91-000-22

FORM U-1 MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS (1) 10"-118 Sq. F as required by the provisions of the ASME Code rules, Section VIII, Division 1 FTSSX Heat Exchange:

42														
7				D	7									
1.	Manu	factured an	d certified b	y rerry	Froduc	cs cor		and address of mi		d, Haine	sport, NJ 08			
2.	Manu	factured for	Sofix C	Corporati	on, 101	North	ngate Co		Center, Cha	ttanooga	, TN 37415			
3.	Locat	ion of insta	llation Sof	ix Corpo	ration,	2800 7	Riverpor	t Road, C	hattanooga	, TM 37	406			
4.	Type:	Horizon	ntal	B-4615	10.)	(CRN)		D-91123-1	4236 (Nat'l. I	34.20	1991			
						,- ,	iramente of	_	· · · · · · · · · · · · · · · · · · ·		(year built)			
J.	VESS	EL CODE. T	he design, c	construction a	ind workm	anship cor	nform to ASI	ME Code, Sect	incations of the ion VIII, Division	11:	ER AND PRESSURE 89			
			1989											
		(addenda (D		,	e Case no.)				ecial service per UG					
ten	rs 6-1	inclusive t	o be compl	eted for s ang	le wal l-ve o	s ols, jack e	19- 01 juoke 1	एक एक्डम सम्बद्ध	shells of heat e	exchangers.				
6	Shell:	SA312-7	304 s/s	.13	411		11011	01-	10-3/4" 0.	D. 5'	-11-3/4" Lg.			
	Seam	(mat'l (spec	c no. grade))	(nom. ti	nickness (in.)) 85		(corr. allow. (i	n.))	(dia. ID (ft. & in.))	(len	gth (overall) (ft. & in.))			
۲.	Jeann	J	sngl.))	(RT (spot or full)			p. (*F)) (time) (girth (dbl.	., sngl.)) (RT(spo	l, partial, or full))	(no. of courses)			
8.	Heads	s: (a)	ander en				(b) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d							
	Г.	T		(mat'l. (spec.	1	T	1	1	(mat'i. (sp	ec. no., grade))				
		ocation (top. ottom, ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)			
	(a)													
	(b)				<u> </u>									
0.	Jacke	i Closure:		gee & weld. bar, e	161	oar, give di	mensions:_	· · · · · · · · · · · · · · · · · · ·		If bolted,	describe or sketch.			
1.	MAW	s. 85	at max. tem	p. 300	Min desig	n metal ten	np.: 20	_at85	. Hydro., p reu. c	ਸਵਰ m b. test	pressure_145			
							(*F)	(psi)			(psi)			
em	s 12 a	ind 13 to be	completed	for tube sec	tions.									
2. ·	Tubes	heets: SA	.240-T304	4 c. no., gr.)) (dia	10-3,	/4" O.D	. 3/4	Thk.	"0"		Welded			
Bod	y F.	langes:	SA105		10-3/4	I.D.		50# Std.	(corr. allow. (ii		etained by Li			
	•	(float	my mar i. (spec	. no., gr.jj	(Uia. (ii	1.))	(nom. thic	kness (in.))	(corr. allow. (ii		(attachment)			
3. 1	Tubes:	SA249-T	304		5/8"		18 Ga		121		straight			
									(no.)		type (straight or U))			
em.	s 14-1	7 inclusive	to be compl	leted for inme	<i>म्झावमाचेच।</i>	5-01 700 ★81	<i>te⊎ veusels</i> =		f heat exchange					
4. 5	Shell: .	SA312-T	304 S/S	.165	***		"0"	<u>01-</u>	-10-3/4" O.	D. :	1 @ 8" Lg.			
	Seams	. Weld	ed		8.		(corr. allow. (i	n.)) DBV	(dia. ID (ft. & in.))	(len	gth (overall) (ft. & in.))			
			bl., sngl.))	(RT (spot or fu	ll)) (eff. (%)) (HT terr	1p. (*F)) (tim	e) (girth (dbl	sngl.)) (RT (spo	t, partial, or full))	(no. of courses)			
3. H	leads:	: (a)	SA105 C/	(mat'l. (spec. r	o gradeli	-	(b)						
	Lo	cation (top.	Minimum			Vanabla	Friences		1	ec. no., grade))	T			
	po	ltom, ends)	Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)			
		End End	1-3/16	"O"						10-3/4"	Concave			
			used (descr	ribe other fas		(12) 7/	8" Dia.	x 5-1/2"	In C/S 6	+1,40 541	 03 R7			
#1	remo	vadie, doits	usea (aesči	nue other fas	renings):	12/ //	O DIG.		Lg. C/S s spec. no., gr., size, no	studs SAl	133 B/			
_		35/FW		300			20				60			
7. N	/AWP	(psi)	at max. temp). <u>(°F)</u> .	Min desigr	metal tem	p.:	_at_33/#V	. Hydro., рпов. о	r zemb . test p	pressure 60 (psi)			
		,					1 1	(pai)			(psi)			

