APV Condenser/Shell a	nd Tube Heat Exchanger
Mfg: APV	Model:
Stock No. 850.PFZ	Serial No.

APV Condenser/Shell and Tube Heat Exchanger. S/N E-2515, The shell side is 316L and the tube side is Titanium. It is 18 foot 10 in. and has a tube surface of 1,752 square feet. There are (2) 16 in, shell side inlets. There are (558) 3/4 in. Tubes, and the shell is 31 in. inside diameter. The way that it was set up the temperature in was 113 °F and the temperature out was 85 °F on the tube side. On the shell side the temperature in was 74 °F and the temperature out was 99 °F. The heat exchange in btu's per hour was 8,184,000. Dimensions 19 ft. L, 32 in. W, 28 in. H (overall 78 in.), Inlet 28 in. / 1 on bottom at 6 in., 7 in. one on bottom 6 in. Pipe that came with chiller is 7 ft. L, 20 in. Diameter, one on side 12 in. Diameter. 1-1/2 in. outside of pipe.

Killebrew Engr.Corp, now Emfab, INc. House Springs, Mo. 63051 2/20/79 certified 6/6/80
Pfizer, Groton Connecticut
Vapor pounds per hour shell 70 methanol and 7,912 water
Liquid 334,750 pounds per hour
Non condensables 35 pounds per hour air
Size 31-192

Square foot surface 1,752 shell 1,752

Temp in 113 shell 74 tube
Temp out 85 shell 99.2 tube
Operating pressure shell 1.39 psia
No passes per shell crossflow shell 6 tube side
Velocity 5.5 ft/sec tube
Pressure drop .2/.12 shell 10/13 psi tube

Heat exchange btu/hr 8,184,000

Transfer rate surface 210

Design pressure 60+ shell Design temperature 350 Tubes titanium 558 3/4 Shell 316 L 31" id

