Aspen Exchanger Design and Rating Shell & Tube V10 File: C:\Users\neetsaki\Desktop\course design2\exchanger_rate.EDR

TEMA Sheet

Heat Exchanger Specification Sheet

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1	Company:										
2	Location:										
3	Service of Unit:		Our Refer								
<u> </u>											
4	Item No.:		ur Refere	ence:							
5			Job No.:	ъс. ВЕМ	Llarizanta	1		Connected in	: 1 parallel	1 aprice	
6		mm			Horizonta				<u> </u>	1 series	
7	Suri/unit(eii.)	Surf/unit(eff.) 4.1 m ² Shells/unit 1 Surf/shell(eff.) 4.1 m ² PERFORMANCE OF ONE UNIT									
8	Fluid allocation			PERF	T				Tuba	Cida	
10	Fluid allocation			Shell Side			Tube Side				
_	Fluid quantity, Total kg/s				0.347				1.9762		
11 12	Vapor (In/Out) kg/s							0	0	0	
13	Liquid					347		0.347	1.9762	1.9762	
14	Liquid kg/s Noncondensable kg/s				0.547			0.547	0	0	
15	Noncondensable Kg/s				0		<u> </u>	0	0		
	Temperature (In/Out) °C				78.82			42.43	25	30.12	
17	Bubble / Dew point °C				/ /		-	/	/	/	
					/ 742.87		+	/ 748.79	/ 993.96	/ 990.64	
19	Viscosity Vapor/Liquid kg/m³ Viscosity mPa-s							/ 0.4705	/ 0.9125	/ 0.8489	
20	Molecular wt, Vap			4 0	†		1		, 5.5125	, 5.5155	
21	Molecular wt, NC										
22	Specific heat			kJ/(kg-K)	,	3.297	+	/ 3.243	/ 4.12	/ 4.133	
23	Thermal conductivity			W/(m-K)	,	0.1582		/ 0.1595	/ 0.6063	/ 0.5527	
24	Latent heat			kJ/kg							
25	Pressure (abs)			bar	1	.04		1.02641	1	0.92538	
	` '	• •				0.05 / 0		 3	0.8	/ 0.83	
27	Pressure drop, allow./d	calc.		bar	0.1	104		0.01359	0.20684	0.07462	
28	Fouling resistance (mi			m²-K/W			0		0	0 Ao based	
29	Heat exchanged	42.5		kW				MTD (cor	rected) 29.57	°C	
30	Transfer rate, Service	054.4			Dietr	400.0		`~.			
JU	Hallstel Tate, Service	351.4			Dirty	480.2		Cle	an 480.2	W/(m²-K)	
31	Transier rate, Service		ONSTRU	CTION OF ONE S		480.2		Cle		W/(m²-K) etch	
	Transier rate, Service		ONSTRU	CTION OF ONE S	SHELL	480.2	Tub	e Side		, ,	
31 32		CC			SHELL	3.4473				, ,	
31 32		CC		Shell S	SHELL ide		88 /			, ,	
31 32 33	Design/Vacuum/test pr	cc	bar	Shell Si 3.44738 /	SHELL ide		88 /	e Side /	Ske	etch	
31 32 33 34	Design/Vacuum/test pridesign temperature	cc	bar	Shell Si 3.44738 / 115.5	SHELL ide		88 /	e Side / 5.56	Ske	, ,	
31 32 33 34 35	Design/Vacuum/test pr Design temperature Number passes per sh	cc ressure nell	bar °C	Shell Si 3.44738 / 115.5 1 0 1 20.93 /	BHELL ide / 6		35.0	5.56 2 0 5 / -	Ske	etch	
31 32 33 34 35 36 37 38	Design/Vacuum/test properties of the Design temperature Number passes per shour Corrosion allowance Connections Size/Rating	ressure lell In Out	bar °C mm	Shell Si 3.44738 / 115.5 1	BHELL ide / 6	3.4473	69	5.56 2 0 5 / -	Ske	etch	
31 32 33 34 35 36 37 38 39	Design/Vacuum/test produced by Design temperature Number passes per short Corrosion allowance Connections Size/Rating ID	ressure lell In Out Intermediate	bar °C mm mm	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 /	6	3.4473	35.0s 35.0s	se Side / 5.56 2 0 5 / - 5 / - / -	Ske	etch	
31 32 33 34 35 36 37 38 39 40	Design/Vacuum/test produced Design temperature Number passes per short Corrosion allowance Connections Size/Rating ID Tube #: 48	ressure lell In Out Intermediate	bar °C mm mm	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 / 20.93	6	3.4473 1 1 1 ength: 2	35.09 35.09 2000	se Side / 5.56 2 0 5 / - 5 / - / mm Pitc	Ske	etch	