Purpose (inlet, outlet, drain, etc.)	Number	Dia. or Size	Type	Mat'l.	Nom. Thickness	Reinforcement Material	How Attached	Location
Inlet .	1	4"	CL-150	SA312	Sch #10	Inherent	Welded	Bonnet
				T304				
Outlet	1	211	CL-150	SA312	Sch #10	Inherent	Welded	Bonnet
				T304				
Inlet and	2	2"	CL-150	SA312	Sch #10	Inherent	Welded	Shell
Outlet				T304				

19. Supp	ports: Skirt	Lugs 2	Legs	(no.)	Other	describe)	Attached Welde	ed to main (where and how)	shell
	arks: Manufacturer		Reports prope	rly identifie	ed and signe	d by Commis	sioned Inspectors	have been furni	shed for the
tollo	wing items of the re	eport:		(name	of part, item nu	mber mir's name	and identifying stamp)		
	Unit not des	ioned for	lethal se						e. Unit
	dro-tested i								
ÜĞ	G-20 (b), UCS	-66 and UF	M-51. Sa	fetv va	lve conn	ection lo	cated elsew	nere in sys	tem.
	ne bonnet con								
			CERTU	FICATE OF	SHOP COM	API LANCE			
We certif	fy that the statemen	nts made in thi					naterial construct	ion and workma	nehin of this
		C C-d- 4 D		0 1	5: : :				
"U" Cert	ificate of Authoriza	ation no. 432	.8 expi	res Dec	. 31	, 91			
Date_8	3-19-91 Na	me Perry	Products	Corpor	ation	•	Signed	J. W. JK	2 6
				(manufacti	urer)			(representativ	e)
Vessel co	onstructed by Per	rry Produc	CERTI ts Corpor	FICATE OF ation	SHOP INS	PECTION	at <u>H</u> a	ainesport,	NJ .
I, the und	dersigned, holding a New Jersey	a valid commiss	sion issued by d by Lumber	The Nation	nal Board of tual Cas	Boiler and Preualty Co.	essure Vessei Insp of: Long Gro	ectors and the sove, IL	tate or prov-
			-1	L-					
Report of	n		, and state tha	it, to the b	est of my kr	nowledge and	belief, the manufa	acturer has cons	structed this
	vessel in accordar							2010.0. 1125 0011	
By signin	ng this certificate n	either the inspe	ector nor his e	mployer ma	akes anv war	ranty, express	sed or implied, cor	ncerning the ore	ssure vessel
described	d in the Manufactur	rers' Data Repo	rt. Furthermor	e, neither	the inspecto	r nor his emp	lover shall be liabl	le in any manner	for any per-
sonal inju	ury or property dan	nage or a loss	of any kind ar	ising from	or connecte	ed with this in	spection.		
Date_5/	//9/9/ Signe	d Chilly My	day	_	с	ommissions_	N97050	NJ476	;
		- 0	(Authorized Than	ector)			(Nat'l, Bd. (incl. end	orsements) state, pro	v. and no.)
			CERTIFICATE	OF FIELD	ASSEMBL	Y COMPLIANO	CE		
We certif	ly that the field ass	embly constru	ction of all pa	rts of this v	essel confo	rms with the	requirements of S	ection VIII, Divis	sion 1 of the
	DILER AND PRESS		CODE.						
	ificate of Authoriza							•	
"U" Certi	incate of Authoriza		expi					•	
	Nam-						Signed		
			assembler that cer	tified and con	structed field as	ssembly)		(representativ	
Date	Nam	e(assembler that cer	tified and con	structed field as	ssembly)	N	(representativ	e)
Date I, the und	Nam	e(assembler that cer CERTIFICAT sion issued by	tified and con	structed field as	ssembly)	N	(representativ	e)
Date I, the und	Nam	e(assembler that cer CERTIFICAT sion issued by	tified and con	structed field as D ASSEMBL al Board of I	Y INSPECTIO Boiler and Pre	N ssure Vessel Insp	(representative)	e) tate or prov-
Date I, the und ince of	Namdersigned, holding a	e(a valid commiss _and employed	CERTIFICAT sion issued by	tilied and con E OF FIEL the Nation	structed field as D ASSEMBL al Board of I	Y INSPECTIO Boiler and Pre have compare	N ssure Vessel Insp ed the statements	(representative ectors and the sectors in this Manufac	e) tate or prov-
I, the und ince of	Nam dersigned, holding a	e(a valid commissand employed ressure vessel a	CERTIFICAT sion issued by byoand state that p	tified and con E OF FIEL the Nation f	Structed field as D ASSEMBL al Board of l	SSEMBLY) Y INSPECTIO Boiler and Pre have compare a items	N ssure Vessel Insp ed the statements	ectors and the s	tate or prov- cturers' Data
