FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS DATA

As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

Manufactured and certified by Buff	alo Technologies Corporation	on, 750 Eas	st Ferry Str					ii =a a		State State (
?. Martifactured for Flour Daniel Inc	c., P.O. Box 950, Marlton,	NJ 08053		(Name and address	dress of Manufact	urer)					••••
3. Location of Installation Flour Dan	iel Inc., 206 Roche Dr., Be	elvidere, N.		113							
4. Type: Horizontal	Steamchest	(Name and address) 18665 —			55119-01			9373 19		1997	
(Horiz., vert., or sphere) (Tan 5 ASME Code, Section VIII, Div. 1	(Honz., vert., or sphere) (Tank separator, jkt. vessel, heat exh., e				(CRN)		(Drawing No.)		(Nat'l. Bd. No.)		(Year built)
tems 6 - 11 Incl. to be completed for s	Edition and Addenda (date ingle wall vessels, jackets of			e Case No. ell of heat exc	hangers, or ch		Special Service Iti-chamber v		d)		
6. Shell (a) No. of course(s):	FIVE	(b) Overall length (fi					119"				
Course(s)	Thick	kness	Long. Joint (Cat. A)		Circum, Joint (Cat.		t. A, B & C) Heat 7		Heat Tre	eatment	
No. Diameter, in. Length (ft & in.)	Spec./Grade or Type	Nom.	Согг.	Type F	ull, Spot, None	Eff. Typ	oe Full, S	pot, None	Eff.	Temp.	Time
1 40° 48.250°	SA-516 Gr 70	.375"	.062"	1	None	70 -	-				
1 50' 16.750' 1 40' 48'	SA-516 Gr 70	.375'	.062*	1	None	70 1		None 70 -			
1 40' 48' 7. Heads: (a)	SA-516 Gr 70 NA NA	.375*	.062*	1 (b)	None	70 -	NA N			l	
	I'l Spec. No., Grade or Type) H.T	Time & Temo		(0)		(Mati Spec. No.	, Grade or Type		& Tem	0	
Location (Top, Thickness	Radius	Elliptical	Conical		al Flat	Side to	Pressure		Cat		
Bottom, Ends) Min. Corr.	Crown Knuckle	Ratio	Apex Ang	gle Radius	Diameter	Convex	Concave	Туре	F	ull, Spot, N	one Eff.
(a) — — —	.i					-					
(b) -		L	.! <u></u>				<u> </u>		:		
fremovable, bolts used (describe other	r fastening) NA										
3. Typh of jacket	NA			laskat alasura		., Grade, Size, No					
The second of th			,	Jacket closure			N/	4			
If he sive dimensions NA				Jackel Gosule		(De	N/ scribe as ogee 8	weld, bar,		oodbo or o	kotob
If bo,, give dimensions NA		*** (***) * (** *** *** **		Jacket Gosule		(De		weld, bar,		scribe or s	ketch.
If box, give dimensions NA - MAWP 150/FV	psi at max. temp.	300	,	° F		(De		lf bolte	ed, de	scribe or s	- H20
		300 (internal	N. C. Karris and Market				scribe as ogee 8	lf bolte	ed, de		
- MAWP 150/FV	nal)	(internal) (e	°F	Min. desigr	n metal temp.	scribe as ogee 8	k weld, bar, If bolte 	ed, de		
internal) (external) (ss 2 oe sections.	(internal (ind 25 PSI) (e	° F external) o and the compone	Min. desigr	n metal temp.	-20	weld, bar, If bolte	ed, de	150/FV	
O. Impact test NO PER UCS-66 (a) 11. Hydro., ************************************	ss 2 De sections. 1 Ty 304L	(internal	i) (e	o and the compone	Min. design	n metal temp.	-20	k weld, bar, If bolte 	ed, de at VELD	150/FV	
MAWP 150/FV (Internal) (extension of the complete of the compl	nal) SS 2 De sections. DTy 304L ATI Spec. No.)	(internal (ind (25 PSI 40* Dia., in (subject	i) (e icate yes or no to press.)	o and the compone Proof tes	Min. design	n metal temp.	-20	k weld, bar, If bolte 	VELD It (webb	150/FV ED ed or boiled) —	
150/FV (internal) (extension of the completed for tult of the complete for t	Dia., in er Type 0.5 2 2.5 2 2.5 2 2.6 2 2.7 304L 1.7 304L 2.7 304L 2.7 304L 2.7 304L 2.7 304L 3.7 304L 4.7 304L 5.7 304L 6.7 304L 7.7 304L 7.7 304L 9.7 304L	(internal (ind (25 PSI 40* Dia., in (subject) 250* D., in.	i) (e icate yes or no	o and the compone Proof tes 1' Nom. thk., in065'	Min. design	O Allow., in.	-20	k weld, bar, If bolte 	VELD Attach	150/FV ED ed or boiled)	psi.
