

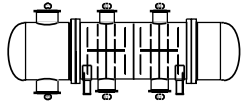
Aspen Exchanger Design and Rating Shell & Tube V14

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TEMA Sheet

Heat Exchanger Specification Sheet

1	Company:									
2	Location:									
3	Service of Unit:					Our Reference:				
4	Item No.:					Your Reference:				
5	Date:		Rev No.:		Job No.:					
6	Size: 1092 - 2184.4 mm		Type: BHM Horizontal		Connected in: 1 parallel 1 series					
7	Surf/unit(eff.) 198.3 m ²		Shells/unit 1		Surf/shell(eff.) 198.3 m ²					
8	PERFORMANCE OF ONE UNIT									
9	Fluid allocation		Shell Side			Tube Side				
10	Fluid name		Chilled Water			Process Gas				
11	Fluid quantity, Total kg/h		565822			92154				
12	Vapor (In/Out) kg/h		0 0			528		103		
13	Liquid kg/h		565822 565822			1323		1748		
14	Noncondensable kg/h		0 0			90303		90303		
15										
16	Temperature (In/Out) °C		7 11			46		18.35		
17	Bubble / Dew point °C		/ /			-227.07 / 71.51		-227.1 / 71.38		
18	Density Vapor/Liquid kg/m ³		/ 1000.12 / 999.82			10.22 / 990.88		11.09 / 977.26		
19	Viscosity cp		/ 1.4267 / 1.2693			0.0113 / 0.5834		0.0105 / 0.8009		
20	Molecular wt, Vap					8.9		8.88		
21	Molecular wt, NC					8.88		8.88		
22	Specific heat kJ/(kg-K)		/ 4.2 / 4.193			3.269 / 4.801		3.273 / 4.712		
23	Thermal conductivity W/(m-K)		/ 0.5725 / 0.581			0.112 / 0.6387		0.1048 / 0.5973		
24	Latent heat kJ/kg					2492.7		2583.3		
25	Pressure (abs) bar		3.5 3.43773			31.01325		30.82013		
26	Velocity (Mean/Max) m/s		0.49 / 0.74			16.49 / 16.9				
27	Pressure drop, allow./calc. bar		0.25 0.06227			0.2		0.19312		
28	Fouling resistance (min) m ² -K/W		9E-05			0.00017 0.00022		Ao based		
29	Heat exchanged 2.265 Mkcal/h		MTD (corrected) 21.12 °C							
30	Transfer rate, Service 628.9		Dirty 708.3			Clean 904.7		W/(m ² -K)		
31	CONSTRUCTION OF ONE SHELL					Sketch				
32			Shell Side			Tube Side				
33	Design/Vacuum/test pressure:g kPa		413.686 / /			3447.38 / /				
34	Design temperature / MDMT °C		48.89 /			82.22 /				
35	Number passes per shell		2			2				
36	Corrosion allowance mm		3.18			3.18				
37	Connections In mm		2 304.8 / -			1 406.4 / -				
38	Size/Rating Out		2 254 / -			1 406.4 / -				
39	Nominal Intermediate		/ -			/ -				
40	Tube #: 1659 OD: 19.05 Tks. Average 2.11 mm Length: 2184.4 mm Pitch: 23.81 mm Tube pattern:30									
41	Tube type: Plain Insert:None Fin#: #/m Material:Carbon Steel									
42	Shell Carbon Steel ID 1092.2 OD 1117.6 mm		Shell cover -							
43	Channel or bonnet Carbon Steel		Channel cover -							
44	Tubesheet-stationary Carbon Steel -		Tubesheet-floating -							
45	Floating head cover -		Impingement protection None							
46	Baffle-cross Carbon Steel Type Double segmental Cut(%d) 14.13		HorizSpacing: c/c 196.85 mm							
47	Baffle-long Carbon Steel Seal Type		Inlet 157.48 mm							
48	Supports-tube U-bend 0		Type							
49	Bypass seal		Tube-tubesheet joint Expanded only (2 grooves)(App.A "i")							
50	Expansion joint -		Type None							
51	RhoV2-Inlet nozzle 1160		Bundle entrance 2220			Bundle exit 3006		kg/(m-s ²)		
52	Gaskets - Shell side -		Tube side			Flat Metal Jacket Fibe				
53	Floating head -									
54	Code requirements ASME Code Sec VIII Div 1		TEMA class R - refinery service							
55	Weight/Shell 8584.3 Filled with water 11662.8		Bundle 4671.3			kg				
56	Remarks									
57										
58										