Date I, the und ince of Report wi certificate	hersigned, holding a ith the described pr e of shop inspection	e(a valid commiss _and employed ressure vessel a on, have been	CERTIFICAT sion issued by d byo and state that inspected by	tified and con E OF FIEL the Nation f parts referr me and the	D ASSEMBL al Board of led to as data	SSEMBLY) Y INSPECTIO Boiler and Pre have compare a items st of my know	N ssure Vessel Insp ed the statements vledge and belief,	ectors and the s in this Manufac , not inc	tate or prov- turers' Data tluded in the
I, the und ince of	Nam dersigned, holding a	a valid commiss _and employed ressure vessel a on, have been s pressure vess	CERTIFICAT sion issued by by one of the control of	tified and con E OF FIEL the Nation f parts referr me and thance with AS	D ASSEMBL al Board of led to as data	SSEMBLY) Y INSPECTIO Boiler and Pre have compare a items st of my know	N ssure Vessel Insp ed the statements vledge and belief,	ectors and the s in this Manufac , not inc	tate or prov- turers' Data tluded in the
I, the und ince of	dersigned, holding a lith the described pre e of shop inspection and assembled this ected to a hydrosta	e	CERTIFICAT sion issued by d byo and state that p inspected by sel in accordar	tified and con E OF FIEL the Nation f parts referr me and the nce with AS	D ASSEMBL al Board of led ed to as data at to the be	Seembly) NY INSPECTIO Boiler and Pre have compare a items st of my know Section VIII, D	N ssure Vessel Insp ed the statements vledge and belief, ivision 1. The desc	ectors and the s in this Manufac, not inc , the manufactu cribed vessel wa	tate or prov- cturers' Data cluded in the rer has con- as inspected
I, the und ince of	ersigned, holding a ith the described pr e of shop inspection and assembled this ected to a hydrostal g this certificate ne	a valid commiss _and employed ressure vessel a on, have been s pressure vess atic test of either the inspe	CERTIFICAT sion issued by d byo and state that p inspected by sel in accordarps ector nor his er	tified and con E OF FIEL the Nation f parts referr me and the nce with AS si. mployer ma	D ASSEMBL al Board of led to as data at to the be	have compare itemsst of my know Section VIII, Details and years.	N ssure Vessel Insp ed the statements viedge and belief, ivision 1. The desc	ectors and the s in this Manufac , not inc , the manufactu cribed vessel wa	tate or prov- sturers' Data sluded in the rer has con- is inspected
I, the und ince of	ersigned, holding a ith the described pr e of shop inspection and assembled this ected to a hydrosta g this certificate ne	e valid commiss and employed ressure vessel a on, have been s pressure vess atic test of either the insper	CERTIFICAT sion issued by d by on the state that proceed by sel in accordant psector nor his en	tified and con E OF FIEL the Nation f parts referr me and the nce with AS si. mployer ma e, neither t	D ASSEMBL al Board of led to as data at to the be 6ME Code, S likes any war he inspecto	have compared items st of my know Section VIII, Derranty, express r nor his emple	N ssure Vessel Insp ed the statements wledge and belief, ivision 1. The desc	ectors and the s in this Manufac , not inc , the manufactu cribed vessel wa	tate or prov- sturers' Data sluded in the rer has con- is inspected
I, the und ince of	ersigned, holding a ith the described pr e of shop inspection and assembled this ected to a hydrostal g this certificate ne	e valid commiss a valid commiss and employed ressure vessel a on, have been s pressure vess atic test of either the insper	CERTIFICAT sion issued by d by on the state that proceed by sel in accordant psector nor his en	tified and con E OF FIEL the Nation f parts referr me and the nce with AS si. mployer ma e, neither to	D ASSEMBL al Board of led to as data at to the be BME Code, S likes any war he inspecto or connecte	have compared items st of my know Section VIII, Derranty, express r nor his emple	N ssure Vessel Insp ed the statements wledge and belief, ivision 1. The desc	ectors and the s in this Manufac , not inc , the manufactu cribed vessel wa	tate or prov- sturers' Data sluded in the rer has con- is inspected

