



# FATEH SANAT

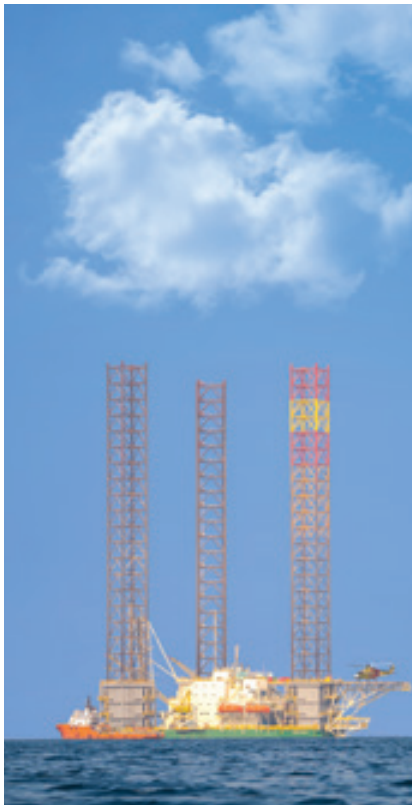
EPC Contractor & Offshore Maintenance Services for  
Oil, Gas, Petrochemical & Power Plants Industries





# CONTENTS

- 02 Fateh Group Description
- 04 Fateh Sanat Description
- 06 Factories
- 08 Departments & Staff Information
- 10 Engineering Capability
- 12 Fabrication Capability
- 14 Quality Control
- 16 Main Products
- 18 Furnace & Reformer
- 24 Shell & Tube Heat Exchanger
- 30 Reactor, Tower & Column
- 35 Flare
- 36 Aircooled Heat Exchanger



## OFFSHORE



FSK MAINTENANCE



OFFSHORE PETRO PROCESS



## DESIGN & MANUFACTURING



FATEH SANAT



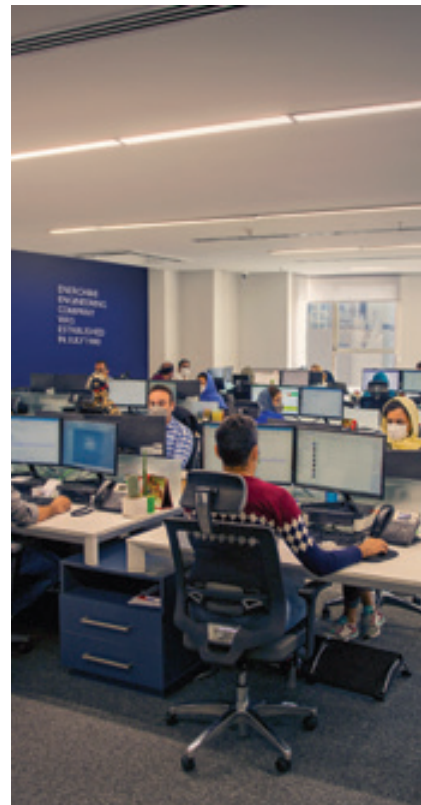
KIMIAGARAN SANAT PARS



FATEH BOILER



PARTOGARAN KIMIA SANAT



## ENGINEERING, PROCUREMENT CONSTRUCTION



ENERCHIMI COMPANY



PETRO FANAVARAN FATEH



FATEH ENERGY KIMIA





## MINING



FATEH MINING COMPANY



POUYA MADAN COMPANY



## PETROCHEMICAL PROCESS



PTF PARS TOSE E FATEH



NITEL PARS



FATEH KIMIA PETROCHEMICAL



TAKHTE JAMSHID PETROCHEMICAL



TAKHTE JAMSHID PARS PETROCHEMICAL



TECHWIN FANAVARAN FATEH



## AVIATION SERVICES



**PASCO**

PASCO AVIATION SERVICES








## PREFACE ABOUT **FATEH SANAT**

Since our beginnings in 1984 we have built a reputation in the industry for dedicated, professional and efficient service. Our mission is to assist our clients to build plants through the supply of world-class and high quality products and services. Fateh Sanat Kimia (FSK) is a professionally managed engineering and fabrication organization having a great experience in the field of design and fabrication of Process Equipment.