150/FV (internal) (extension of the complete distribution of the complete	Dia., in er Type 0.5 2 2.5 2 2.5 2 2.6 2 2.7 304L 1.7 304L 2.7 304L 2.7 304L 2.7 304L 2.7 304L 3.7 304L 4.7 304L 5.7 304L 6.7 304L 7.7 304L 7.7 304L 9.7 304L	(internal (ind (25 PSI 40* Dia., in (subject 250* D., in.	icate yes or no	o and the compone Proof tes 1' Nom. thk., in065'	Min. design	O Allow., in.	-20 NA 404 Number	k weld, bar, If bolte 	VELD Attach	150/FV ED ed or boiled) ment TRAIGHT	psi.
MAWP 150/FV (internal) (extent) (extent) (internal) (extent) (extent) (internal) (extent) (extent) (extent) (internal) (extent) (exte	poe sections. Ty 304L ari Spec. No.) Dia., in 2304L e or Type Onner chambers of jacketed v	(internal (ind (25 PSI 40* Dia., in (subject 250* D., in.	i) (e icate yes or no it to press.) N thannels of (b) Ove	o and the compone Proof tes 1' Nom. thk., in065' Nom. thk., in. of heat exchangerall length (ft.)	Min. design	O Allow., in.	-20 NA 404 Number	weld, bar, If bolte ° F V Attachmer	VELD Attach S Type	150/FV ED ed or boiled) ment TRAIGHT	psi.
internal) (extension of course(s): (internal) (extension of course(s): (internal) (extension of course(s):	poe sections. Ty 304L ari Spec. No.) Dia., in 2304L 1. e or Type Onner chambers of jacketed v	(internal (25 PSI 40* Dia., in (subject 250* D., in.	i) (e icate yes or no it to press.) N thannels of (b) Ove	o and the compone Proof tes 1' Nom. thk., in	Min. design	O Allow., in.	-20 N/ 404 Number 47 um. Joint (Cal	weld, bar, If bolte ° F V Attachmer	VELD Attach S Type	ED ed or boiled) ment TRAIGHT (Straight or U	psi.
(Internal) (extension of the completed for tutted in the completed for i	pe sections. Ty 304L aff Spec. No.) Dia., in 2304L 1. e or Type Onner chambers of jacketed v TWO Material	(internal (ind (25 PSI 40* Dia., in (subject) 250* D., in. ressels or c	icate yes or not to press.) N hannels of (b) Over	o and the compone Proof tes 1' Nom. thk., in	Min. design int(s) impact tested st Corr. r gauge ers. & in.):	O Allow., in.	-20 N/ 404 Number 47 um. Joint (Cal	veld, bar, If bolte of F	VELD Attach S Type	ED ed or boiled) ment TRAIGHT (Straight or U	psi.
(Internal) (extension of the complete of the c	pe sections. Ty 304L aff Spec. No.) Dia., in 2304L e or Type Onner chambers of jacketed v TWO Material Spec./Grade or Type	(internal (ind (25 PSI 40* Dia., in (subject 250* D., in. ressels or c	icate yes or not to press.) Nhannels of (b) Overness	o and the compone Proof tes 1' Nom. thk., in065' Nom. thk., in. of heat exchangerall length (ft & Long. Jo	Min. design int(s) impact tested to corr. r gauge ers. & in.): int (Cat. A) ull, Spot, None	O Allow., in. Corr. Allow., in.	-20 N/ 404 Number 47 um. Joint (Cal	veld, bar, If bolte of F	VELD Attach S Type	ED ed or boiled) ment TRAIGHT (Straight or U	psi.
