

Aspen Exchanger Design and Rating Shell & Tube V14

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Printed: 2025-04-18 at 오전 8:57:28

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: 56.1024 - 206.6921 in		Type: BEM Horizontal		Connected in: 1 parallel 1 series					
7	Surf/unit(eff.) 9552.2 ft²		Shells/unit 1		Surf/shell(eff.) 9552.2 ft²					
8	PERFORMANCE OF ONE UNIT									
9	Fluid allocation		Shell Side			Tube Side				
10	Fluid name		Condensates->Condens Out			3->PA Return				
11	Fluid quantity, Total lb/h		854306.4			1085110				
12	Vapor (In/Out) lb/h		14.7 0			0 137487.2				
13	Liquid lb/h		854292.1 854306.4			1085110 947623.1				
14	Noncondensable lb/h		0 0			0 0				
15										
16	Temperature (In/Out) °F		345.97 240.96			176.11 237.37				
17	Bubble / Dew point °F		345.96 / 599.4 343.48 / 597.72			179.13 / 553.11 178.28 / 552.49				
18	Density Vapor/Liquid lb/ft³		1.06 / 38.526 / 42.093			/ 41.189 0.885 / 40.737				
19	Viscosity cp		0.0103 / 0.2199 / 0.3714			/ 0.3433 0.0102 / 0.3067				
20	Molecular wt, Vap		79.29			57.66				
21	Molecular wt, NC									
22	Specific heat BTU/(lb-F)		0.5754 / 0.6509 / 0.5983			/ 0.579 0.5204 / 0.6029				
23	Thermal conductivity BTU/(ft-h-F)		0.016 / 0.045 / 0.059			/ 0.055 0.015 / 0.054				
24	Latent heat BTU/lb		104.7 106.2			127.5 120.3				
25	Pressure (abs) psi		102.06 100.12			104.6 103.75				
26	Velocity (Mean/Max) ft/s		1.77 / 1.98			2.37 / 9.2				
27	Pressure drop, allow./calc. psi		2 1.94			3 0.85				
28	Fouling resistance (min) ft²-h-F/BTU		0.001			0.001 0.0013 Ao based				
29	Heat exchanged 56039060 BTU/h		MTD (corrected) 85.23 °F							
30	Transfer rate, Service 68.83 Dirty 68.82 Clean 81.66 BTU/(h-ft²-F)									
31	CONSTRUCTION OF ONE SHELL					Sketch				
32			Shell Side			Tube Side				
33	Design/Vacuum/test pressure:g psi		116.03 / /			116.03 / /				
34	Design temperature / MDMT °F		410 /			302 /				
35	Number passes per shell		1			1				
36	Corrosion allowance in		0.125			0.125				
37	Connections In in		1 19.25 / -			1 15.25 / -				
38	Size/Rating Out		1 15.25 / -			1 19.25 / -				
39	ID Intermediate		/ -			/ -				
40	Tube #: 2899 OD: 0.75 Tks. Average 0.083 in Length: 5.25 m Pitch: 0.9375 in Tube pattern:30									
41	Tube type: Plain Insert:None Fin#: #/ft Material:Carbon Steel									
42	Shell Carbon Steel ID 56.1024 OD 57.126 in					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 Single segmental Cut(%d) 25.4					HorizSpacing: c/c 23.0315 in				
47	Baffle-long - Seal Type					Inlet 43.1092 in				
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 358		Bundle entrance 260		Bundle exit 314		lb/(ft-s²)			
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 43577.4 Filled with water 64407.9		Bundle 32907.2		lb					
56	Remarks									
57										
58										