

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

Job No. _____
Page Page 1
Date 11/6/2022
Proposal No. _____
Inquiry No. _____

Item No. AE-2101 A/B/C
By _____
Revision _____
Contract No. D04
Order No. _____

Manufacturer	_____	Heat exchanged	(kW)	<u>363.</u>
Model no.	_____	Surface/Item-Finned tube	(m2)	<u>796.98</u>
Customer	_____	Bare tube	(m2)	<u>35.190</u>
Plant location	<u>BINAK - GENAVEH</u>	MTD, Eff.	(Deg. C)	<u>27.0</u>
Service	<u>BINAK GCS</u>	Transfer rate-Finned	(W/m2-K)	<u>17.167</u>
Type draft	<u>INDUCED</u>	Bare tube, service	(W/m2-K)	<u>388.81</u>
Bay size (WxL)	(m) <u>1.676 x 3.500</u>	Bare tube, clean	(W/m2-K)	<u>431.33</u>
No. of bays/Items	<u>1</u>			

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	Total flow rate (Liq/Vap)	(kg/hr)	0.0000 / 9530.4	0.0000 / 9530.4	0.0000 / 9530.4				
Dew/bubble point	(Deg. C)	/	Water/Steam	(kg/hr)	0.0000 / 0.0000	0.0000 / 0.0000	0.0000 / 0.0000				
	(Deg. C)		Noncondensables	(kg/hr)	0.0000	0.0000	0.0000				
Latent heat	(kJ/kg)		Molecular Wt. (Vap/Non-cond)		/	/	/				
Inlet pressure	(barG)	19.000	Density (Liq/Vap)	(kg/m3)	/ 15.420	/ 15.420	/ 18.986				
Pressure drop (All/Calc)	(bar)	0.700 / 0.461	Specific heat (Liq/Vap)	(J/kg-C)	/ 2221.2	/ 2221.2	/ 2065.9				
Velocity (Allow/Calc)	(m/s)	/ 12.59	Thermal cond. (Liq/Vap)	(W/m-C)	/ 0.0415	/ 0.0415	/ 0.0332				
Inside fouling resistance (m2-K/W)		0.000200	Viscosity (Liq/Vap)	(cP)	/ 0.0147	/ 0.0147	/ 0.0127				
		In Out									
Temperature	(Deg. C)	124.00 60.00									

Performance Data - Air Side

Air inlet temperature	(Deg. C)	<u>50.26</u>	Face velocity	(m/s)	<u>3.50</u>
Air flow rate/item	(m3/hr)	<u>68315</u>	Minimum design ambient temp.	(Deg. C)	<u>5.00</u>
Mass velocity	(kg/s-m2)	_____	Altitude	(m)	<u>12.500</u>
Air outlet temperature	(Deg. C)	<u>66.05</u>	Static pressure	(bar)	<u>2.05e-3</u>
Air flow rate/fan	(m3/hr)	<u>39549</u>			

Design, Material, and Construction

Design pressure	(barG)	<u>22.000</u>	Heating Coil	
Test pressure	(barG)	_____	No. of tubes	_____
Design temperature	(Deg. C)	<u>155.00</u>	Tube outside diameter	(mm) _____
Min. design metal temp.	(Deg. C)	_____	Tube material	_____
Tube bundle			Fin material and type	_____
Size (WxL)	(m)	<u>0.775 X 3.500</u>	Fin thickness	(mm) _____
No./Bay		<u>2</u>	ASME Code, Sec. VIII, Div. 1	_____
Number of tube rows		<u>6</u>	Heating fluid	_____
Bundles in parallel		<u>2</u>	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	<u>4</u>

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

Job No.		Item No.	AE-2101 A/B/C
Page	Page 2	By	
Date		Revision	D04
Proposal No.		Contract No.	
Inquiry No.		Order No.	

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	63
Length (m)	3.500
Pitch (mm)	69.850
Layout	Triangular

Fin

Type	Circular
Material	Aluminum 1100-annealed
Thickness (mm)	0.487
Selection temp. (C)	
Outside diameter (mm)	57.000
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)	1.189
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)	4.26

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)	1.676 x 3.500
Bundle weight (kg)	1616.9
Bay (kg)	

Total (kg)	5834.4
Shipping (kg)	

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