Pressure Vessel Proposal

24-Sep.-2024

ARKAN SANAT PAYDAR

PROJECT NAME: RFQ for Receiver Header/ PR200

REF. No.:03-ASP-TC-2823-MY-REV00

CONTENT

1 above
DESCRIPTION

This quotation is for the purpose of bidding the material procurement, fabrication, test and inspection, and packing of equipment for 2 sets of vessels as per design data table in this proposal.

References and standards

- ASME, Sec. VIII (Boiler & pressure vessel Code)
- ASME, Sec. II (Material)
- ASME, Sec. V (Non Destructive examination)
- ASME, Sec. IX (Welding & brazing qualifications)
- ASTM Standard (Material)
- UBC Code 1997 edition for wind and seismic design
- WRC bulletin 107 and 297
- AWS (American welding society)
- ASME/ANSI standard, B16.5; B16.47; B16.9; B16.11; B16.20; B16.22; B1.1
- API 650 (Tank design requirement)
- AISI, Steel structures
- IEC, For Instrument & Electrical System

GENERAL INFORMATION

I. **Design**

II. **Fabrication**

III. **Tests and Inspection**

IV. **Steps Involved in Pressure Vessel Fabrication**

I. DESIGN

The pressure vessel should be designed to an approved code. The code will specify the requirements for design, manufacture, tests and inspection of the pressure vessel. The code therefore serves to ensure that the pressure vessel to be fabricated has been adequately designed to serve its purpose.

II. Fabrication

The pressure vessel should be fabricated in accordance with the design calculations and drawings, and the method of construction as stipulated by the approved code. Where welding is involved, the welding procedures and specifications described in the code for the pressure vessel should be followed strictly. It is also necessary to ensure that the welders tasked to carry out the welding of pressure vessel are competent to carry out the type of welding required by the design code.

III. Tests and Inspection

Tests and inspections form a very important part of the process of making sure that the pressure vessel fabricated can withstand the pressure and temperature to which it will be subjected. Where required, non-destructive tests such as dye penetrant tests and radiographic tests could be carried out on the welds to detect cracks and other defects. Pressure tests of the vessel should always be conducted using water (hydrostatic test) or an incompressible liquid (hydraulic test). It is not recommended that air or any other gas be used for pressure tests. This is because air/gases are highly compressible and could result in an explosion in the event of a rupture during the tests.

IV. Steps Involved in Pressure Vessel Fabrication

In order to assemble (fabricate) and trace the welded metal parts in place during the construction of pressure vessels some or all of the following steps may be required:

- Selection of raw material (commonly used material for fabrication are plate, pipe, forgings, structural shapes, welding rod or wire, etc.).
- Cutting and beveling of the raw material as per the specified requirements.
- Machining of certain parts if needed.
- Assembling and welding the parts of pressure vessel.
- Sand blasting it before applying primer and paint.

Fabrication Procedure

MATERIAL SELECTION

Basic materials for fabrication will be based on ASTM and ASME standard (ASME/ASTM material with certificate respect to EN 10204 3.1 (DIN 50049 3.1.B) will be used) as listed in below table and according to inquiry.

WELDING

Welding materials will be selected according to standard (ASME Sec. IX, and AWS). Welding will be done by qualified welders those who have welding certificate. All welding will be according to W.P.S and P.Q.R. The procedures will be sent to client for review and approval.

QUALITY CONTROL

Technical inspection of material and fabricated parts such as dimensional, tolerance, air and water tests, conformity of selected electrodes, quality of welding and etc. will be carried out

during fabrication. Thickness of plates will be checked against approved documents.100% Dye Penetrant Test will be done on fillet welds.

Inspection will be done as per ASME, ASTM, client's specification and shop inspection requirements.

Inspection and test shall be executed in accordance with the applicable codes and standard and project specification. The following test will be conducted by ASP Q.C. team (where applicable)

- Material certificate
- Raw material inspection included impact test when required
- Welder's & welding operator's performance qualification test (when required)
- Welding procedure qualification test (when required)
- Edge preparation inspection (included back chipping)
- Liquid penetrate examination and/or Magnetic particle examination
- Ultrasonic examination when required
- Hardness test (when required)
- Visual and dimensional inspection
- Hydrostatic test

SAND BLAST & PAINTING

All carbon steel parts will be sandblasted and painted according to client specification. And stainless steel will be pickling and passivation.

