

Product Type:	FabCO 85
Classification:	E70T-5CJ H4; E70T-5MJ H4
Specifications:	AWS A5.20/A5.20M; ASME SFA 5.20
Diameter Tested:	3/32"
Date Tested:	8/30/2024
Date Generated:	9/10/2024

This is to certify that the product named above and supplied on the referenced order number is of the same classification, manufacturing process, and material requirements as the material which was used for the test that was concluded on the date shown, the results of which are shown below. All tests required by the specifications shown for classification were performed at that time and the material tested met all requirements. It was manufactured and supplied by the Quality System Program of Hobart Brothers, which meets the requirements of ISO 9001, ANSI/AWS A5.01, and other specification and Military requirements, as applicable. This document supplies actual test results of non-specific inspection in conformance with the requirements of EN 10204, type 2.2 certification.

## THE STEEL USED IN THIS LOT OF MATERIAL WAS MELTED AND MANUFACTURED IN THE U.S.A.

Shielding Medium       Amps / Polarity       Volts       WFS in/min(m/min)       ESD in/min (m/min)       Pre-kat (C)       Interpase (C)       Travel Speed in/min(m/min)         M21-ArC-25       425 / DCEP       26       180 (4.6)       1 (25)       Rome Temp       300 (14)       12 (30.5)         C1       425 / DCEP       26       180 (4.6)       1 (25)       Rome Temp       300 (14)       12 (30.5)         Shielding Medium       Ref. No.       Testing Continue       UIL testing Verticie       Rome Temp       300 (14)       12 (30.5)         M21-ArC-25       PE8464       Aged 48 Hrs 220F       78.000 (53)       64.000 (43)       12 (30.5)       300         M21-ArC-25       PE8464       Aged 48 Hrs 220F       78.000 (53)       64.000 (43)       300 <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>-</th> <th>Test :</th> <th>Settii</th> <th>ngs</th> <th></th>								-	Test :	Settii	ngs															
C1       425 / DCEP       26       180 (4.6)       1 (25)       Room Temp       300 (49)       12 (30.5)         Shielding Medium       Ref. No.       Testing Conditions       Ult. Tensile Strength psi (MPa)       Yield Strength psi (MPa)       Elong.% in 2*         M21-ArC-25       PE8464       Aged 48 Hrs 220F       78,000 (539)       64,000 (439)       30       30         C1       PE8465       Aged 48 Hrs 220F       76,000 (524)       59,000 (409)       32*         M21-ArC-25       PE8464       Aged 48 Hrs 220F       76,000 (524)       59,000 (409)       32*         Shielding Medium       Ref. No.       Testing Conditions       Temp. F (C)       Individuals ft.lb.(J)       Avg. ft.lb.(J)       Type         M21-ArC-25       PE8464       As Weldet       -40 (-40)       76,81,88 (103,110,119)       82 (111)       Charpy-V-Notel         Ref.No.       Radiographic Inspection       Horizontal :       Conforms       Overhead :       Vertical :       Vertical :         PE8465       Conforms       Horizontal :       Conforms       Overhead :       Vertical :       Vertical :       Vertical :         PE8465       Conforms       Overhead :       Conforms       Overhead :       Vertical :       Vertical :       Vertical :	Shielding Medium		Amps / Polarity			Volts	Volts				ESO in(mm)				Preheat F(C)				Interpass F(C)							