Impact test NO PER UCS-66 (a) 1. Hydro., AND TEST No. test presidents 12 and 13 to be completed for tult 12. Tubesheet: SA-240 Stationary (Matt Spec. No.) 3. Tubes: SA-249 Ty TF Matt Spec. No., Gradents 14 - 18 incl. to be completed for in 4. Shell (a) No. of course(s): Course(s) No. Diameter, in. Length (ft. & in.) 1 40* 38 1/8* 1 40* 9 1/8*	pe sections. Ty 304L ari Spec. No.) Dia., in 2304L 1. e or Type Onner chambers of jacketed w TWO Material Spec/Grade or Type SA-240 Ty 304L SA-240 Ty 304L	(internal 25 PSI 40* Dia., in (subject 250* D., in. ressels or c Thickr Nom	hannels of (b) Ove	o and the compone Proof tes 1' Nom. thk., in065' Nom. thk., in. of heat exchangerall length (ff & Long. Jo	Min. design int(s) impact tested corr. r gauge ers. & in.): bint (Cat. A) ill, Spot, None None	O Allow., in. Corr. Allow., in. Circ Eff. Type	-20 NA 404 Number 47 um. Joint (Cal	veld, bar, If bolte ° F V Attachmen	VELD Attach S Type	ED ed or boiled) ment TRAIGHT (Straight or U	psi.
Impact test NO PER UCS-66 (a) 1. Hydro., ************************************	pe sections. Ty 304L aff Spec. No.) P304L the or Type Onner chambers of jacketed with TWO Material Spec./Grade or Type SA-240 Ty 304L SA-516 Gr 70	(internal 25 PSI 40* Dia., in (subject 250* D., in. ressels or c Thickr Nom. 375*	hannels of (b) Ove	o and the compone Proof tes 1' Nom. thk., in065' Nom. thk., in. of heat exchangerall length (ft & Long. Jo	Min. design int(s) impact tested corr. r gauge ers. & in.): bint (Cat. A) ill, Spot, None None	O Allow., in. Corr. Allow., in. Circ Eff. Type 70	-20 N/ 404 Number 47 um. Joint (Cale	veld, bar, If bolte ° F V Attachmer 7 1/4* I. A, B & C xot, None	VELD It (webb Attach S Typee	ED ed or boiled) ment TRAIGHT (Straight or U	psi.
Impact test NO PER UCS-66 (a) 1. Hydro., ************************************	pe sections. Ty 304L ari Spec. No.) Dia., in 2304L 1. e or Type Onner chambers of jacketed w TWO Material Spec/Grade or Type SA-240 Ty 304L SA-240 Ty 304L	(internal 25 PSI 40* Dia., in (subject 250* D., in. ressels or c Thickr Nom. 375*	hannels of (b) Over	o and the compone Proof tes 1' Nom. thk., in065' Nom. thk., in. of heat exchangerall length (ff & Long. Jo	Min. design Int(s) impact tested Corr. Ir gauge ers. & in.): Dint (Cat. A) Ill, Spot, None None None	O Allow., in. Corr. Allow., in. Circ Eff. Type 70	-20 N/ 404 Number 47 um. Joint (Cale Full, Sp. SA-515 Gr. Sp. Grade or Typ.	veld, bar, If bolte ° F V Attachmer 7 1/4* I. A, B & C xot, None	VELD It (webble	ED ed or boiled) ment TRAIGHT (Straight or U	psi.
Impact test NO PER UCS-66 (a) 11. Hydro., TANALE, or TESTAD. test presidents 12 and 13 to be completed for tut 12. Tubesheet: SA-240 Stationary (Matt Spec. No.) 3. Tubes: SA-249 Ty TF Matt Spec. No., Gradems 14 - 18 incl. to be completed for in 4. Shell (a) No. of course(s): Course(s) 1. Heads: (a) (Matt Spec. No.) 3. Tubes: SA-249 Ty TF Matt Spec. No., Gradems 14 - 18 incl. to be completed for in 4. Shell (a) No. of course(s): Course(s)	Dia., in Page 18 pe sections. Dia. in Page 19 pe sections. TWO Material Spec./Grade or Type SA-240 Ty 304L SA-240 Ty 304L SA-516 Gr 70	(internal 25 PSI 40* Dia., in (subject 250* D., in. vessels or c 7hickr Nom. 375* 375*	hannels of (b) Over	o and the compone Proof tes 1' Nom. thk., in065' Nom. thk., in. of heat exchang erall length (ft & Long. Jo Type Fu 1 1 (b) Hemispherica	Min. design Int(s) impact tested Corr. Ir gauge ers. & in.): Dint (Cat. A) Ill, Spot, None None None	O Allow., in. Corr. Allow., in. Circ Eff. Type 70 70	-20 N/ 404 Number 47 um. Joint (Cale Full, Sp. SA-515 Gr. Sp. Grade or Typ.	veld, bar, If bolte ° F V Attachmer 7 1/4* I. A, B & C xot, None	VELD It (webb Attach S Typee	ED ed or boiled) ment TRAIGHT (Straight or U	psi.