PACKING & SHIPPING

All equipment will be stiffened with suitable saddles loaded on truck at ASP EX-Work.

Design Specification for Pressure Vessel

Equipment will be designed / fabricated in compliance with the latest revision of the purchaser's specification and data sheets as below detail:

ITEM	DESCRIPTION		
1.	Tag No.	-	RECEIVER HEADER (RU0001A/B-D-02)
2.	No. of Required	-	2
3.	Position	-	Horizontal
4.	Design Code	-	ASME SEC. VIII DIV.1
5.	Operating Temperature	°C	56.2
6.	Operating Pressure	Barg	18.7
7.	Design Temperature	°C	120
8.	Design Pressure	Barg	22 / F.V.
9.	HydroTest pressure	Barg	28.6
10.	Shell (internal Diameter / Thk.)	mm	437 / 10
11.	Length of Vessel (T.L. TO T.L.)	mm	4000
12.	Corrosion Allow.	mm	3
13.	Joint Effi. (Shell / Head)	-	0.85 / 1
14.	Support Type	-	SADDLE
15.	Head Type/min. Thk	-	Elliptical / 8
16.	PWHT	-	NO
17.	Weight (App.)	Kg	600
18.	Material (Shell / Head/ Saddle/Pipe / Flange)	-	(SA-516 70N/SA-516 70N/ SA 283 Gr. C/SA-333 /SA-350 LF2)
19.	Wind Speed	Km/h	125
20.	Sismic code	-	USB 97
21.	Painting (internal / external)	-	NO / YES AS PER.

Scope of Work and Supply

All equipment will be supplied fabricated to client requirements. Limit of scope of supply will be as follows:

Included Items

- Material for shell, heads, Pipes, flanges and nozzles
- Removable Internals (as specified in datasheet)
- Internals support
- Materials for Supports and saddle
- Equipment with all welded Internals/external parts
- Gaskets, pressure and non-pressure bolts and nuts for covers and blind flanges
- All required electrode
- Sand blast and paintings
- Inspection / Testing as per approved ITP
- Supervision at site (optional price)
- Quality Dossier and Final Document
- Document as per "Required for Documentation" form.
- Detail Design (data sheet, shop drawing, . .)
- Nameplate and earth lug
- Lifting and shipment devices

Exclusion Items

- Process performance guarantee for vessel
- Foundation activity
- Anchor bolt & nut
- Piping out of battery limited
- NDT test at site
- Third party charge

Delivery

- Delivery point as Ex-work (option price for transportation to site).
- Total items are anticipated to be delivered Ex-work in 1 months from advance payment and approval DWG.

Guarantee

- Guarantee period will be based on normal operation for 12 months.
- Guarantee does not include damage or malfunction resulting from careless use.

Price (24-Sep.-2024)

No.	Tag No.	Description	Qty. (Set)	Unit Price (EURO)	Total price (EURO)
1	(RU0001A/B-D-02)	RECEIVER HEADER	2	3,008	6,016
				Price (Ex-Work):	6,016

Remarks:

1- VAT not included in the price and will be added to invoice according to the rate at time of invoicing.

2- This quotation is based on selling contract. Therefore, insurance has not been included in this offer.

3- - 60% Advanced payment / 20% after approval 70% of progress to the final stage / 20% after final approval inspection before delivery and shipping

4- قیمت براساس یورو نرخ آزاد

REFERENCE LIST

The projects that Arkan Sanat Paydar Company has completed or is implementing are as follows:

- **supply of two NO 10” control valve - employer Qeshm Movaled company.**

- **supply of A105 flanges- employer Qeshm Movaled company.**

- **supply of pipes and fittings from China – Employer Sazeh consultants Company.**

- **Supplying a part of piping items and Construction of Lordegan Petrochemical - Employer Lordegan Petrochemical.**

- **supply of plate for refractory support– Employer Sazeh consultants Company.**

- **Design and manufacture of 8 Sample Coolers- Employer Sazeh consultants Company.**

- **Supply of piping and clamping items for Kermanshah Petrochemical - Employer Shahrekord Gas Company.**

- **Supplying a part of piping items to Kavian Petrochemical, Bakhtar Petrochemical, Damavand Petrochemical, Rijal Petrochemical.**

- **Supplying Piping Items for Bidboland Gas Refinery - Employer Consortium of Structural Consulting Engineers – Jahanpars.**

- **Design and construction of Transition duct- Employer Sazeh consultants Company.**

- **Design and construction of Fixed roof storage tank – Employer Sazeh consultants Company.**

- **Design and construction of Cladding - Employer Sazeh consultants Company.**

- **Design and construction of Anti friction - Employer Sazeh consultants Company.**

• Design and Construction of pump boxes for chehel koore zahedan copper project- Employer NIPEC Company.

