STYRENE PARK OFFSITE

Document Title:

Chiller (Evaporator) Data Sheet

Evaporator capacity shall be compatible with project documents and submitted compressors capacity.

R0	21-02-2024	IFA	F.sh	M.O	A.M
Rev.	**Issued Date**	**DESCRIPTION**	**PREPARED**	**CHECKED**	**APPROVED**

REVISION RECORD SHEET

Page	Revisions								Page	Revisions						
Page	R0	R1	R2	R3	R4	R5	R6			R0	R1	R2	R3	R4	R5	R6
1	X								41							
2	X								42							
3	X								43							
4									44							
5									45							
6									46							
7									47							
8									48							
9									49							
10									50							
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32									72							
33									73							
34									74							
35									75							
36									76							
37									77							
38									78							
39									79							
40									80							

HEAT EXCHANGER SPECIFICATION SHEET

Page 1

Released to the following company:

SI Units

SC — Related duty spec. shall be filled out or totally confim

SSD

Customer	PAD JAM PETROCHEMICAL					Job No.					
Address						Reference No.					
Plant Location	ASSALOUYEH					Proposal No.					
Service of Unit	Evaporator					Date	2/21/2024		Rev	0	
Size	600 - 924.32 x 2500	mm	Type	BKU	Horizontal	Item No.					
Surf/Unit (Gross/Eff)	61.76 / 58.884	m2	Shell/Unit	1		Connected In	1	Parallel	1	Series	
						Surf/Shell (Gross/Eff)	61.76 / 58.884	m2			

PERFORMANCE OF ONE UNIT

Fluid Allocation		Shell Side		Tube Side	
Fluid Name		Propane		Styrene	
Fluid Quantity, Total	kg/hr	3104.1		40623	
Vapor (In/Out)		1346.2	3104.1		
Liquid		1757.8		40623	40623
Steam					
Water					
Noncondensables					
Temperature (In/Out)	C	1.22	1.00	15.20	5.00
Specific Gravity		0.5331		0.9100	0.9184
Viscosity	mN-s/m2	0.0076 V/L 0.1295	0.0076	0.8200	0.9600
Molecular Weight, Vapor					
Molecular Weight, Noncondensables					
Specific Heat	kJ/kg-C	1.7857 V/L 2.4337	1.7835	1.6040	1.5780
Thermal Conductivity	W/m-C	0.0161 V/L 0.1090	0.0160	0.1500	0.1500
Latent Heat	kJ/kg	375.46	375.79		
Inlet Pressure	kPa	480.96		300.00	
Velocity	m/s	0.18		0.67	
Pressure Drop, Allow/Calc	kPa	5.000	3.429	50.000	11.847
Fouling Resistance (min)	m2-K/W	0.000170		0.000200	

Evaporator quantity for each unit of RU shall be specified

Related unit shall be specified

Shall be revised

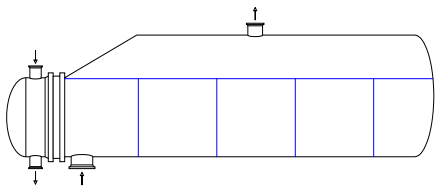
Please recheck

Heat Exchanged	183233 W		MTD (Corrected)	7.9 C
Transfer Rate, Service	391.85 W/m2-K	Clean 524.15 W/m2-K	Actual	431.07 W/m2-K

CONSTRUCTION OF ONE SHELL

Sketch (Bundle/Nozzle Orientation)

			Shell Side	Tube Side
Design/Test Pressure		kPaG	2200.0 /	680.00 /
Design Temperature		C	120.00	85.00
No Passes per Shell			1	4
Corrosion Allowance		mm	3.000	3.000
Connections Size & Rating	In	mm	1 @ 154.05	1 @ 77.927
	Out	mm	1 @ 102.26	1 @ 77.927
	Intermediate		@	@



Tube No.	188U	OD	19.050	mm	Thk(Avg)	1.651	mm	Length	2.500	m	Pitch 23.813 mm
Tube Type	Plain				Material	SA-334 6					Tube pattern30
Shell	SA-516 70N			ID 600.00	OD		mm	Shell Cover	SA-516 70N		(Integ.)
Channel or Bonnet	SA-516 70N							Channel Cover	SA-516 70N		
Tubesheet-Stationary	SA-350 LF2 CL.1							Tubesheet-Floating			
Floating Head Cover								Impingement Plate	Circular plate		
Baffles-Cross	Carbon steel			Type Support		%Cut (Diam)		Spacing(c/c)	611.90	Inlet	mm
Baffles-Long					Seal Type	None					
Supports-Tube					U-Bend					Type	Full support
Bypass Seal Arrangement		pairs seal strips			Tube-Tubesheet Joint		Expanded (2 grooves)				
Expansion Joint					Type	None					
Rho-V2-Inlet Nozzle	91.14	kg/m-s2			Bundle Entrance			Bundle Exit			kg/m-s2
Gaskets-Shell Side	Mach. Mtl. (Kammprofile\Flex. Face)				Tube Side	Mach. Mtl. (Kammprofile\Flex. Face)					
- Floating Head	Mach. Mtl. (Kammprofile\Flex. Face)										
Code Requirements								TEMA Class	R		
Weight/Shell	2116.0	kg		Filled with Water	4073.4	kg		Bundle	872.38	kg	

Remarks: Supports/baffle space = 3.

Material guarantee is in vendor scope.

Full Vacuum on Shell Side and Tube Side will be considered.

Note: Reported duty and flow rates include a user-specified multiplier of 1.10.