An aerial photograph of an industrial complex, likely a refinery or petrochemical plant. The image shows several large, cylindrical storage tanks in the foreground, some with numbers like 15, 16, 21, and 22. There are also large industrial buildings with corrugated metal roofs. The facility is surrounded by a fence and some palm trees in the lower left corner. The background shows a hazy landscape with more industrial structures.

Our products are mostly used in Oil and Gas, Refinery, Petrochemicals, Power and other allied industries. We have achieved a reputation in the industry for timely execution and supply of broad range and selection of heat transfer equipment following stringent quality standards.

Our objective is to provide the most advanced and qualified technology products and services with cost effective, reduced operating and also maintenance costs that will exactly meet our customer's expectations. Even with our position and reputation in the marketplace, we have embarked on a program of continuous improvement to push us to improve all aspects of our business.





## Factories Description:

Total: -----150,000 M<sup>2</sup>

Workshops:----- 36,000 M<sup>2</sup>

Capacity:-----30,000 Ton/Year





- Fired Heater, Reformer, Crack Furnace
- Pressure Vessel, Tower Factory
- Machinery Shop
- Ware House
- Shell & Tube Heat Exchanger Factory
- Heavy Duty Equipment
- Air Cooled Heat Exchanger Factory





# Departments & Staff Information



- **Design & Engineering**
- **Quality control / Quality Assurance**
- **Production**
- **Procurement (Local & Foreign)**
- **Sales Engineering**
- **Project Management**
- **Planning & Project Control**
- **Financial & Administration**
- **HSE**
- **Training**
- **Public Relations**
- **Warehouses**
- **Security guard**
- **R&D**







## ENGINEERING CAPABILITY

Our engineering team consists of process, civil and mechanical engineers work together with thermal and mechanical design capabilities in order to provide efficient solutions for unique heat transfer problems.

This process is geared to both the customer and production with emphasis on presenting the customer a complete design with all supporting data, and in full compliance with all customer requirements and codes.

We utilize the most advanced thermal rating programs and years of experience to design the best heat exchanger for customer's needs. Our design staff is skilled with thermal design principles, so design variables are simulated to obtain the equipment with optimized heat transfer surface and allowable pressure drop.

All equipment are mechanically designed by our competent Design Engineers using latest special softwares as per international codes like ASME, ISO, TEMA, or any other code as per customer requirement.

Latest version softwares and also in-house developed programs enable our qualified engineers to perform complex design calculations based on international codes and standards.

Experienced draftsmen generate detailed drawings suitable for fabrication according to designed datasheets and customer's specifications.



All equipment are mechanically designed by our competent Design Engineers using latest special softwares as per international codes like ASME,ISO, TEMA, or any other code as per customer requirement.

With the experience of our engineers, the company has the capabilities to design equipment for internal and external pressure and temperature, vacuum service, seismic, wind and piping loads, as well as vertical and horizontal design.

Latest version softwares and also in-house developed programs enable our qualified engineers to perform complex design calculations based on international codes and standards.

All of procedures are under supervision of senior engineers to achieve reliable and valuable results. With the experience of our engineers, the company has the capabilities to design equipment for internal and external pressure and temperature, vacuum service, seismic, wind and piping loads, as well as vertical and horizontal design.

All calculation is code based but and also Finite element analysis can be performed when required.



A large industrial pipe under construction, viewed from the inside. The pipe is made of dark metal with visible welds and structural ribs. Several workers are visible inside the pipe, working on the interior surface. The lighting is dramatic, with bright spots from work lights and a darker, shadowed background. The overall scene conveys a sense of scale and industrial capability.