• Construction of clamps and pipe support for Bidboland gas refinery- Employer Consortium of Sazeh consultants -Gahanpars.

• Construction of ducts and ancillary equipment and part of Lordegan petrochemical tanks- Employer of Lordegan Petrochemical.

• Construction of steel structure for Mianeh cementite project- Employer mohandesi fanavaran maaden va felezat company.

• Construction of sample coolers for South Pars Phase 12 project- Sazeh consultants Company.

•Construction of sample coolers for Shazand Arak refinery- Employer Sazeh consultants - ODCC-SEI.

• Construction of sulfuric acid tanks of Shazand refinery in Arak- Employer Sazeh consultants Company- ODCC-SEI.

• Design and construction of storage tanks for the tank farm unit of Pars Oil Refinery- Employer Pars Oil Company.

• Design and construction of mixers and reactors with different capacities.

• Design and construction of heat exchangers in different capacities.

• Design and construction of storage and pressure vessels (single-walled, double-walled and triple-walled) in different capacities.

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- Design and construction of three-wall homogenizer of 50 Lit. Up to 1500 Lit. .

- Design and construction of various metal structures (carbon steel and stainless steel).

- Design and manufacture of sample cooler phase 12 South Pars.

- Design and construction of sample cooler for Shazand Arak refinery .

- Design and construction of NGL3200 project sample cooler.

- Design and construction of solar mixers related to industry ya Mehdi (Lavizan).

- Design and construction of solar mixer related to Ansar Al-Mahdi Industries (Qazvin).

- Design and manufacture of solar mixers related to Malek Ashtar University.

- Design and manufacture of solar mixers of size 25 Lit. Up to 1200 Lit. In Jahad Engineering Research Institute.

- Design and construction of Kneader in Jahad Engineering Research Institute.

- Design and construction of 1000kg smelting furnace for mahar koore company.

- Design and construction of crystallizers for mashin daroo company.

- Design and construction of five triple wall mixers, Construction of storage tank for the pharmaceutical industry for Exir Pharmaceutical Company.

- Design and construction of five triple wall homogenizers with 300 kg capacity for Mahram Company

• Design and construction of a stainless steel storage tank with 18 tons capacity for khamir maye Razavi Company.

• Design of 47 storage tanks(Stainless steel and carbon steel) of Shahid Rasouli Petrochemical Project for oxin sanat company.

• Design and construction of 10 storage tanks (310m3 and 410 m3) of carbon steel for Pakshoo Company.

• Design, construction and installation of the following equipment for Nestlé Switzerland:

1- Design, construction and installation of 16 stainless steel platforms

2- Installation of all DRY MIX equipment

3- Design and manufacture of pressure vessels and stainless steel process.

• Design and construction of 7 tanks with capacities of 550 m3 and 220 m3 made of carbon steel for Pakshoo Company.

• Design and construction of 4 tanks with a capacity of 240 m3made of stainless steel for Pakshoo Company.

• Piping operation of stainless steel tanks of Pakshoo company.

• Design and construction of stainless steel quarantine tank for Emad Darman Pars Pharmaceutical Company.

• Design of a double-walled stainless steel tank for Emad Darman Pars Pharmaceutical Company.

• Design and construction of liquid glue production line for Iran Chasb Company.

• Design and construction of an operator unit with a total capacity of 2000 Lit./hr for Neshat Daroo Company.

• Design and construction of a double-walled mixer with a capacity of 600 Lit. , Painted structure and hot oil heater for car paint processing company.

• Design and construction of a PVC mixer made of stainless steel with a capacity of 6 m3 for Henkel company.

• Design, installation and setting up of Henkel PVC tank hydraulic system.

• Design and construction of two 30 Lit storage tank devices. For the Faculty of Agriculture, University of Tehran.

• Design and construction of 7 homogenizer tanks made of stainless steel with capacities of 250, 500, 1000 and 2000 liters for tabiat zendeh Laboratories Company.

• Design and construction of a stainless steel Recovery Tank for Nestlé.