75 tube 350

















* Killebrew Engr. Corp. Mow. ENFAB, INC. House Springs, Mo. 63051

HEAT EXCHANGER SPECIFICATION SHEET

	1		A	
:	customer Pfizer Inc.		JOB 140.	The second second
	ADDRESS Eastern Point	Road	REFERENCE NO.	
4	4 PLANT LOCATION Groton, Co	nn 06340	PROPOSAL NO.	***************************************
* •	SERVICE OF UNIT Methanol-w	ntn. 00340	DATE 2/20/79	
Xe	E C 7E 7 1 7 7		ITEM NO.	
* 7	150 - 170 177	Fixed Tubesheet (VERT.) CO	NNECTED IN	
	15 175	2 SHELLS/UNIT ONE SQ. FT.	SURF./SHELL (GROSS) /75	- 0
8		PERFORMANCE OF ONE UNIT	(SEPT) 1/5	2
. 9		SHELL SIDE		
10 11	T-10.0 CINCOLATED	Methanol-water Vapor	TUBE SIDE Salt Water	<u> </u>
12	La Contraction	A PART OF THE PROPERTY OF THE PART OF THE	The state of the s	
13		70 Methanol + 7912 wate		
14	2:8010		334,750	
15	O (L/III)			
16	MOLITCORDERSABLES	35 lbs/hr air		
17	STEAM CONDENSED			
12				
19	VISCOSITY		1.03	
20	MOLECULAR WEIGHT			
21	SPECIFIC HEAT			
2 2	THERMAL CONDUCTIVITY	BTU/LB-° F	.97 BTU	/LB-° F
23	LATENT HEAT	BTU/HR-FT-° F	BTU/HS	-
24	TEMPERATURE IN	ETU/LB	E	TU/LB
*25	TEMPERATURE OUT	113 °F	74 (Max. Summer)	° F
26	OPERATING PRESSURE	85 °F	99.2	° F
*27	NO. PASSES PER SHELL	1.39 psia PSIG		PSIG
* 28	VELOCITY	Cross flow X	6	
¥29	PRESSURE DROP Max.	.2 /0.12 PSI		T/SEC
30	FOULING RESISTANCE (MIN.)	.0005 PSI	10 //3	PSI
*31	THE PART OF THE PA		.001′	
* 32	TRANSFER RATE-SERVICE	4,000 MTD CORE	ECTED- F 22.2 (WTD))
33	•	CONSTRUCTION OF ONE SHELL		
34	DESIGN PRESSURE	60 1 F 77		
35	TEST PRESSURE	OU Trove PSI	75	
36				PSI
	DESIGN TEMPERATURE	350 PSI		PSI PSI
* 37	DESIGN TEMPERATURE TUBES TI NO. 55	350 °F	350	PSI ° F
*37 [* 38 [DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. ID 27	350 °F	350 6 PITCH /" Squa	PSI °F
*3 7 * 38 * 39	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OF	350 °F 8 0.0.3/4 EWG 20 LENGTH /	350	PSI °F
*37 *38 *39 *40	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OF Y TUBESHEET—STATIONARY 7//	350 \$ 0.0.3/4 BWG 20 LENGTH # 0.D. SHELL COVER STICS WAS CHANNEL COVER	350 SPITCH /" Squa	PSI ・F ンセノ
*37 *38 *39 *40 *41	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OT Y. TUBESHEET—STATIONARY BAFFLES—CROSS 3/6 / TYPE	350 S C.D.3/4 EWG 20 LENGTH O.D. SHELL COVER STICS WAS CHANNEL COVER TUBESHEET-FLOATH	350 PITCH /" Squa (INTEG) (R.	PSI °F
*37 *38 *39 *40 *41 *42	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OT Y. TUBESHEET—STATIONARY 7: Jina	350 8 0.D.3/4 EWG 20 LENGTH "O.D. SHELL COVER SET SWOOD CHANNEL COVER L ON 3/6/2 TUBESHEET-FLOATH Suppost FLOATING HEAD CO	350 PITCH /" Squa (INTEG) (R.	PSI ・F ンセノ