FORM U-1 MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS (1) 10"-118 Sq. F: as required by the provisions of the ASME Code rules, Section VIII, Division 1 FTSSX Heat Exchanger

			Dorse	Danilee	+- Co		05 14					
1. M	anufactured ar	nd certified t	by	Froduc	ts corp		, Z5 Mt.		d, Haine	esport, NJ 08		
. М	anufactured fo	or Sofix (Corporatio	n, 101	North	gate Co	nmercial	Center, Cha	ttanooga	1, TN 37415		
. L o	ocation of insta	allation Sof	ix Corpor	ation,	2800 F			hattanooga	, IN 37	7406		
. Ty	/pe: Horizo	ntal	B-4615		(CRN)		me and address) 0-91123-1			1991		
					•- •	!	(drawing no.)	(Nat'l. I	-	(year built)		
VI	ESSEL CODE.	the design, o	construction a	nd workma	et the requ anship con	form to ASM	material spec IE Code, Sect	ifications of the ion VIII, Divisior	ASME BOIL	ER AND PRESSUR		
		1989					-= 0000, 0000			(year)		
_	(addenda ((Code	Case no.)			(80	ecial service per UG	-120(d))			
ms	6-11 inclusive	to be compl	leted for s imel		seks inske	re seek sisse keer s	, ,	shells of heat e				
										en e		
Si	nell: SA312-	1304 S/S	. 134	ckness (in))		(corr. allow. (ir	<u> </u>	10-3/4" 0. (dia. ID (ft. & in.))	D. 5'	-11-3/4 ¹¹ Lg.		
S	eams: Wel	ded		85		(COM. 2110W. (II	" - Jain,	(Ola. 1D (II. & III.))	(ien	gin (overall) (it. & in.))		
0.	(long. (dt	ol., sngl.))	(RT (spot or full))	(eff. (%)) (HT temp	. (*F)) (time	(girth (dbl.	., sngl.)) (RT(spo	t, partial, or full)	(no. of courses)		
Н	eads: (a)			(mat'i. (spec. no grade)) (mat'i. (spec. no grade))								
	Location (top.	Minimum	Υ			1	,	1	ec. no., grade))			
	bottom, ends)	Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)		
(a)						1			 			
(b)												
M	cket closure:	(describe as o	gee & weld, bar, et	c.) Min design		mensions:	a. 85	the second		, describe or sketch pressure 145		
	(psi)		(°F)	wiiii acaigi	inetal ten	(°F)	(psi)	. nyuro., p nea. c	n co mb. lest	(psi)		
