HEAT EXCHANGER SPECIFICATION SHEET

HTRI

Released to the following company:
SC
SSD

Units

		Job No.	
Customer	PAD JAM PETROCHEMICAL	Reference No.	
Address		Proposal No.	
Plant Location	ASSALOUYEH	Date	4/14/2024 Rev 2
Service of Unit	Evaporator	Item No.	RU-0001A-E-02
Size	600 - 924.32 x 2500 mm Type BKU Horizontal	Connected In	1 Parallel 1 Series
Surf/Unit (Gross/Eff)	61.76 / 58.956 m2 Shell/Unit 1	Surf/Shell (Gross/Eff)	61.76 / 58.956 m2

PERFORMANCE OF ONE UNIT

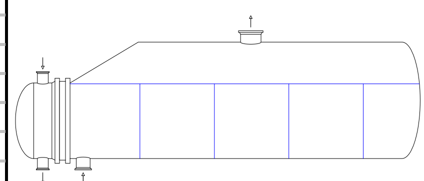
		Shell Side		Tube Side	
Fluid Allocation		Shell Side		Tube Side	
Fluid Name		Propane		Styrene	
Fluid Quantity, Total	kg/hr	3104.1		40623	
Vapor (In/Out)		1346.2	3104.1		
Liquid		1757.8		40623	40623
Steam					
Water					
Noncondensables					
Temperature (In/Out)	C	1.24	1.00	15.20	5.00
Specific Gravity		0.5331		0.9100	0.9184
Viscosity	mN-s/m2	0.0076 V/L 0.1294	0.0076	0.8200	0.9600
Molecular Weight, Vapor					
Molecular Weight, Noncondensables					
Specific Heat	kJ/kg-C	1.7859 V/L 2.4339	1.7838	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	375.43	375.75		
Inlet Pressure	bar	4.813		5.500	
Velocity	m/s	0.18		0.67	
Pressure Drop, Allow/Calc	bar	0.050	0.036	0.500	0.118
Fouling Resistance (min)	m2-K/W	0.000170		0.000200	

Heat Exchanged	0.1832 MegaWatts		MTD (Corrected) 7.9 C
Transfer Rate, Service	391.37 W/m2-K	Clean 524.10 W/m2-K	Actual 431.04 W/m2-K

CONSTRUCTION OF ONE SHELL

			Shell Side	Tube Side
Design/Test Pressure		barG	22.000 /	6.800 /
Design Temperature		C	120.00	85.00
No Passes per Shell			1	4
Corrosion Allowance		mm	3.175	3.175
Connections	In	mm	1 @ 92.050	1 @ 77.927
Size &	Out	mm	1 @ 146.33	1 @ 77.927
Rating	Intermediate		@	@

Sketch (Bundle/Nozzle Orientation)



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 (S) K03006	Tube patterr 30
Shell SA-516 70 Pl. K02700	ID 600.00 OD 622.22 mm	Shell Cover SA-516 70 Pl. K02700	(Integ.)
Channel or Bonnet SA-516 70 Pl. K02700		Channel Cover SA-516 70 Pl. K02700	
Tubesheet-Stationary SA-105 Forgings K03504		Tubesheet-Floating	
Floating Head Cover		Impingement Plate Circular plate	
Baffles-Cross Carbon steel	Type Support	%Cut (Diam)	Spacing(c/c) 612.70 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 714.96 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 2077.4 kg	Filled with Water 4053.1 kg		Bundle 836.05 kg

Remarks: Supports/baffle space = 3.

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

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