*37 *38 *39 *40 *41 *42 43	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OT Y. TUBESHEET—STATIONARY TI DIPE BAFFLES—CROSS 3/6 L TYPE BAFFLES—LONG 3/6 L TYPE TUBE SUPPORTS	350 S C.D.3/4 EWG 20 LENGTH O.D. SHELL COVER STICS WAS CHANNEL COVER TUBESHEET-FLOATH	350 PITCH /" Squa (INTEG) (R.	PSI °F
*37 *38 *39 *40 *41 *42 43	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OT X. TUBESHEET—STATIONARY T. J. BAFFLES—CROSS 3/6 L TYPE BAFFLES—LONG 3/6 L TYPE TUBE SUPPORTS TUBE TO TUBESHEET JOINT	350 8 0.D.3/4 EWG 20 LENGTH "O.D. SHELL COVER SET SWOOD CHANNEL COVER L ON 3/6/2 TUBESHEET-FLOATH Suppost FLOATING HEAD CO	350 PITCH /" Squa (INTEG) (R.	PSI °F
*37 *38 *39 *40 *41 *42 43 44	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OT Y. TUBESHEET—STATIONARY TI DI BAFFLES—CROSS 3/6 L TYPE BAFFLES—LONG 3/6 L TYPE TUBE SUPPORTS TUBE TO TUBESHEET JOINT GASKETS	350 8 0.D.3/4 EWG 20 LENGTH "O.D. SHELL COVER SET SWOOD CHANNEL COVER L ON 3/6/2 TUBESHEET-FLOATH Suppost FLOATING HEAD CO	350 PITCH /" Squa (INTEG) (R.	PSI ・F ンセノ
*37 *38 *39 *40 *41 *42 43 44 45	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OT Y. TUBESHEET—STATIONARY TIPE BAFFLES—CROSS 3/6 L TYPE BAFFLES—LONG 3/6 L TYPE TUBE SUPPORTS TUBE TO TUBESHEET JOINT GASKETS CONNECTIONS.SHELL SIDE IN	350 \$ 0.0.3/4 EWG 20 LENGTH "O.D. SHELL COVER CHANNEL COVER TUBESHEET-FLOATH Support FLOATING HEAD CO IMPINGEMENT PROT	350 PITCH /" Squa (INTEG) (R. NG VER JECTION	PSI °F
*37 *38 *39 *40 *41 *42 *43 *45 *45	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OF Y TUBESHEET—STATIONARY TYPE BAFFLES—CROSS 3/6 L TYPE BAFFLES—LONG 3/6 L TYPE TUBE SUPPORTS TUBE TO TUBESHEET JOINT GASKETS CONNECTIONS-SHELL SIDE IN CHANNEL SIDE IN	350 \$ 0.0.3/4 BWG 20 LENGTH " O.D. SHELL COVER SET: 5 Was Channel Cover L or: 3/6 / TUBESHEET-FLOATH Support FLOATING HEAD CO IMPINGEMENT PROT 1 OUT 3-4" OUT 6	350 PITCH /" Squa (INTEG) (R. NG VER LECTION RATING 150# RF	PSI ・F ンセノ
*37 *38 *39 *40 *41 *42 *43 *44 *45 *45	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OT Y TUBESHEET—STATIONARY TIPE BAFFLES—CROSS 3/6 L TYPE BAFFLES—LONG 3/6 L TYPE TUBE SUPPORTS TUBE TO TUBESHEET JOINT CASKETS CONNECTIONS SHELL SIDE IN CHANNEL SIDE IN CORROSION ALLOWANCE—SHELL SIDE	350 \$ 0.0.3/4 EWG 20 LENGTH "O.D. SHELL COVER SET SWAP CHANNEL COVER TUBESHEET-FLOATH SUPPORT FLOATING HEAD CO IMPINGEMENT PROT 2 - 16" OUT 3-4" OUT 6	350 PITCH /" Squa (INTEG) (R. NG VER ECTION RATING 150# RF RATING 150# RE	PSI °F
*37 *38 *39 *40 *41 *42 *43 *44 *45 *43 *44 *45 *43 *43	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OT Y. TUBESHEET—STATIONARY TIPE BAFFLES—CROSS 3/6 L TYPE BAFFLES—LONG 3/6 L TYPE TUBE SUPPORTS TUBE TO TUBESHEET JOINT GASKETS CONNECTIONS-SHELL SIDE IN CHANNEL SIDE IN CORROSION ALLOWANCE—SHELL SIDE CODE REQUIREMENTS ASME	350 \$ 0.0.3/4 BWG 20 LENGTH " O.D. SHELL COVER SET: 5 Was Channel Cover L or: 3/6 / TUBESHEET-FLOATH Support FLOATING HEAD CO IMPINGEMENT PROT 1 OUT 3-4" OUT 6	350 PITCH /" Squa (INTEG) (R. NG VER ECTION RATING 150# RF RATING 150# RF	PSI °F