Mechanical Properties - Tensile         Shielding Medium       Ref. No.       Testing Conditions       Ult. Tensile Strength psi (MPa)       Yield Strength psi (MPa)       Elong.% in 2"         M21-ArC-25       PE8464       Aged 48 Hrs 220F       78,000 (539)       64,000 (439)       30         C1       PE8465       Aged 48 Hrs 220F       76,000 (524)       59,000 (409)       32         Mechanical Properties - Impact         Shielding Medium       Ref. No.       Testing Conditions       Temp. F (C)       Individuals ft.lb.(J)       Avg. ft.lb.(J)       Type         M21-ArC-25       PE8464       As Welded       -40 (-40)       76,81,88 (103,110,119)       82 (111)       Charpy-V-Notcl         C1       PE8465       As Welded       -40 (-40)       76,81,88 (103,110,119)       82 (112)       Charpy-V-Notcl         Ref.No.       Radiographic Inspection       Fillet Weld Test       Vertical :       Vertical : </td <td>M21-ArC-25</td> <td></td> <td>42</td> <td>5 / D</td> <td>CEP</td> <td>26</td> <td></td> <td colspan="3">180 (4.6)</td> <td>1</td> <td>(25)</td> <td></td> <td colspan="4">Room Temp</td> <td colspan="4">300(149)</td> <td colspan="4">12 (30.5)</td>	M21-ArC-25		42	5 / D	CEP	26		180 (4.6)			1	(25)		Room Temp				300(149)				12 (30.5)				
Shielding Medium       Ref. No.       Testing Conditions       Ult. Tensile Strength psi (MPa)       Yield Strength psi (MPa)       Elong.% in 2"         M21-ArC-25       PE8464       Aged 48 Hrs 220F       78,000 (539)       64,000 (439)       30         C1       PE8465       Aged 48 Hrs 220F       76,000 (524)       59,000 (409)       32         Shielding Medium       Ref. No.       Testing Conditions       Temp. F (C)       Individuals fL/b.(J)       Avg. fL/b.(J)       Type         M21-ArC-25       PE8464       As Welded       -40 (-40)       76,81,88 (103,110,119)       82 (111)       Charpy-V-Notch         Ref. No.       Testing Conditions       Temp. F (C)       Individuals fL/b.(J)       Avg. fL/b.(J)       Charpy-V-Notch         Ref.No.       Rediographic Inspector       Fillet Welded       -40 (-40)       86,91,70 (117,123,95)       82 (111)       Charpy-V-Notch         PE8465       Conforms       Overhead       Overhead       Vertical       Image: Strength psi (MPa)       No       No <td>C1</td> <td></td> <td colspan="3">425 / DCEP</td> <td>26</td> <td colspan="4">26 180 (4.6)</td> <td colspan="4">1 (25)</td> <td colspan="5">Room Temp</td> <td>149)</td> <td></td> <td colspan="4">12 (30.5)</td>	C1		425 / DCEP			26	26 180 (4.6)				1 (25)				Room Temp					149)		12 (30.5)				
M21-ArC-25       PE8464       Aged 48 Hrs 220F       78,000 (539)       64,000 (439)       30         C1       PE8465       Aged 48 Hrs 220F       76,000 (524)       59,000 (409)       32         Mechanical Properties - Impact         Shielding Medium       Ref. No.       Testing Conditions       Temp. F (C)       Individuals ft.lb.(J)       Avg. ft.lb.(J)       Type         M21-ArC-25       PE8464       As Welded       -40 (-40)       86,91,70 (117,123,95)       82 (111)       Charpy-V-Notcl         Ref. No.       Radiographic Inspection       Horizontal I       Conforms       Overhead I       Vertical I       Vertical I         PE8464       Conforms       Horizontal I       Conforms       Overhead I       Vertical I       Image: Im						N	Nech	nanic	al Pr	oper	ties -	Ten	sile													
C1       PE8465       Aged 48 Hrs 220F       76,000 (524)       59,00 (409)       32         Shielding Medium       Ref. No.       Testing Conditions       Temp. F (C)       Individuals ft.lb.(J)       Avg. ft.lb.(J)       Avg. ft.lb.(J)       Type         M21-ArC-25       PE8464       As Welded       -40 (-40)       86,91,70 (117,123,95)       82 (111)       Charpy-V-Note         Ref. No.       Radiographic Inspection       Horizontal       Conforms       Vertical       Charpy-V-Note         Ref.No.       Radiographic Inspection       Horizontal       Conforms       Overhead       Vertical       Vertical       Charpy-V-Note         PE8464       Conforms       Horizontal       Conforms       Overhead       Vertical	Shielding Mediun	Shielding Medium Ref. No.				Test	ing Co	onditior	ıs	Ult.	Tensile	Stren	(MPa)	MPa) Yield Strengtl					Pa)	Т	Elong.% in 2"					
