

**API 661 Air-Cooled Heat Exchanger - Specification Sheet**

Job No. _____

Item No. _____

AE-2102 A/B/C

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By _____

Date _____

11/6/2022

Revision _____

D04

Proposal No. _____

Contract No. _____

Inquiry No. _____

Order No. _____

Manufacturer	_____	Heat exchanged	(kW)	545.
Model no.	_____	Surface/Item-Finned tube	(m2)	907.84
Customer	_____	Bare tube	(m2)	43.569
Plant location	BINAK-GENAVEH	MTD, Eff.	(Deg. C)	29.3
Service	BIKAK GCS	Transfer rate-Finned	(W/m2-K)	21.842
Type draft	INDUCED	Bare tube, service	(W/m2-K)	455.11
Bay size (WxL)	(m) 2.045 x 3.500	Bare tube, clean	(W/m2-K)	515.80
No. of bays/Items	1			

Basic design data

Pressure design code	_____	Structural code	_____
Tube bundle code stamped	_____	Flammable service	_____
Heating coil code stamped	_____	Lethal/toxic service	_____

Performance Data - Tube Side

Fluid name	HC		In	Out
Total fluid entering	(kg/hr)	9530.4	0.0000 / 9530.4	41.310 / 9489.1
Dew/bubble point	(Deg. C)	/	0.0000 / 0.0000	0.0000 / 0.0000
	(Deg. C)		0.0000	0.0000
Latent heat	(kJ/kg)		/	/
Inlet pressure	(barG)	54.800	966.19 / 42.919	981.95 / 59.999
Pressure drop (All/Calc)	(bar)	0.700 / 0.229	4336.7 / 2416.2	4309.6 / 2405.5
Velocity (Allow/Calc)	(m/s)	/ 5.30	0.6688 / 0.0467	0.6515 / 0.0371
Inside fouling resistance (m2-K/W)		0.000200	0.3652 / 0.0163	0.4943 / 0.0142
	In	Out		
Temperature	(Deg. C)	142.30	60.00	

Performance Data - Air Side

Air inlet temperature	(Deg. C)	50.26	Face velocity	(m/s)	3.50
Air flow rate/item	(m3/hr)	80081	Minimum design ambient temp.	(Deg. C)	5.00
Mass velocity	(kg/s-m2)		Altitude	(m)	12.500
Air outlet temperature	(Deg. C)	70.48	Static pressure	(bar)	3.18e-3
Air flow rate/fan	(m3/hr)	46981			

Design, Material, and Construction

Design pressure	(barG)	60.000	Heating Coil	
Test pressure	(barG)		No. of tubes	_____
Design temperature	(Deg. C)	175.00	Tube outside diameter	(mm) _____
Min. design metal temp.	(Deg. C)		Tube material	_____
Tube bundle			Fin material and type	_____
Size (WxL)	(m)	0.908 X 3.500	Fin thickness	(mm) _____
No./Bay		2	ASME Code, Sec. VIII, Div. 1	_____
Number of tube rows		6	Heating fluid	_____
Bundles in parallel		2	Heating fluid flow rate	(kg/hr) _____
Bundles in series			Temperature (In/Out)	(Deg. C) _____ / _____
Structure mounting			Inlet pressure	(barG) _____
Pipe rack beams			Pressure drop (All/Calc)	(psi) _____ / _____
Ladders, walkways, platforms			Design temperature	(Deg. C) _____
Structure surface prep.			Design pressure	(barG) _____
Header surface prep.			Inlet/Outlet nozzle	_____ / _____
Louver			Header	
Material			Type	_____
Action control			Material	_____
Action type			Corrosion Allowance	(mm) _____
			No. of passes	6

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Design, Material, and Construction (continued)**Header (continued)**

Slope	
Plug material	
Gasket material	

Nozzle	No.	Size, (mm)	Rating/Facing
Inlet	1	102.26	
Outlet	1	102.26	
Vent			
Drain			
Chemical Cleaning			
Min. Wall Thk.			

Tube

Material		Carbon steel
Tube outside diameter	(mm)	25.400
Average wall thickness	(mm)	1.651

No./Bundle	78
Length	(m) 3.500
Pitch	(mm) 66.680
Layout	Triangular

Fin

Type	Circular
Material	Aluminum 1100-annealed
Thickness	(mm) 0.487
Selection temp.	(C)
Outside diameter	(mm) 55.400
Fin density	(fin/meter) 433.0
ASME Code, Sec. VIII, Div. 1	
Customer Specifications	

Mechanical Equipment**Fan**

Manufacturer		Unknown Manufacturer
No./Bay		2
RPM	(Revs/min.)	0.0000
Diameter	(m)	1.000
No. of blades		
Angle	(degrees)	
Pitch adjustment		
Blade material		
Hub material		
@design temp		
@min. ambient temp		
Tip speed		

Driver

Type	
Manufacturer	
No./Bay	
Driver	(kW) 9.08

RPM

Service factor	
Enclosure	
Voltage	
Phase	
Cycle	
Fan noise level	(dB)

Speed Reducer

Type	
Manufacturer	
No./Bay	
Service factor	
Speed ratio	
Support	
Vib. switch	
Enclosure	

Controls - Air Side

Air recirculation	
Degree control of outlet process temp.	
(Max. Cooling), +/-	/
Action on control signal failure	
Fan pitch	
Louvers	
Actuator air supply	
Fan	

Louvers	
Positioner	
Signal air pressure (barG)	
From	To
From	To
Supply air pressure (barG)	
From	To
From	To

Shipping

Plot area (WxL)	(m)	2.045 x 3.500
Bundle weight	(kg)	2728.1
Bay	(kg)	

Total	(kg)	8292.2
Shipping	(kg)	

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