*37 *38 *39 *40 *41 *42 *43 *44 *45 *45 *45 *45	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OT Y TUBESHEET—STATIONARY TYPE BAFFLES—CROSS 3/6 L TYPE BAFFLES—LONG 3/6 L TYPE TUBE SUPPORTS TUBE TO TUBESHEET JOINT GASKETS CONNECTIONS-SHELL SIDE IN CHANNEL SIDE IN CHANNEL SIDE IN CORROSION ALLOWANCE—SHELL SIDE CODE REQUIREMENTS ASME REMARKS	350 \$ 0.D. 20 LENGTH O.D. SHELL COVER STEPS WAS CHANNEL COVER TUBESHEET-FLOATH FLOATING HEAD CO IMPINGEMENT PROT L. J.	PITCH /" Squa (INTEG) (R. NG OVER JECTION RATING 150# RF RATING 150# RF TEMA CLASS C	PSI °F
*37 *38 *39 *40 *41 *42 *43 *44 *45 *45 *45 *45 *51	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OF Y. TUBESHEET—STATIONARY TI LIM BAFFLES—CROSS 3/6 L TYPE BAFFLES—LONG 3/6 L TYPE TUBE SUPPORTS TUBE TO TUBESHEET JOINT GASKETS CONNECTIONS SHELL SIDE IN CORROSION ALLOWANCE—SHELL SIDE CODE REQUIREMENTS ASME REMARKS Shell side materials	350 \$ 0.0.3/4 EWG 20 LENGTH "O.D. SHELL COVER CHANNEL COVER TUBESHEET-FLOATH Support FLOATING HEAD CO IMPINGEMENT PROT L OUT L None TUBE SIDE NOT	PITCH /" Squa (INTEG) (R. NG. YER TECTION RATING 150# RF RATING 150# RF TEMA CLASS C	PSI °F
*37 *38 *39 *40 *44 *44 *45 *45 *47 *48 *49 *50 *51 *52	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OT Y. 1 TUBESHEET—STATIONARY TI OT Y. 1 TUBESHEET—STATIONARY TI OT Y. 1 BAFFLES—CROSS 3/6 L TYPE BAFFLES—LONG 3/6 L TYPE TUBE SUPPORTS TUBE TO TUBESHEET JOINT CASKETS CONNECTIONS SHELL SIDE IN CHANNEL SIDE IN CORROSION ALLOWANCE—SHELL SIDE CODE REQUIREMENTS ASME REMARKS Shell side materials materials to be tita	350 \$ 0.0.3/4 EWG 20 LENGTH "O.D. SHELL COVER CHANNEL COVER TUBESHEET-FLOATH FLOATING HEAD COMPONENT PROTECTION OF TUBE SIDE NOT TUBE SIDE SIDE NOT TUBE SIDE SIDE SIDE SIDE SIDE SIDE SIDE SID	PITCH /" Squa (INTEG) (R. NG. YER TECTION RATING 150# RF RATING 150# RF TEMA CLASS C	PSI °F
*37 *38 *39 *40 *41 *42 *43 *44 *45 *45 *45 *45 *50 *51	DESIGN TEMPERATURE TUBES TI NO. 55 SHELL 316 L S.S. I.D. 3/ CHANNEL OR BONNET TI OT Y. 1 TUBESHEET—STATIONARY TI OT Y. 1 TUBESHEET—STATIONARY TI OT Y. 1 BAFFLES—CROSS 3/6 L TYPE BAFFLES—LONG 3/6 L TYPE TUBE SUPPORTS TUBE TO TUBESHEET JOINT CASKETS CONNECTIONS SHELL SIDE IN CHANNEL SIDE IN CORROSION ALLOWANCE—SHELL SIDE CODE REQUIREMENTS ASME REMARKS Shell side materials materials to be tita	350 \$ 0.D. 20 LENGTH O.D. SHELL COVER STEPS WAS CHANNEL COVER TUBESHEET-FLOATH FLOATING HEAD CO IMPINGEMENT PROT L. J.	PITCH /" Squa (INTEG) (R. NG. YER TECTION RATING 150# RF RATING 150# RF TEMA CLASS C	PSI °F

