

Aspen Exchanger Design and Rating Shell & Tube V10

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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: 152 - 2000		mm		Type: BEM Horizontal		Connected in: 1 parallel		1 series	
7	Surf/unit(eff.)		4.1 m ²		Shells/unit 1		Surf/shell(eff.)		4.1 m ²	
8	PERFORMANCE OF ONE UNIT									
9	Fluid allocation				Shell Side			Tube Side		
10	Fluid name									
11	Fluid quantity, Total				kg/s 0.347			1.9762		
12	Vapor (In/Out)				kg/s 0			0		
13	Liquid				kg/s 0.347			1.9762		
14	Noncondensable				kg/s 0			0		
15										
16	Temperature (In/Out)				°C 78.82			42.43		
17	Bubble / Dew point				°C /			/		
18	Density Vapor/Liquid				kg/m ³ / 742.87			/ 748.79		
19	Viscosity				mPa-s / 0.4247			/ 0.4705		
20	Molecular wt, Vap									
21	Molecular wt, NC									
22	Specific heat				kJ/(kg-K) / 3.297			/ 3.243		
23	Thermal conductivity				W/(m-K) / 0.1582			/ 0.1595		
24	Latent heat				kJ/kg					
25	Pressure (abs)				bar 1.04			1.02641		
26	Velocity (Mean/Max)				m/s 0.05 / 0.06			0.8 / 0.83		
27	Pressure drop, allow./calc.				bar 0.1104			0.01359		
28	Fouling resistance (min)				m ² -K/W 0			0 0 Ao based		
29	Heat exchanged 42.5				kW			MTD (corrected) 29.57		
30	Transfer rate, Service 351.4				Dirty 480.2			Clean 480.2		
31	CONSTRUCTION OF ONE SHELL									
32					Shell Side			Tube Side		
33	Design/Vacuum/test pressure bar				3.44738 /			3.44738 /		
34	Design temperature °C				115.56			65.56		
35	Number passes per shell				1			2		
36	Corrosion allowance mm				0			0		
37	Connections		In mm		1 20.93 / -			1 35.05 / -		
38	Size/Rating		Out		1 20.93 / -			1 35.05 / -		
39	ID		Intermediate		/ -			/ -		
40	Tube #: 48		OD: 14		Tks. Average 1.24		mm		Length: 2000	
41	Tube type: Plain		Insert:None		Fin#:		#/m		Material:SS 304	
42	Shell SS 304		ID 164		OD 184		mm		Shell cover -	
43	Channel or bonnet		SS 304						Channel cover -	
44	Tubesheet-stationary		SS 304		-				Tubesheet-floating -	
45	Floating head cover		-						Impingement protection None	
46	Baffle-cross SS 304		Type		Single segmental		Cut(%d) 41.86		HorizSpacing: c/c 146.05	
47	Baffle-long -		Seal Type						Inlet 225.42	
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 1369				Bundle entrance 5		Bundle exit 1		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		241.2		Filled with water 278.9		Bundle 69.6		kg	
56	Remarks									
57										
58										