

TEMA Sheet

1	Customer: [REDACTED]	Location: [REDACTED]
2	Contract No: [REDACTED]	Unit: [REDACTED]
3	Item No: [REDACTED]	
4	Service: Regenerator Ovhd Condenser	
5	Date:	Rev No.: Job No.:
6	Size: 483 - 3660 mm	Type: AES Horizontal Connected in: 1 parallel 1 series
7	Surf/unit(eff.) 34,7 m ²	Shells/unit 1 Surf/shell(eff.) 34,7 m ²
8	PERFORMANCE OF ONE UNIT	
9	Fluid allocation	Shell Side Tube Side
10	Fluid name	Regenerator Overhead Cooling Water
11	Fluid quantity, Total kg/h	2198 120000
12	Vapor (In/Out) kg/h	2198 202 0 0
13	Liquid kg/h	0 1996 120000 120000
14	Noncondensable kg/h	0 0 0 0
15		
16	Temperature (In/Out) °C	117 50 28 38
17	Dew / Bubble point °C	117 -172,14
18	Density Vapor/Liquid kg/m ³	1,12 / 2,25 / 988 / 997,75 / 995,19
19	Viscosity cp	0,01 / 0,01 / 0,5416 / 0,8366 / 0,6784
20	Molecular wt, Vap	18,8 32,99
21	Molecular wt, NC	
22	Specific heat kcal/(kg-C)	0,4419 / 0,249 / 1,0157 / 1,001 / 1,0003
23	Thermal conductivity kcal/(h-m-C)	0,026 / 0,017 / 0,56 / 0,52 / 0,531
24	Latent heat kcal/kg	529,66 270,42
25	Pressure (abs) bar	1,9 1,88215 6 5,88334
26	Velocity (Mean/Max) m/s	/ 15,82 / 1,41
27	Pressure drop, allow./calc. kgf/cm ²	0,102 0,018 0,51 0,119
28	Fouling resistance (min) m ² -h-C/kcal	0,0006 0,0004 0,00046 Ao based
29	Heat exchanged 1198226 kcal/h	MTD (corrected) 70,89 °C
30	Transfer rate, Service 487 Dirty 497,2 Clean 1049,8 kcal/(h-m ² -C)	
31	CONSTRUCTION OF ONE SHELL	
32		Sketch
33	Design/Vacuum/test pressure bar	Shell Side Tube Side 7,7 / / 10 / /
34	Design temperature °C	147 60
35	Number passes per shell	1 2
36	Corrosion allowance mm	0 0
37	Connections In in	1 6 / - 1 6 / -
38	Size/Rating Out	1 6 / - 1 6 / -
39	Nominal Intermediate	/ - / -
40	Tube No. 126 OD 25,4 TksAverage 1,65 mm Length 3660 mm Pitch 31,75 mm	
41	Tube type Plain #/m Material SA-789 S31803 Tube pattern 90	
42	Shell SA-240 S31803 ID 490 OD 500 mm	Shell cover SA-240 S31803
43	Channel or bonnet SA-240 S31803	Channel cover SA-240 S31803
44	Tubesheet-stationary SA-182 F51 -	Tubesheet-floating SA-182 F51
45	Floating head cover SA-240 S31803	Impingement protection Square plate
46	Baffle-cross SA-240 S31803 Type Single segmental Cut(%d) 30,56	VertiSpacing: c/c 380 mm
47	Baffle-long - Seal Type Inlet 396,04 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 958 Bundle entrance 133 Bundle exit 5 kg/(m-s ²)	
52	Gaskets - Shell side Flat Metal Jacket Fibe Tube side Flat Metal Jacket Fibe	
53	Floating head Flat Metal Jacket Fibe	
54	Code requirements ASME Code Sec VIII Div 1 TEMA class R - refinery service	
55	Weight/Shell 1298,1 Filled with water 2131 Bundle 617,7 kg	
56	Remarks [REDACTED]	
57	[REDACTED]	
58	[REDACTED]	