31 32 33 34 35 36 37 38 39 40 41	Design/Vacuum/test pr Design temperature Number passes per sh Corrosion allowance Connections Size/Rating ID Tube #: 48 Tube type: Plain	ressure In Out Intermediate OD: 14	bar °C mm mm	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 / / age 1.24 None	6	3.4473 1 1 1 ength: 2	35.09 35.09 2000 #:	se Side / 5.56 2 0 5 / - 5 / - / mm Pitc #/m	Ske	etch	
31 32 33 34 35 36 37 38 39 40 41 42	Design/Vacuum/test pr Design temperature Number passes per sh Corrosion allowance Connections Size/Rating ID Tube #: 48 Tube type: Plain Shell SS 304	ressure In Out Intermediate OD: 14	bar °C mm mm	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 / 20.93	6	3.4473 1 1 1 ength: 2	35.09 35.09 2000 #:	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m	n: 18 mm Material:SS 304	etch	
31 32 33 34 35 36 37 38 39 40 41 42 43	Design/Vacuum/test properties of the properties	ressure In Out Intermediate OD: 14 ID SS 304	bar °C mm mm	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 / Agge 1.24 None OD 184	6	3.4473 1 1 1 ength: 2	35.09 35.09 2000 #:	se Side / / 5.56 2 0 5 / - 5 / - / mm Pitc #/m Shell cover	n: 18 mm Material:SS 304	etch	
31 32 33 34 35 36 37 38 39 40 41 42 43 44	Design/Vacuum/test properties of the properties	ressure In Out Intermediate OD: 14 ID SS 304 SS 304	bar °C mm mm	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 / / age 1.24 None	6	3.4473 1 1 1 ength: 2	35.09 35.09 2000 #: mm S	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover	n: 18 mm Material:SS 304	etch	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	Design/Vacuum/test properties of the properties	ressure In Out Intermediate OD: 14 ID SS 304	bar °C mm mm Tks. Aver Insert:	Shell Si 3.44738 / 115.5i 0 1 20.93 / 1 20.93 / Agge 1.24 None OD 184	SHELL ide / 66	3.4473 1 1 1 ength: 2	35.09 35.09 35.09 2000 #: mm S	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floating mpingement pro	h: 18 mm Material:SS 304 g - tection None	Tube pattern:30	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	Design/Vacuum/test properties of the properties of the procession of the process	ressure In Out Intermediate OD: 14 ID SS 304 SS 304	bar °C mm mm Tks. Aver Insert: 164	Shell Si 3.44738 / 115.5i 1 0 1 20.93 / 1 20.93 / Agge 1.24 None OD 184	SHELL ide / 66	3.4473 1 1 1 ength: 2	35.09 35.09 35.09 2000 #: mm S	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floating mpingement pro	n: 18 mm Material:SS 304 g - tection None	Tube pattern:30	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Design/Vacuum/test properties of the properties of the procession of the process	ressure In Out Intermediate OD: 14 ID SS 304 SS 304 -	bar °C mm mm Tks. Aver Insert: 164	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 / age 1.24 None OD 184	SHELL ide / 66	3.4473 1 1 1 ength: 2	35.09 35.09 35.09 2000 #: mm S	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floatin mpingement pro 41.86 Ho	h: 18 mm Material:SS 304 g - tection None	Tube pattern:30	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	Design/Vacuum/test pr Design temperature Number passes per sh Corrosion allowance Connections Size/Rating ID Tube #: 48 Tube type: Plain Shell SS 304 Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross SS 304 Baffle-long - Supports-tube	ressure In Out Intermediate OD: 14 ID SS 304 SS 304	bar °C mm mm Tks. Aver Insert: 164	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 / age 1.24 None OD 184	SHELL ide / 66	3.4473 1 1 1 ength: 2 Fin n Cut(%d)	35.09 35.09 35.09 2000 #: mm S	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floatin mpingement pro 41.86 Ho	n: 18 mm Material:SS 