ns	12 and 13 to b	e completed	for tube sect	ons.				•				
Tu	hesheets: SA	A240-T30	4	10-3/	'4" O.D.	. 3/4	" Thk.	11011		Welded		
_	besheets: State	onary mat'l. (spe	ec. no., gr.)) (dia.	(in.) (subject	to pressure))	(nom. thic	kness (in.))	(corr. allow. (i	n.)) (att	achment (welded, bolted		
dy	Flanges:	SA105	:. no., gr.))	10-3/4	'I.D.	15	O# Std.	1,0,1		etained by L:		
т.,	5A249-	r304	. no., gr.,,	5/811	.,,	18 Ga	kness (In.))	(corr. allow. (ii)		(attachment) straight		
ıu	bes: <u>SA249-7</u> (mat'l. (spec. no., gr.))	(6	DD (in.))	(non	n. thickness (in.	or gauge))	(no.)		type (straight or U))		
75	14-17 inclusive	to be comp	leted for #mel	- -dramber	5 -04 jacket	: ਦ <i>#∓ਦ</i> 55ਦ/5੨	∓ channels o	f heat exchange	ers.			
	SA312-1	rana s/s	165	11		11011	n t	10 2/4# 0	D	1 0 011 7 -		
Sh	ell: <u>SA312-1</u>	pec. no., gr.))	(nom. th	ckness (in.))		(corr. allow. (in	1.))	(dia. ID (ft. & in.))	·υ. (ler	1 @ 8 ^{tt} Lg.		
Sea	ams: Weld	led	****	8.5			- DBV			1		
	(long (abi., sngi.))	(RT (spot or full)) (eff. (%)) (HT tem	p. (*F)) (time) (girth (dbl	sngl.)) (RT (spo	t, partial, or full)	(no. of courses)		
He	ads: (a)	SA105 C	(mat'l. (spec. no) grade))		(b)(mat'l. (spec. no., grade))						
	Location (top.	Minimum	Corrosion	Crown	Knuckle	Elliptical	Conical		1	Side 45 Section 1		
	bottom, ends)	Thickness	Allowance	Radius	Radius	Ratio	Apex Angle	Hemispherical Radius	Fiat Diameter	Side to Pressure (convex or concave)		
	R. End	1-3/16	,,0,,						10-3/4"	Concave		
	L. End			<u> </u>	12\ 7/9		5 1/211	T = 0/0				
17 50	emovable, bolt	s used (desc	ribe other fast	enings):	14) 1/8	DIA.	x 5-1/2" (mat'l., s	Lg. C/S s	studs SA	193 B/		
	35/FW		300			20			•	.		
MΑ	(psi)	at max. tem	p N	⁄lin design	metal tem	p.: <u> </u>	at 33/ FV (osi)	. Hydro., pnou. o	r∈omb , test	pressure 60 (psi)		
						, . ,	(201)			(hai)		