Mechanical Properties - Impact         Shielding Medium       Ref. No.       Testing Conditions       Temp. F (C)       Individuals ft.lb.(J)       Avg. ft.lb.(J)       Type         M21-ArC-25       PE8464       As Welded       -40 (-40)       76,81,88 (103,110,119)       82 (111)       Charpy-V-Note         C1       PE8465       As Welded       -40 (-40)       86,91,70 (117,123,95)       82 (112)       Charpy-V-Note         Ref.No.       Radiographic Inspecton       Horizontal :       Conforms       Overhead :       Vertical :       Vertical :         PE8464       Conforms       Horizontal :       Conforms       Overhead :       Vertical :       Vertical :         PE8465       Conforms       Horizontal :       Conforms       Overhead :       Vertical :       Vertical :         PE8465       Conforms       Horizontal :       Conforms       Overhead :       Vertical :       Vertical :         Shielding Medium / Ref. No       C       Mn       P       S       Si       Cu       Cr       V       Ni       Mo       Al       Ti       Nb       Co       B <w< td="">       N       N       A       A       A       A       A       A       A       A       A       A</w<>	M21-ArC-25			PE846	64	Age	d 48 ⊦	Irs 220	F		78	,000 (		64,000 (						Т	30					
Shielding Medium       Ref. No.       Testing Conditions       Temp. F (C)       Individuals ft.lb.(J)       Avg. ft.lb.(J)       Type         M21-ArC-25       PE8464       As Welded       -40 (-40)       76,81,88 (103,110,119)       82 (111)       Charpy-V-Note         C1       PE8465       As Welded       -40 (-40)       86,91,70 (117,123,95)       82 (112)       Charpy-V-Note         Ref. No.       Radiographic Inspector       Horizontal       Conforms       Overhead       Vertical       Vertical       Note       N	C1			PE846	5	Age	Aged 48 Hrs 220F				76,000 ( 524 )						59,000 ( 409 )					32				
M21-ArC-25       PE8464       As Welded       -40 (-40)       76,81,88 (103,110,119)       82 (111)       Charpy-V-Note         C1       PE8465       As Welded       -40 (-40)       86,91,70 (117,123,95)       82 (111)       Charpy-V-Note         Ref.No.       Radiographic Inspector       Horizontal       Conforms       Overhead       Vertical       Vertical         PE8464       Conforms       Horizontal       Conforms       Overhead       Vertical       Vertical       Vertical         Shielding Medium / Ref. No       C       Mn       P       S       Si       Cu       Cr       V       Ni       Mo       Al       Ti       Nb       Co       B       N       Mg       Zn       Be       Sb       A         M21-ArC-25 / PE8464       0.06       1.44       0.009       0.05       0.06       0.04       <.01       0.01       <.01       <.01       I       I       Nb       Co       B       N       Mg       Zn       Be       Sb       A         M21-ArC-25 / PE8465       0.06       1.44       0.009       0.05       0.06       0.04       <.01       0.01       <.01       I       I       I       I       I       I       <							Mecl	hanic	al Pr	oper	ties ·	Imp	act								-				_	
C1       PE8465       As Welded       -40 (-40)       86,91,70 (117,123,95)       82 (112)       Charpy-V-Note         Ref.No.       Radiographic Inspection       Fillet Weld Test       Fillet Weld Test       Vertical :	Shielding Medium		Ref	. No.	Т	Testing Conditions				Temp. F (C)				dividuals ft.lb.(J)					Avg. ft.lb.(J)				Туре			
Ref.No.       Radiographic Inspection       Fillet Weld Test         PE8464       Conforms       Horizontal :       Conforms       Overhead :       Vertical :         PE8465       Conforms       Horizontal :       Conforms       Overhead :       Vertical :         PE8465       Conforms       Overhead :       Vertical :       Vertical :         Shielding Medium / Ref. No       C       Mn       P       S       Si       Cu       Cr       V       Ni       Mo       Al       Ti       Nb       Co       B       W       Sn       Fe       Sb       A       Mg       Zn       Be       Sb       A         M21-ArC-25       / PE8465       0.06       1.44       0.009       0.050       0.06       0.04       <.01	M21-ArC-25		PE8464			As Welded				-40 (-40)				76,81,88 (103,110,119)					82 ( 111 )				Charpy-V-Not			