FORM U-1 MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

	All the second s		374 - 17 - 17 - 17 - 17 - 17 - 17 - 17 -	a Hars Missour	 ri 6304
Manufactured by _Xill. Manufactured for	<u>ebrew Engineer</u>	Ing Corporat	manufacturer)	[] 1] <u>1] [] 1 3 6, 1) 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 </u>	
				and the second s	
	is <u>. Pfizer Inc.</u> Fizer Co., Grot		Comment of the Control of the Contro	-	project rest
			d address)	PB33708A-F	3
Type horiz ht. 6	Year Built	- Mary (Mary)		(Deamond)	
(Nat'l Brd No.) The chemical and physical		meet the continement	ts of material speci	fications of the ASME BO	ILER
The chemical and physical AND PRESSURE VESSEL sion 1 1977	CODE. The design, constant Addenda to Summe	truction, and workman 1979 and Code	nship conform to A	SME Rules, Section VIII,	Divi-
Canalai service per liG-120)(d)		and the same of the same of the same of		
Manufacturers' Partial Da	- Panote properly ident	tified and signed by	Commissioned Insp	ectors have been furnishe	id for
the following items of the	report:				7
tems 6-11 incl. to be comple	(Name of part, item Ited for single wall vessel.	ninai i mexissa	vessels, or shells of	heat exchangers osion Allowance	in.
Diam2ft.	7.500 in. Len	gth			Name of Party and Party an
	CERTIF	CATE OF COMPL	ANCE		4
We certify that the statement		or correct and tha	t all details of des	ign, material, construction	n, and
				ision Impart	4
workmanship of this vesser			by	(Representative)	1
	TOROT "	Manufacturer)	_ expiresJu	Ly 11 19 8	1
"U" Certificate of Authoriza	SUOTI 190.	ATE OF SHOP INS	PECTION	der manyeret fil former geforend felter filmer og i kløpe. He statiske er og op former se er er er er er er er	-
			. Louis, Mi	ssouri	and
Vassel made by Kille	brew Engr. Cor	<u>p.</u> at _ <u>St</u>	. LOUIS, 142	Proceura Vassal Inspectors	andior
Vessel made by KIIIE I, the undersigned, holding	a valid commission issu	ed by the National B	oard of Boller and r	ial Union	
the State or Province of		and employ	described in this	Manufacturers' Data Res	oort on
of 6-6-80	nave inspected	tate that, to the best	of my knowledge	and belief, the Manufactu	rer has
constructed this pressure	ressel in accordance with	ASME Code, Section	Alli, Olvision 1-		ą.
		and an all and a manifesta	any wacranty, 9X0	ressed or implied, concern	ning the }
By signing this certificate pressure vessel described liable in any manner for a	in the Manufacturers' D	ata Report. Furtherm operty damage or a	ore, neither the Ins loss of any kind ar	pector nor his employer sing from or connected v	vith this
inspection.	0			, and a second	
Date	to f.	Commission	NB616	5	
Signed	(Inspector)	Commission	(Nat'l Box	rd. State, Province and (40.)	-
	CERTIFICATE (OF COMPLIANCE	OR FIELD WORK		April 1982
We certify that the state	Jan (1)		har all details of d	esign, material, construct	:on. 3F4
We certify that the state workmanship of this vess	ments made in this lep	Code for Pressure Ve	ssels, Section VIII.	Division 1.	4
1			by	(Representative)	
Uate		(Manufacturer)	expires	19_	
"U" Certificate of Author	orization iyo.		the state of the s		
	CERTIFICATE	OF HELD ASSEM	pri magreono.		andler
I, the undersigned, holdi	ng a valid commission is	sued by the National	Board of Boiler and	Pressure Vessei Inspecto	ors aridioi
the State or Province of	1	31,0		Aantifacturers' Data Repor	t with the
of		e and the second second	ne .	TOT BUSINE	100 111 1110
					nufacturer
certificate of shop inspec	ction, have been mapeute embled this pressure ves	sel in accordance wit	h ASME Code, Sect	ion VIII, Division 1	
Has conscored and ass	es inspected and subjects	d to a hydrostatic tes	tof	, psi.	
The described vessel wa	as inspected and soujecte		en any warrants a	coressed or implied, cont	erning the
By signing this certifica	te neither the Inspector r	or his employer mai	rmore, neither the	apressed or implied, conc inspector nor his employs arising from ar connected	er shall be
pressure vessel describ	ed in this Manufacturers	property damage of	a loss of any king	arising from or connected	a with this
1	ar any personal injury or	brobard damage or	•		
inspection.	Maragaman agus in Maragaman an sinda mina pinagan dan dan ina a sa palaban kan dan sa pangan kan dan sa pangan	-			
Signed	and the same of th	Commissi	onssnd	Board, State, Province and inc	
1 2 3	(Virtualitati luabactor)		The second secon	Machine processes and compression of the contract of the contr	K C LEGICAL STREET STREET STREET
The state of the s					,