# FABRICATION CAPABILITY

At Fateh Sanat we integrate skills, technology, imagination and innovation to meet our customers' needs and to reach a new level of value.

At our machining and fabrication facility, we utilize the latest and modern fabrication technologies to make all products according to standards. We use computer controlled heavy-duty roll forming machine and CNC cutting machines to insure precise adherence to dimensions and close tolerances.

Drilling equipment is numerically controlled to insure the accuracy required for baffles and tube sheets unique to heat exchangers. This capability includes CNC machining centers, heavy duty and commercial radial drilling machines that have the ability to accurately drill tube sheets. Modern welding equipment including multiple submerged arc equipment, allows efficient and smooth welding of shell segments.

Welding capabilities, including GTAW, GMAW, SAW, SMAW and FCAW with a variety of wire and fluxes, can be utilized to meet the most sophisticated of welding procedures. Qualified ASME Welders and an extensive radiographic capability support all types of ASME Section VIII construction, including lethal service requirements.

Heat treating facilities are also readily available. Tube to Tube-sheet joint utilizes automatic orbital welding machines and advanced technology expander machines that make the leak-tight joint as the procedure requires.



A full-page background image showing a man in a dark blue work jacket and pants operating a large, light-colored industrial machine. The machine has a control panel with a screen and buttons. The setting is a workshop with a brick wall in the background. The text 'FABRICATION WORKSHOPS' is overlaid in large white letters on the left side of the image.

# FABRICATION WORKSHOPS

Our production workshops area has been managed and located in an optimum configuration, in which ease of fabrication and also good sequence of production is very important. These areas are mainly divided to prefabrication, machining workshops, assembling and welding workshops and delivery division.

Prefabrication section consists of protected storage yard for material, cutting machines, beveling and roll bending facilities. Machining workshops is equipped by CNC and manual controlled machining facilities, which is located right after prefabrication workshops.

All machined parts and also prefabricated segments are assembled and finally welded together in a special place in line of previous area.

Testing, painting, packing and loading activities are followed in final section named delivery division.



A close-up, profile view of a man with dark hair and a beard, wearing a light-colored button-down shirt. He is looking intently at a large, dark, curved metal object in the background. Another person is visible in the background, working on the same object. The scene is set in a workshop or factory.

# QUALITY CONTROL



Quality at FSK is a fundamental business strategy and we remain committed to providing our customers with consistent high-quality products and services that are defect free. FSK's reputation for quality is founded on its strong engineering base and strict conformance to recognized international standards of design and manufacture.

Before a nameplate is placed on any equipment, it has been carefully inspected throughout the production process by our highly trained quality control staff. Each equipment is fully supported by ASME data reports and material mill test certificates that attest we are producing a thoroughly engineered high-quality product.

Experienced staffs have certifications of welding inspection and Non-Destructive Tests (NDT) to control products and manufactured equipments. Quality Control department inspects the received material and production process as measuring, cutting, drilling, machining, fit up, welding, dimensional control and finally non-destructive tests, hydro test, sandblasting and painting, post weld heat treatment and so on. Inspection stations are according to quality control plan and based on ASME, TEMA, AWS, ASTM standards and also client specifications.

It means that quality control process begins the day of any order, and continues until equipment is assembled.





# Main Products

FSK has a considerable experience in design and manufacturing of heat transfer equipment, such as Heat Exchangers, Condensers, Air Coolers, Pressure Vessels, Towers, Reactors manufactured from graded materials.





Each product of the company is designed using sophisticated technology and manufactured as per latest International codes and standards. Our engineers ensure product integrity and guideline conformance, and our products can be fabricated in a range of designs, materials and styles. In addition, each product undergoes extensive testing to ensure performance and efficiency. FSK's state-of-the-art facility operates under strict API, ISO and HSE guidelines, so our quality control processes ensure that each product operates efficiently, safely and durably.