304 g - tection None prizSpacing: c/c 146 Inlet 225.42	Tube pattern:30 .05 mm 2 mm	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	Design/Vacuum/test pr Design temperature Number passes per sh Corrosion allowance Connections Size/Rating ID Tube #: 48 Tube type: Plain Shell SS 304 Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross SS 304 Baffle-long - Supports-tube Bypass seal	ressure In Out Intermediate OD: 14 ID SS 304 SS 304 -	bar °C mm mm Tks. Aver Insert: 164	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 / age 1.24 None OD 184	SHELL ide / 66	3.4473 1 1 1 ength: 2 Fin Cut(%d)	35.09 35.09 35.09 2000 #: mm S	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floatin mpingement pro 41.86 Ho	n: 18 mm Material:SS 304 g - tection None	Tube pattern:30 .05 mm 2 mm	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	Design/Vacuum/test properties of the properties	ressure In Out Intermediate OD: 14 ID SS 304 SS 304 - U-bend	bar °C mm mm Tks. Aver Insert: 164	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 / age 1.24 None OD 184	ental	3.4473 1 1 1 Fin Cut(%d)	35.09 35.09 35.09 2000 #: mm S	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floatin mpingement pro 41.86 Ho Type Expanded only	n: 18 mm Material:SS 304 g - tection None prizSpacing: c/c 146 Inlet 225.42	Tube pattern:30	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	Design/Vacuum/test properties of the properties of the provided HTML of the properties of the properti	ressure In Out Intermediate OD: 14 ID SS 304 SS 304 - U-bend	bar °C mm mm Tks. Aver Insert: 164	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 / age 1.24 None OD 184	SHELL ide / 66	3.4473 1 1 1 ength: 2 Fin n Cut(%d)	35.09 35.09 35.09 2000 #: mm S	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floatin mpingement pro 41.86 Ho Type Expanded only	n: 18 mm Material:SS 304	Tube pattern:30 .05 mm 2 mm	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52	Design/Vacuum/test propertion Design temperature Number passes per shour Corrosion allowance Connections Size/Rating ID Tube #: 48 Tube type: Plain Shell SS 304 Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross SS 304 Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side	ressure In Out Intermediate OD: 14 ID SS 304 SS 304 - U-bend - 1369	bar °C mm mm Tks. Aver Insert: 164	Shell Si 3.44738 / 115.5 1 0 1 20.93 / 1 20.93 / age 1.24 None OD 184	ental	3.4473 1 1 1 ength: 2 Fin n Cut(%d)	35.09 35.09 35.09 2000 #: mm S	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floatin mpingement pro 41.86 Ho Type Expanded only	n: 18 mm Material:SS 304 tection None prizSpacing: c/c 146 Inlet 225.42	Tube pattern:30	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53	Design/Vacuum/test propertion Design temperature Number passes per shorrosion allowance Connections Size/Rating ID Tube #: 48 Tube type: Plain Shell SS 304 Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross SS 304 Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side Floating head	ressure In Out Intermediate OD: 14 ID SS 304 SS 304 - U-bend - 1369	bar °C mm mm Tks. Aver Insert:	Shell Si 3.44738 / 115.5i 1 0 1 20.93 / 1 20.93 / 20.93 / Aage 1.24 None OD 184	SHELL ide / 66	3.4473 1 1 1 ength: 2 Fin n Cut(%d)	35.09 35.09 35.09 2000 #: mm S C T In	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floatin mpingement pro 41.86 Ho Type Expanded only Bundle exit Flat Me	n: 18 mm Material:SS 304	Tube pattern:30	