MAWP 150/FV (internal) (extent) Impact test NO PER UCS-66 (a) 11. Hydro., ************************************	pe sections. Ty 304L aff Spec. No.) P304L aff Spec. No.) Dia., in P304L 1. e or Type Onner chambers of jacketed w TWO Material Spec./Grade or Type SA-240 Ty 304L SA-240 Ty 304L SA-516 Gr 70 (Spec. No., Grade or Type) H.TTir Radius	(internal 25 PSI 40* Dia., in (subject 250* D., in. vessels or c Thickr Nom	icate yes or not little press.) Note thannels of (b) Over ness Corr.	o and the compone Proof tes 1' Nom. thk., in065' Nom. thk., in. of heat exchang erall length (ft & Long. Jo Type Fu 1 1 (b) Hemispherica	Min. design Int(s) impact tested Corr. r gauge ers. & in.): Dint (Cat. A) Ill, Spot, None None None	O Allow., in. Corr. Allow., in. Circ Eff. Type 70 (Mati Spec. No.	-20 N/ 404 Number 47 urm. Joint (Cale Full, Sp. SA-515 Gr. Grade or Typ Pressure	veld, bar, If bolte ° F V Attachmer 7 1/4* I. A, B & C Oot, None 70 a) H.T Tim	VELD It (webb Attach S Typee	ED ed or boiled) ment TRAIGHT (Straight or U	psi.
Internal (extension of the property of the pro	pe sections. Ty 304L aff Spec. No.) P304L aff Spec. No.) Dia., in P304L 1. e or Type Onner chambers of jacketed w TWO Material Spec./Grade or Type SA-240 Ty 304L SA-240 Ty 304L SA-516 Gr 70 (Spec. No., Grade or Type) H.TTir Radius	(internal 25 PSI 40* Dia., in (subject 250* D., in. vessels or c Thickr Nom	icate yes or not little press.) Note thannels of (b) Over ness Corr.	o and the compone Proof tes 1' Nom. thk., in065' Nom. thk., in. of heat exchang erall length (ft & Long. Jo Type Fu 1 1 (b) Hemispherica	Min. design Int(s) impact tested Corr. r gauge ers. & in.): Dint (Cat. A) III, Spot, None None None None I Flat Diameter	O Allow., in. Corr. Allow., in. Circ Eff. Type 70 (Mati Spec. No.	-20 N/ 404 Number 47 urm. Joint (Cale Full, Sp. SA-515 Gr. Grade or Typ Pressure	veld, bar, If bolte ° F V Attachmen 7 1/4* L. A, B & C 200t, None 70 1) H.T Tim	VELD It (webb Attach S Typee	ED ed or boiled) ment TRAIGHT (Straight or U	psi.) zatment Time

iné	100/FV	150	psi at max, temp.	300	300	° F	Min. desig	n metal temp.	-20 ° I	Fat 1	00/FV psi.		
MAWP	(internal)	(external)	por at max. temp.	(internal)	(external)	Ξ:							
Impact test	NO PER UHA-				100				mi vina s	e == = == ==			
			45	(Indicate yes or no and the component(s) impact tested) 150 Proof test						NA			
and the same of th	#u., or####b.tes		15	J.		NI ICSI			- 2 COV EN EV	S 400 000	no stringin see s		
€, N , ins	pection, and safet		117-7-2	en e		Nozzle T	hickness	Reinforcement	How A	tached	Location		
Purpose (Inlet,	Diameter	Flange		faterial Flar	nge .	Nom.	Corr.	Material	Nozzle	Flange	(Insp. Open.)		
