

TECHNICAL PROPOSAL (Package System)

1. PRICES

1.1/ Main Equipment

No.	Item	No. Exchanger	TEMA Type	Total Estimated Net Weight (Kg)	Ex-work Price unpacked (Euro)
1	Heat Exchanger	2	BKU	4,800	
Total		2	-	4,800	0 €

1.2/ Optional

No.	Item	Ex-work Price unpacked (Euro)
1	Spare Parts For Erection, Pre-Commissioning, Commissioning and Start-Up Gasket for Blinded Flange, Manhole, handhole & Body Flange:200%, Bolts & Nuts for Blinded Flange, Manhole: Handhole & Body Flange: 5% (min. 1 set)	
2	Spare Parts For Two Year Operation : Gasket for Blinded Flange, Manhole; Handhole & Body Fange: 200%, Bolt & Nuts for Blinded Flange, Manhole; Handhole & Body Flange:5 % (min. 1 set), Straight Tubes, to retube the largest bundle of each tube size and material: 5%.	

*VAT will be added to final price

Note: In case of more than 5% increase in amount of project items such as tubes, plates and forged part in comparison with announced values at the bid time, Damafin will claim the inflated cost for the unpaid part of the contract. The foresaid circumstances will be valid, up to 50% of contract amount payments implementation.

2. DELIVERY TIME

Drawings

Time required submitting our Outline Drawings (G.A.D) for approval is 8 weeks after firm purchase order and dawn payment



Equipment

The equipment will be ready in knock down conditions at Ex-Work within 10 months After receipt of your firm order and dawn payment according follow:

Total Project:	10
Engineering activities	<u>2</u>
Procurement	<u>6</u>
Fabrication	<u>4</u>
Test and Packing	<u>1</u>

3. **VALIDITY OF OUR OFFER**

45 days starting from quotation date.

4. **PAYMENT CONDITIONS**

Terms of Payment

- 20% upon acknowledgement of order,
- 10% upon approved technical key documents
- 20% after delivery signed PO of main row materials (tube, plate)
- 50% upon partial delivery of equipment, against prorated payment, Within 20 days

☒ All payment amount should be based on SANA sales cash rate if customer wants to pay in IRR otherwise to be paid in the account outside Iran introduced by Damafin.

5. **GUARANTEE**

We guarantee the material described in this offer against any defect in design, material or workmanship.

Our guarantee is given for a period of **12 months** after successful start-up of the equipment or **18 months after shipment**, whichever is sooner.

During the period covered by the guarantee, we undertake to make good any defect, which may appear, and to supply replacement parts ex-works, except for normal wearing parts (bolts, gasket, etc.), which are not covered by our guarantee.

We shall not be held responsible for any defect due to corrosion, erosion or unproper operation of the units nor for any inadequate performance due to fouling.

Mohsen Mollaei
Managing Director and Board Member

May 1, 2024

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Abbreviations:

- Yes / Confirmed
 No / Not Applicable

1. Scope of Supply

1.1. EQUIPMENT TO BE SUPPLIED (Material Specification):

	Items	Material
Channel Side	Cover	SA-516 GR.70
	Cylinder. (Thk.mm)	SA-516 GR.70 (10)
	Girth. Flange	SA-266 Gr.2
	Bolt / Nut	SA-193 / SA-194
Shell Side	Cover	SA-516 GR.70
	Cylinder. (Thk.mm)	SA-516 GR.70 (12)
	Girth. Flange	SA-266 Gr.2
	Bolt / Nut	SA-193 / SA 194
Bundle	Tube (OD. /Thk. /L) (mm)	SA-334 Gr.6(S) (19.05/1.651/ 2500)
	Tube Sheet	SA-266 Gr.2
	Baffle	SA-516 GR.70
Floating Head	Dish End	SA-516 Gr.70
	Flange	SA-266 Gr.2
	Backing Ring	-
	Bolt	SA-193
	Fluid (SHELL /TUBE)	Propane /Styrene
	Radiography (SHELL /TUBE)	As per Code
	PWHT (SHELL /TUBE)	As per Code
	Impact Test (SHELL /TUBE)	No/No
	Tube to Tube sheet Joint	Expanded with two grooves
Transportation	MDMT (0°C)	Un-known
	Weight (kg)	2400
	ID x Total L. (m x m)	0.6 x 3.8
	Prefab at shop Final Assembly at Site	-
	Test Ring	SA-105
	Expansion Joint	No
	Saddle	ST37