	H.T. Tan	1P	F Tim	10	Girt	, doub	le butt w	ie i'd	vilva ir me
	а.т			No. of Cou	h	100	(Welded, [33, Sngl, Lap, But	1) :
	ر ب سفوا	(Spot. Partie)	or Full)	No. or Cou	17366				
2	neada: (a) Meterial .		(Spec. No., Gr	3de)	(b) M	aterial	(Soec. No. G	
		Location		Minimum	Co	rrosion	Crown	Knuckle	
	110	a. Bottom, cr	rds)	Thickness		99newc	Radius	Ragius	Elliptical Ratio
	(a)	*** ** ********************************							
	(5)							and a selection of the second	
		Conical		Hemispher	rical	F	lat	Side to F	·····
	- A	Apax Angla		Radius			netar	to xevnoO)	
	(a)			***************************************	· · · · · · · · · · · · · · · · · · ·		*		
•	(b)	17				-			
er generalise en		*** * * *** *** ** ** * * * * *	and the second						11
nd beliefe	If remove	ible, baits use	ed (describe	Other fastenin	ngs)				
9.	Type of .	acket	of the greek			Proof T	(Material, Spec. No	o., Gr., Size, No.)	To the second design
	Jacket Ci	osura	Most reco	사용하다 평생되다		if bar.	give dimension	···	
	If borted.	describe or a	(Uescribe as	a ogun ik weid,	Der, etc.)		ร้างกระสาดรู้สั		
11.	Construct	ad for mex. a	illowable wo	cking pressur	_ 60)/FV 🚉 🛚	max. temp.	350_	18 14 18 1
					Ostatic, po	eumatic orco	max. temp moination tast p	90	Min. temp. (v
Iter	ns iz ing	13 to be som	pieted for tu	be sections		admane, or co	momentum (4st p	1834078	
. 12.		ts: Stationar				3161	_ Diam	35.750 (Subject to pre	
	Nominal 1	Thickness	370	in Corresion	n Aliowano	(T)	in. Attrohm	(Subject to pre	weld
		lenereM-						ent(Wai	ded, Soited)
			(Sowc. N						
		Mickness		in. Corros	ion Allows	inca	in.		
12	Attachmen Tubes: Ma								
13.	rubes; reu		3 338 G (Spec. No.,		O.D	/50in	. Nominal Thic	xness 20	in./or ga
•	Number.	558	(50mc. No.,	Type	strái	ght		The second second	and the second
itar	me 14 17 :-								
iser	ns 14-17 fr	et to be con	pleted for in	ner chambei	rs of lacker	ed vesseis or	channels of hea	t exchangers	
14.	Shell: Ma	cerialS	inec No Gol	Nomin	al Thickne	ss375	in. Corros	sion Allowance	
14.	Shell: Ma	cerial	inec No Gol	Nomin 750	ial Thickne	ss <u>375</u>	in. Corros	sion Allowanca .	reactive and in a state of the
	Diem.	2	2005. No., Gr.)	750 in	l ength	ss <u>3/5</u> 1	in. Corros _ft 11.50	sion Allowance . Oin.	
	Diam	2 ongitudinal	n doub	750 in. le but 1	Length _ t_welc	ss	in. Corros n 11.50	on Allowance in. Efficience	
	Diam	2 ongitudinal	no. Gr.)	750 in. le but 1	Length _ t_welc	ss	in. Corror 11.50 spot (spot or	on Allowance . in. Full ald	iency 8
	Diam	2 ongitudinal	no. Gr.)	750 in. le but 1	Length _ Length _ t Welc J. Lap, Bun) Girth	ss	in. Corror 11.50 spot (spot or	on Allowance in. Efficience	iency <u>8</u>
15.	Diam. Saarns: L. H.T. Tarn:	2 ongitudinal ongitudinal ongitudinal	doub or Full)	750 in. 1e hutt elced. Obl. Sng ne	Length _ Length _ t Welc J. Lap, Bun) Girth	ss	in. Corror 11.50 1	in. in. Fuilt Ald In. Sogi, Lap, Built	iency <u>8</u>
15.	Diam. Saarns: L. H.T. Tarn:	2 ongitudinal ongitudinal ongitudinal ongitudinal	it /· doub (We or Full)	750 in. le huttelded Dal. Sing	Length _ t welc t welc ji. Lap, Burth Girth rses1	ss	in. Corrortn	o in. Fuil Effici ald A516-70	iency <u>8</u>
15.	Diam. Soams: L. H.T. Tam; R.T. Heads: (a)	2 congitudinal	doub (We F Tim	750 in. 1e but 1 leded Obl, Sng te No. of cour -70 (Spec. No., Gri	Length Length Length Length Length Length Length Lap, Burth Lap, Burth Lap, Girth research		in Corros t 11.50 r Spot (Spot or (Spot or (Weided, Or	in. in. Fuilt Ald In. Sogi, Lap, Built	iency 8
15.	Diem. Seams: L. Seams: L. H.T. Tern; R.T. Heads: (a)	2 ongitudinal SOO t SOO t Soor Partial Macerial Location Bottom, Enc	to Full)	750 in. 1e but t eleced, Obl. Sng ne No. of cour 70 (Spec. No., Gn Minimum Thickness	Length Length Length Length Length Length Length Lap, Burth Lap, Burth Lap, Girth research	ss	in. Corror ft 11.50 F Spot (Spot or (Spot or (Weided, De	in. Fruit Effici ald Sogi, Lap, Buit! A516-70 (Spec. No., G	iency <u>8</u>
15.	Diem. Seams: L. Seams: L. H.T. Tern; R.T. Heads: (a)	2 ongitudinal SOO t SOO t Soor Partial Macerial Location Bottom, Enc	to Full)	750 in. 1e but 1 leded Obl, Sng te No. of cour -70 (Spec. No., Gri	Length Length Length Length Length Length Length Lap, Burth Lap, Burth Lap, Girth research		in Corros t 11.50 r Spot (Spot or (Spot or (Weided, Or	in. Efficient of the state of t	iancy 8
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