18. Nozzles, inspection and safety valve openings:

		apanings.						
Purpose (inlet, outlet, drain, etc.)	Number	Dia. or Size	Туре	Mat'l.	Nom. Thickness	Reinforcement Material	How Attached	Location
Inlet .	1	4"	CT150	SA312	Sch #10	Inherent	Welded	Bonne
			9B 1.7*	T304	OCH #10	Timerenc	Weight	Dome
				1				_
Outlet	1	211	CL-150	SA312	Sch #10	Inherent	Welded	Bonnet
				T304				
Inlet and	2	2"	CL-150	SA312	Sch #10	Inherent	Welded	Shell
Outlet				T304				
	<u> </u>							
Supports: Skirt	s' Partial Data	Reports prope	erly identifie					
following items of the re	eport:		(name	of part, item n	umber, mfr's, name	and identifying stamp)		
Unit not des	igned for	lethal se						ice. Ur
hvdro-tested i	n horizon	tal positi	lon. Ex	empt fro	om impact	testing per	Code para	graphs
UG-20 (b), UCS	-66 and U	HA-51. Sa	afetv va	lve con	nection lo	cated elsew	here in s	vstem.
One bonnet con	sisting o	f 10"x4" S	Sch #10	concent	ric reduce	r T-304, SA	403.	
sel conform to the ASM Certificate of Authorize 8-19-91 Na						Signed	J. W. J	GL ative)
sel constructed by Pe	rry Produ	CERT Cts Corpor	FICATE OF	SHOP INS	SPECTION	at	ainesport.	, NJ
e undersigned, holding of <u>New Jersev</u>	a valid commi: and employe	ssion issued by ed by Lumber	The Nation	nal Board of tual Cas	Boiler and Presualty Co.	ssure Vessel Insp of Long Gro	ectors and the	e state or p
ort on #-19		of	ha	ave inspect	ed the pressure	e vessel described	in this Manu	facturers' D
ort on 3-15	, 19 <u>_9/</u>	_, and state the	at, to the be	est of my k	nowledge and	belief, the manuf	acturer has co	instructed t
sure vessel in accordar	nce with ASM	E Code, Sectio	n VIII, Divis	sion 1.				
igning this certificate n	either the insp	pector nor his e	mployer ma	akes any wa	rranty, express	sed or implied, co	ncerning the p	ressure ves
cribed in the Manufactu	rers' Data Rep	ort. Furthermo	re, neither t	the inspect	or nor his emp	oyer shall be liab	le in any mann	er for any
al injury or property dar	nage or a loss	s of any kind a	rising from	or connect	ed with this in	spection.		7/
9/19/9/ Signe	ed the for	(Authorized In-	pector)		Commissions_	(Nat'l Bd (incl. end	orsements) state	nroy and no.)
	1,		,				orderional district	prov. uno 110.,
certify that the field ass		uction of all pa			Y COMPLIANO		ection VIII, Di	vision 1 of
Certificate of Authoriza			ires	1	9			
eNam	e					Signed		
		(assembler that ce	rtified and con-	structed field a	issembly)		(representa	itive)
		CERTIFICAT	E OF FIELI	D ASSEMB	LY INSPECTIO	N		
e undersigned, holding a	_and employe	ssion issued by ed by	the Nation	al Board of	Boiler and Pre	ssure Vessel Insp		
			of		_have compare	ed the statements	in this Manuf	acturers' D
ort with the described p	ressure vessel	and state that	parts referr	ed to as dat	a items		, not i	ncluded in
ificate of shop inspecti- cted and assembled this	on, have beer s pressure ves	n inspected by ssel in accorda	me and tha	at to the be	est of my knov	vledge and belief.	the manufac	turer has c
subjected to a hydrosta								
signing this certificate no						ed or implied, cor		

described in the Manufacturers' Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any per-

__ Commissions_

(Nat'), Bd. (incl. endorsements) state, prov. and no.)

sonal injury or property damage or a loss of any kind arising from or connected with this inspection.

(Authorized Inspector)

Date_

_____ Signed____