1.2. Reference

- Evaporator-four pass-Rev 3 (selected)

1.3. Main Parts

- Body Proper and Its Support
- Nozzles, Manhole & Hand hole
- Tube Bundle
- Name Plate

1.4. Internal Attachments

- Tubes
- Tube Sheets
- Seal Strip
- Internal Baffle Plate W/Support
- Tie Rod & Spacer
- Baffle

1.5. External Attachments

- Insulation Support (if required)
- Fire-Proofing Lugs
- Earth Terminal Lug
- Name Plate Support
- Lifting Lugs
- Stiffener Rings (if required)

1.6. Others

- Data for Setting Bolts & Nuts design
- Blind Flange & It's Bolt, Nut & Gasket for Blind Nozzle

2. Scope of Work

2.1. Design

- Thermal design by: Client
- Mechanical design by: Client
- Nozzle Local Stress Analysis: WRC197, 297
- Fabrication drawings for Body & Detail Drawings: AutoCAD

2.2. Fabrication

- Shop
- Post Weld Heat Treatment (If required)
- Stress Relief
- Bundle Assembly

2.3. Inspection and Test

The inspection & test shall be executed in accordance with the application codes, standards & Specifications as Specified in the requisition

- Material Certificates
- Raw Material inspection included impact test (when required)
- Material Identification
- Welder's & welding operator's performance qualification test (when required)
- Welding procedure qualification test (when required)
- Edge preparation inspection (include back chipping)

- PT and/or MT examination
- UT examination
- RT examination
- Hardness Test (when required)
- Visual and dimensional inspection
- Hydrostatic Test
- Leakage Test (when required)
- Pneumatic test on reinforcement pad
- Rust prevention & painting inspection
- Shipping preparation check
- PMI for alloy material

2.4. Rust-Proofing, Surface Preparation, Painting

- For inner surface:
 - Surface Preparation of Surface for SS & Non-Ferrous Parts:
 - Pickling
 - Rust prevention of inner surface:
 - N2 Gas Purge
- For outer surface:
 - Surface Preparation of Outer surface of CS parts:
 - SA 2 ½
 - Surface Preparation of Surface for SS & Non-Ferrous Parts:
 - Pickling
 - Rust Proof Painting (Only CS Parts):
 - To be painted as per the client's specification
 - Finish Painting (Only CS Parts):
 - To be painted as per the client's specification

2.5. Packing for shipping and Transportation

- Below item(s) is(are) in scope of work:
 - Opening:
 - Blanked and protected with steel cover and rubber gasket
 - Body:
 - Lose, supported by stand or saddle
 - Spare part:
 - Packed in case

3. Standards

3.1. Standards

- Design & Manufacturing Codes:
 - ASME Sec. V, Non-Destructive Examination (latest Edition)
 - ASME Sec. VIII, Div.1, Rules for Construction of Pressure vessels (Edition 2017)
 - ASME Sec. VIII, Div.2, Rules for Construction of Pressure vessels (Edition 2017)
 - ASME Sec. IX, Welding & Brazing Qualifications (latest Edition)
 - WRC 107/297 Local stress in spherical & cylindrical shells due to external loading (Edition 1979)
 - UBC 1997, Uniform Building Code
 - AWS, American Welding Society (latest Edition)
- Quality management system:
 - ISO 9001:2015
- Welding Process Standard:
 - ISO 3834-2:2005



- Material Code:
 - ASME Sec. II, Materials Part A/B/C/D
 - ASTM material standard
 - NACE standard (where applicable)
- Pipe & Fitting Code:
 - ASME B16.5, Pipe Flange & Flange Fittings
 - ASME B16.47 Series B, Large diameter Steel Flange (26 to 60)
 - ASME B31.3, Chemical Plant & Petroleum Refinery Piping (Process Piping)

4. Exclusion

4.1. Out of Scope

- Related Inspection (3rd party and local regulation with corresponding expenses)
- Instrument part under valve, gauge and level gauge
- Downloading at site
- Anchor bolts and nuts (Anchor bolts Design is in Vendor Scope of work)
- Instrumentation and piping
- Insulation material and installation
- Inlet / outlet manifold piping or load support
- Field painting

5. Attached documents

- | | |
|--------------------------------------------------|----------|
| 1. Stamped Evaporator-four pass-Rev 3 (selected) | 4 sheets |
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Behzad Sheikhbeigi
Chief Marketing Officer

May 1, 2024

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