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 50 51 52 53 54	Design/Vacuum/test propersion temperature Number passes per short Corrosion allowance Connections Size/Rating ID Tube #: 48 Tube type: Plain Shell SS 304 Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross SS 304 Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side Floating head	ressure In Out Intermediate OD: 14 ID SS 304 SS 304 - U-bend - 1369 - d -	bar °C mm mm Tks. Aver Insert: 164 Type	Shell Si 3.44738 / 115.5i 1 0 1 20.93 / 1 20.93 / 20.93 / Aage 1.24 None OD 184	ental Tube-tubes Tube sic	3.4473 1 1 1 Fin Cut(%d) Sheet joint type Notes	35.04 35.04 35.04 2000 #: mm S C T Ir	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floatin mpingement pro 41.86 Ho Type Expanded only Bundle exit Flat Me	n: 18 mm Material:SS 304	Tube pattern:30 .05 mm 2 mm	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 50 51 52 53 54	Design/Vacuum/test propersion temperature Number passes per short Corrosion allowance Connections Size/Rating ID Tube #: 48 Tube type: Plain Shell SS 304 Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross SS 304 Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side Floating head Code requirements	ressure In Out Intermediate OD: 14 ID SS 304 SS 304 - U-bend U-bend 1369 - d - ASME Co	bar °C mm mm Tks. Aver Insert: 164 Type	Shell Si 3.44738 / 115.5i 0 1 20.93 / 1 20.93 / 20.93 / age 1.24 None OD 184	ental Tube-tubes Tube sic	3.4473 1 1 1 Fin Cut(%d) Sheet joint type Notes	35.04 35.04 35.04 2000 #: mm S C T Ir	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floatin mpingement pro 41.86 Ho Type Expanded only Bundle exit Flat Me	n: 18 mm Material:SS 304	Tube pattern:30 .05 mm 2 mm	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55	Design/Vacuum/test propersion temperature Number passes per shour connections Size/Rating ID Tube #: 48 Tube type: Plain Shell SS 304 Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross SS 304 Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side Floating head Code requirements Weight/Shell	ressure In Out Intermediate OD: 14 ID SS 304 SS 304 - U-bend U-bend 1369 - d - ASME Co	bar °C mm mm Tks. Aver Insert: 164 Type	Shell Si 3.44738 / 115.5i 0 1 20.93 / 1 20.93 / 20.93 / age 1.24 None OD 184	ental Tube-tubes Tube sic	3.4473 1 1 1 Fin Cut(%d) Sheet joint type Notes	35.04 35.04 35.04 2000 #: mm S C T Ir	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floatin mpingement pro 41.86 Ho Type Expanded only Bundle exit Flat Me	n: 18 mm Material:SS 304	Tube pattern:30 .05 mm 2 mm	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56	Design/Vacuum/test propersion temperature Number passes per shour connections Size/Rating ID Tube #: 48 Tube type: Plain Shell SS 304 Channel or bonnet Tubesheet-stationary Floating head cover Baffle-cross SS 304 Baffle-long - Supports-tube Bypass seal Expansion joint RhoV2-Inlet nozzle Gaskets - Shell side Floating head Code requirements Weight/Shell Remarks	ressure In Out Intermediate OD: 14 ID SS 304 SS 304 - U-bend U-bend 1369 - d - ASME Co	bar °C mm mm Tks. Aver Insert: 164 Type	Shell Si 3.44738 / 115.5i 0 1 20.93 / 1 20.93 / 20.93 / age 1.24 None OD 184	ental Tube-tubes Tube sic	3.4473 1 1 1 Fin Cut(%d) Sheet joint type Notes	35.04 35.04 35.04 2000 #: mm S C T Ir	se Side / 5.56 2 0 5 / - 5 / - mm Pitc #/m Shell cover Channel cover Tubesheet-floatin mpingement pro 41.86 Ho Type Expanded only Bundle exit Flat Me	n: 18 mm Material:SS 304	Tube pattern:30 .05 mm 2 mm	