ^o F Weld Position	500+/-50 1G High Heat Inpu 80.1 kJ/in 34 550 225 14 1" 8 4 300+/-25 500+/-50 1G Dif	200+/-25 1G it Low Heat Input 37.8 kJ/in 27 350 125 15 1" 14 6 RT 200+/-25 1G fusible Hydrogen - Te	Lot- #	Z002191114072 Mechanical Properties Test Reference # Fensile Strength (psi) Yield Strength (psi) Elongation (%) verage Charpy V-notch pact Properties ft•lbs @ +70 °F	- AWS D Requirem 70,00 58,00 22 40 00, Clau	1.8 1.8 00 00 00	High Heat Input 80.1 kJ/in PD0546 90,000 74,000 26 70	Low Heat Input 37.8 kJ/in PD0535 99,000 92,000 23 60
Interpass Temp. ^o F Weld Position Test Settings Voltage Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. ^o F Interpass Temp. ^o F	500+/-50 1G High Heat Inpu 80.1 kJ/in 34 550 225 14 1" 8 4 300+/-25 500+/-50 1G Dif	200+/-25 1G tt Low Heat Input 37.8 kJ/in 27 350 125 15 1" 14 6 RT 200+/-25 1G fusible Hydrogen - To & Extended Ex Lot - #	Lot- #	Z002191114072 Mechanical Properties Test Reference # Fensile Strength (psi) Yield Strength (psi) Elongation (%) verage Charpy V-notch bact Properties ft•lbs @ +70 °F ordance with AWS A5.20/A5.2 accordance with AWS D1.8/D Test Reference #	• AWS D Requiren 70,00 58,00 22 40 0M, Clau 1.8M	1.8 1.8 00 00 00 00	High Heat Input 80.1 kJ/in PD0546 90,000 74,000 26 70	Low Heat Input 37.8 kJ/in PD0535 99,000 92,000 23 60
Interpass Temp. ^o F Weld Position Test Settings Voltage Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. ^o F Interpass Temp. ^o F Weld Position	500+/-50 1G High Heat Inpu 80.1 kJ/in 34 550 225 14 1" 8 4 300+/-25 500+/-50 1G Dif	200+/-25 1G tt Low Heat Input 37.8 kJ/in 27 350 125 15 17 14 6 RT 200+/-25 1G fusible Hydrogen - Ta & Extended Ex Lot - # G00091	Lot- #	Z002191114072 Mechanical Properties Test Reference # Fensile Strength (psi) Yield Strength (psi) Elongation (%) yerage Charpy V-notch bact Properties ft•lbs @ +70 °F Fordance with AWS A5.20/A5.2 accordance with AWS D1.8/D Test Reference # HB5451	40 Requiren 70,00 58,00 22 40 0M, Clau 1.8M	1.8 lents	High Heat Input 80.1 kJ/in PD0546 90,000 74,000 26 70 70	Low Heat Input 37.8 kJ/in PD0535 99,000 92,000 23 60 /100g) 0q)
Interpass Temp. ^o F Weld Position Test Settings Voltage Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. ^o F Interpass Temp. ^o F Weld Position Condition As Received 7 Day Exposu	500+/-50 1G High Heat Inpu 80.1 kJ/in 34 550 225 14 1" 8 4 300+/-25 500+/-50 1G Dif	200+/-25 1G tt Low Heat Input 37.8 kJ/in 27 350 125 15 17 14 6 RT 200+/-25 1G fusible Hydrogen - Ta & Extended Ex Lot - # G00091 G00091	Lot- #	Z002191114072 Mechanical Properties Test Reference # Fensile Strength (psi) Yield Strength (psi) Elongation (%) verage Charpy V-notch bact Properties ft•lbs @ +70 °F ordance with AWS A5.20/A5.2 accordance with AWS A5.20/A5.1 accordance with AWS A5.20/A5.2 HB5451 HB5479	- AWS D Requiren 70,00 58,00 22 40 0M, Clau 1.8M	1.8 1.8 00 00 00 00	High Heat Input 80.1 kJ/in PD0546 90,000 74,000 26 70 70 6 Average (ml/ 5.3 (ml/10 7.4 (ml/10	Low Heat Input 37.8 kJ/in PD0535 99,000 92,000 23 60 /100g) 0g) 0g)

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JailA. Thomas

David A. Thomas, Quality Assurance Specialist



Product: FabCO RXR Diameter: 5/64" Shielding Gas: C1 (100% CO2) Current/Polarity: DCEP Classification: E70T-1, E70T-9C Specification: AWS A5.20/A5.20M:2021 Test Completed: 11/17/2022

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

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Test Settings	High Heat In	out Low Heat Input	L	_ot- # G02979	AWS D1.8		High Heat Input	Low Heat Input	
	83.0 kJ/in	31.8 kJ/in		Mechanical Properties	Requirer	nents	83.0 kJ/in	31.8 kJ/in	
				Test Reference #			PE5085	PE5083	
Voltage Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. °F Interpass Temp. °F Weld Position	32 400 260 9.2 1" 8 4 300+/-25 500+/-50 1G	28 280 140 14.7 1" 19 7 5 RT 200+/-25 1G		Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch Impact Properties ft•lbs @ +70 °F	70,0 58,0 22 40	00	88,000 73,000 26 67	94,000 84,000 24 61	
Test Settings	High Heat In	out Low Heat Input	L	_ot- # G01981	AWS D	01.8	High Heat Input	Low Heat Input	
	81.3 kJ/in	31.7 kJ/in		Mechanical Properties	Requirer	nents	81.3 kJ/in	31.7 kJ/in	
	20	00		Test Reference #			PE5092	PE5089	
Voltage Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. °F Interpass Temp. °F Weld Position	410 260 9.6 1" 8 4 300+/-25 500+/-50 1G	280 140 14.8 1" 19 7 5 RT 200+/-25 1G		Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch Impact Properties ft•lbs @ +70 ⁰F	70,0 58,0 22 40	00	85,000 69,000 28 67	91,000 79,000 24 63	
Test Settings	High Heat In	out Low Heat Input		_ot- # G03458			High Heat Input	Low Heat Input	
	83.0 kJ/in	31.7 kJ/in		Mechanical Properties	Requirer	nents	83.0 kJ/in	31.7 kJ/in	
				Test Reference #			PE5095	PE5096	
Voltage Current (amps) WFS (ipm) Travel Speed (ipm) Stick Out # of passes # of layers Preheat Temp. ºF Interpass Temp. ºF Weld Position	32 400 260 9.2 1" 8 4 300+/-25 500+/-50 1G	28 280 140 14.8 1" 19 7 5 RT 5 RT 200+/-25 1G		Tensile Strength (psi) Yield Strength (psi) Elongation (%) Average Charpy V-notch Impact Properties ft•lbs @ +70 ⁰F	70,000 58,000 22 40		85,000 70,000 28 67	93,000 85,000 25 57	
	D	iffusible Hydrogen - To	ested i	n accordance with AWS A5.20/A5.2	0M, Cla	use 1	5		
Condition	<u>& Extended Ex</u>	posur	e - in accordance with AWS D1.8/D	n accordance with AWS D1.8/D1.8M		Δ_{verade} (ml/100g)			
As Received		G02979		HR6271	HB6271		5.6 (ml/100g)		
		602079		HB6272	HB6272		8.0 (ml/100g)		
7 Day Exposu	re	G023/3					8.0 (mi/100g)		

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