Jutlet, Drain, etc.		Туре	Nozzle	SA-105		.250"	.062"	None	WELDED	WELDED	SHELL		
In!et/Outlet	2 10"	RFSO	SA-53 Gr B ERW	SA-105	-	.375	0 .	None	WELDED		BONNET		
Inlet/Outlet	2 24'	LAPJT	SA-240 Ty 304L	N	man 8	3000#	10	None	WELDED	_	SHELL		
Relief	2 1'	CPLG	SA-105		cl 150#	.216"	.062"	None	WELDED	WELDED	10' NOZZLE		
Outlet	1 3'	RFSO	SA-53 Gr B ERW	. alfai a	CI 130#	3000#	0	None	WELDED		24' NOZZLES		
Gauge	2 3/4"	CPLG	SA-182 Ty F304L	The up the recover	cl 150#	.145"	.062*	None	WELDED	WELDED	10" NOZZLE		
Gauge	2 1 1/2"	RFSO	SA-106 Gr B SMLS			3000#	0	None	WELDED	·	BONNET		
Relief	1 3/4"	CPLG	SA-182 Ty F304L	and the same of the same	 Vil		DDLES	Attacl		ELDED TO	SHELL		
.0. Supports: S	kirt NO (Yes or No.	Lugs	Legs	C (No.)	Others		Describe)	- · · · · ·		(\Vhere and			
List the name o	of part, item numb	er, mfg's. nar	(No.) entified and signed by Co me and identifying num ined for corre	osion resi	stance	per UC	L-23 (a).					
Shell cour	rse, 2, 50"	x 40"di	a, 3"lg, SA-5	16 gr70, .	375thk,	.062"	cor, No	weld seam	s 70%eff.				
CORRECTED	COPY DATED	2-3-98	: ADDED /FV T	O SHELL MA	WP								
,													
	C R RESEARCH		Ci	ERTIFICATE C	F SHOP C	OMPLIA	NCE						
111 Cf. 11	- I lb - alalaman	to made in th	is report are correct ar	nd that all details	s of design.	material,	construction	n, and workman	ship of this va	essel confo	orm to		
the ASME Co	rat the statement and for Pressure V	essels, Secti	on VIII, Division 1.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	•						1		
	of Authorization N			10,968			Ex	pires Fel	bruary 18	1 19 9	(
Date 2/3	kg Nam	7.70	Buffalo i	Technologies Co	orporation			Signed	my	1/	٥		
00.000	,,,,	e 2000.14 2 2000.14	a companie de la comp	(Manufacturer)		Nepres			Repre	sentative)			
				ERTIFICATE				ore and the State	or Province of		N.Y.		
I, the undersi	gned, holding a v	alid commissi	ion issued by The Nati	onal Board of Bo	oiler and Pre	ssure ve	ssei inspecii	ors and the State Hartford	10T	V. 40	have inspected		
and employe			Steam Boiler Inspecti		Co.		of D	and state that, to		knoudoda	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
the pressure	vessel described	in this Manuf	acturer's Data Report	on 2	3	, 19 C	78 ·	and state that, to	o (ne best of my	Innanatori	or hie		
employer ma nor his emplo	kes any warranty bye shalf be liable	, expres sed o e in any manr	e vessel in accordance or implied, concerning the properties in			loss of ar				spection.	spector		
Date 2 /	، مداد	Signed	(Authori	zed Inspectory			•		incl. endorsement, S	state, Province	and No.)		
1 25.50		722	CERTIF	ICATE OF FIE	LD ASSEM	BLY CO	MPLIANC	E			. 0.45		
We certify the	at the statements	on this report	t are correct and that	the field assen	nbly constru	ction of all	parts of this	s vessel conform	s with the requi	rements of	ASME		
Code, Section	on VIII, Division 1.						Exc	xires		, 19			
		Name	\$ 1. 1 ME 444					Signed					
Date	102 mile 180	INAIIIE	2 3020 iss 5 %	(Assembler)					(Repre	entative)			
Sexue		5 5 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CERTII	FICATE OF FIR	ELD ASSE	WRLLIN	SPECTION	Y					
and amplaye	yd hy		ion issued by The Nat					31					
have compa	ared the stateme	nts in this I	Manufacturer's Data	Report with the	ne describer	of shop in	e vessel a	nd state that ave been inspect	parts referred ed by me and I	to as data to the best	a items of my knowledge		
ar Thief,	the Manufacturer	has constru	ucted and assembled t	his pressure ves	and in accor	dance with	h ASME CO	de Section VIII. I	Division 1. The	described	vessel es any warranty.		
pecte	ed and subjected	to a hydrosta	tic test of	n this Manufact	psi. by : ureds Dala	Report.	Furthermore	e, neither the Ir	spector nor h	P	59		
be liable in a Date	any manner for an	y personal in Signed	jury or property damag	e or a loss of an	ny kind arisin	g nom or	mmissions	mur una mapeene					
			(Autho	nzed Inspector)				(Nat'i Board	inci. endorsement,	otate, FIOVIIIO			