• Design and construction of a Kneader with a capacity of 1200 Lit for Henkel.

• Design and construction of a laboratory Kneader with a capacity of 10 Lit for Henkel.

• Design and construction of 2 triple wall mixers made of stainless steel with a capacity of 200 Lit for Jaberebn Hayan Pharmaceutical Company.

• Design and construction of heat exchangers for Henkel Pak Wash Company.

• Design and construction of two mixers made of stainless steel with a capacity of 6 tons for Henkel.

• Design and construction of two mixers with a capacity of about 6000 Lit. For Pakshoo Company.

• Design and construction of storage tank with a capacity of 30,000 Lit. For Pakshoo Company.

• Design and construction of 32 material storage tanks for Henkel Company.

• Design and construction of 2 material storage tanks with a capacity of 70m3 for Iran chasb Company.

• Design and construction of 6 ton mixer homogenizer for Daqiq Shimi Company.

• Construction of 16 material transport tanks for Daqiq Shimi Company.

• Design and construction of 2 kneaders for sanaye defa.

• Design and construction of 100 liter solar mixer for high viscosity materials.

• Construction of water intake and orifice from Super Duplex for Mobin Petrochemical.

• Construction of water intake and orifice for Mehr Petrochemical.

• Design and Construction of PUC mixer for Samed Chemical Company.

• Design and Construction of 10 ton mixer for Toli Pers Company.

• Design and construction of 36 bar pressure storage tank for Jaberebn Hayan Company.

• Design and construction of two reactors for making 10 ton glue for Iran Chasb Company.

• Design and construction of base powder line with a capacity of 5 tons per hour for Paksho Company.

• Design and construction of 100 liter Spray mixer for Sina Daroo Company.

• **Design and construction of 28 stainless steel tanks and ducts for Pishgaman Paper Industry Company weighing about 100 tons.**

• **Design and construction of two tanks with a capacity of 60,000 liters for Iran Chasb Company.**

• **Construction of two burial tanks with a capacity of 350,000 liters for Shahid Mofteh Powerhouse in Hamadan.**

• **Design and construction of two glue production lines with a capacity of 9 tons for Iran Chasb Company.**

• **Design and construction of 32 tanks and mixers for the production line of detergent liquids of Pakshoo Company.**

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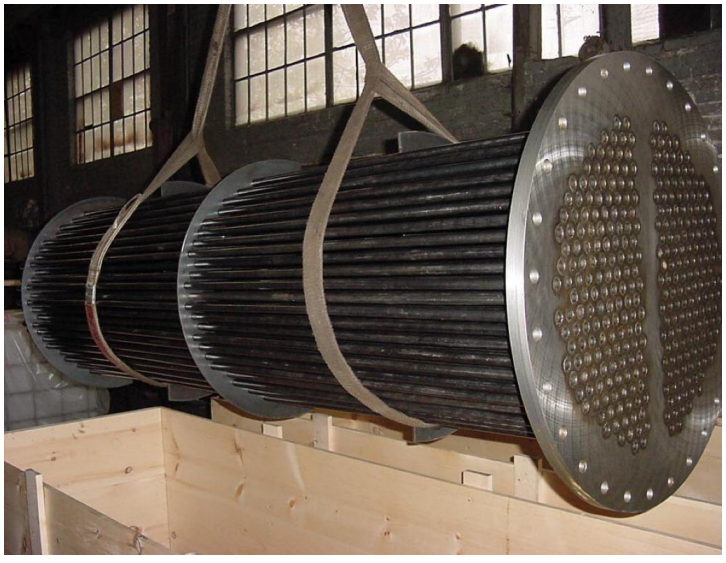

ARKAN SANAT PAYDAR
Procurement & Construction

Arkan Sanat Paydar Company has been able to have continuous and significant activity in the field of supply of commodity, construction, technical and engineering services for oil, gas, petrochemical and mining projects by using the specialized staffs and facilities of the head office in Tehran and Italy.

In addition to material supply facilities, the factory for manufacturing equipment and pressure vessels of this company, with an area of 2500 square meters, is located in Alborz Qazvin industrial city (and the company's warehouse with an area of 1200 square meters is located in Shurabad area of Tehran).

Saturday to Wednesday - 08:00 to 17:00 Info@arkansp.com 021- 88210078

ARKAN SANAT PAYDAR No. 7, Unit 6, Salman Dead End, North Sheikh Baha'i St., Tehran