PE8464       Conforms       Horizontal       Conforms       Overhead       Vertical       Vertical         PE8465       Conforms       Horizontal       Conforms       Overhead       Vertical       Vertical       Vertical         Shielding Medium / Ref. No       C       Mn       P       S       Si       Cu       Cr       V       Ni       Mo       Al       Ti       Nb       Co       B       N       Mg       Zn       Be       Sb       A         M21-ArC-25       / PE8465       0.06       1.44       0.009       0.055       0.06       0.04       <.01	C1		PE	3465		As Welded				-40 (-40) 86,91				70 (117,123,95)					82 ( 112 )				Charpy-V-Not			
PE8465       Conforms       Image: Horizontal ison of the image: Horizontal i				ection																_						
Chemical Analysis         Shielding Medium / Ref. No       C       Mn       P       S       Si       Cu       Cr       V       Ni       Mo       Al       Ti       Nb       Co       B       W       Sn       Fe       Sb       N       Mg       Zn       Be       Sb       A         M21-ArC-25       PE8464       0.06       1.44       0.009       0.009       0.55       0.06       0.04       <.01																										
Shielding Medium / Ref. No       C       Mn       P       S       Si       Cu       Cr       V       Ni       Mo       Al       Ti       Nb       Co       B       W       Sn       Fe       Sb       N       Mg       Zn       Be       Sb       A         M21-ArC-25 / PE8464       0.06       1.44       0.009       0.009       0.55       0.06       0.04       <.01	PE8465	Confo	orms																ertic	al :						
M21-ArC-25 / PE8464       0.06       1.44       0.009       0.05       0.06       0.04       <.01       0.02       0.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01       <.01 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td>1</td><td>1</td><td><u> </u></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td><del>Б.</del>Г</td><td></td><td></td><td></td><td>Τ.</td></th<>								1	1	1	<u> </u>								-		<del>Б.</del> Г				Τ.	
C1 / PE8465       0.06       1.42       0.009       0.01       0.50       0.06       0.04       < .01       0.02       0.01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       < .01       <	•		-			-				<u> </u>						Co	BW	/ Sn	ŀ⊦e	Sb		Mg	Zn Be	3 St	<u>)</u>	
Diffusible Hydrogen Collected per AWS A4.3           M21-ArC-25         2.3 ml/100g of weld metal for 3/32 in diameter 19% relative humidity	M21-ArC-25 / PE84	64	0.06 1.44 0.		0.009	0.009	0.55	0.06	0.04	< .01	0.02	0.01	0.01	< .01	< .01											
M21-ArC-25 2.3 ml/100g of weld metal for 3/32 in diameter 19% relative humidity	C1 / PE8465 0.06 1.42 0.0		0.009	0.010	0.50	0.06	0.04	< .01	0.02	0.01	< .01	< .01	< .01													
					D	Diffusit	ole ⊦	lydro	gen	Colle	cted	per	AWS	A4.3												
C1 2.5 ml/100g of weld metal for 3/32 in diameter 20% relative humidity	M21-ArC-25								2.	3 ml/10	0g of v	weld n	netal for	· 3/32 ir	i diame	eter 19	9% I	elati	ve h	umic	lity					
	C1								2.	5 ml/10	0g of v	weld m	netal for	3/32 ir	i diame	eter 20	1 %C	elati	ve h	umic	lity					

Jenes a Owing

James A. Owens, Q.A. Specialist

Certification and Limited Warranty - Data for the above supplied product are those obtained when welded and tested in accordance with the above specification. All tests for the above classification were satisfied. Other tests and procedures may produce different results.