# Furnace & Reformer









## Crack Furnace and Steam Reformer Fabrication Reference List

### H01

End user:  
*Kavian Petrochemical Co.*  
Equipment:  
*Convection coil*

QTY.:  
*108 Coil*  
Total weight (Kg):  
*2,700,000*



### H02

End user:  
*Gachsaran Petrochemical Co.*  
Equipment:  
*Convection coil*

QTY.:  
*54 Coil*  
Total weight (Kg):  
*1,350,000*





### H03

End user:  
*Marjan Petrochemical Co.*  
Equipment:  
*Reformer*

QTY.:  
*8 set convection modules  
+ flue gas duct + stack*  
Total weight (Kg):  
*1,300,000*



### H13

End user:  
*Kangan Petrochemical Company*  
Equipment :  
*Convection Bundle for  
vCrack Furnace*

QTY.:  
*54 sets convection modules*  
Total weight (Kg):  
*962,000*







## Furnace & Reformer

**H 14**

OWNER:

**BOUALI SINA PETROCHEMICAL**

EQUIPMENT:

**FIRE HEATER**

Qty:

**2 SETS**

SCOPE

**ENGINEERING, PROCUREMENT, CONSTRUCTION**



## H14

**BOUALI SINA PETROCHEMICAL  
EQUIPMENT  
FIRED HEATER  
Qty  
2 SETS**

Scope of work:  
**ENGINEERING, PROCUREMENT,  
CONSTRUCTION**



## Crack Furnace

**KIAN Petrochemical Co.**  
Scope of work:  
**EPC Project**  
4 Sets : **LPG Unit**  
4 Sets : **Naphtha Unit**







## Shell & Tube Heat Exchanger Reference List



A welder wearing a red protective suit and mask is working on a large, circular industrial heat exchanger. The heat exchanger has a dense grid of small holes. The welder is using a welding torch, and there is a large, curved metal pipe in the background. The scene is set in a large industrial facility with a high ceiling and structural beams.

# Heat exchangers

can be designed and manufactured in all TEMA configurations, from single pass to multi-pass, “U” tube configurations and with or without removable bundles.

Designs meet all the requirements of shell and Tube Heat Exchangers as well as specialty units for thermal expansion, pressure drop, nozzle, and piping loads, tube vibration, and lethal service applications.

Design and fabrication according to:

- :: ASME Code, Section VIII, Division 1 and 2
- :: TEMA Class B, C and R standards
- :: API 660



Client :  
**KPC**  
 Owner :  
**Kavian Petrochemical**  
 Project No : **E61**  
 Design Pressure: **21 bar**  
 Design temperature : **105**  
 Material : **SB338Gr.2**  
 Total weight : **100 tons**  
 Year of construction : **2007**



Client : **PIDEC**  
 Owner : **SHIRAZ PC**  
 Project No : **E89**  
 Design Pressure : **20 bar**  
 Design temperature : **200**  
 Material : **SS316L**  
 Total weight : **207 tons**  
 Year of construction : **2008**



Client : **PIDEC**  
 Owner : **Morvarid MEG plant**  
 Project No : **E63**  
 Design Pressure : **32 bar**  
 Design temperature : **120**  
 Material : **SS 304 L+NACE**  
 Total weight : **795 tons**  
 Year of construction : **2007**



Client : **PKSK Sepanir**  
 Owner : **POGC 15/16-20/21/22~24**  
 Project No : **E96/97-116/117-118/119**  
 Design Pressure : **82~150 bar**  
 Design temperature : **270**  
 Material : **SS 321 CLD 321 +NACE +SSC**  
 Total weight: **4600 tons**  
 Year of construction: **2009 / 2012**





Client : **CHAGALESH**  
 Owner : **SARAJEH Gas injection**  
 Project No : **E100**  
 Design Pressure : **250 bar**  
 Design temperature : **150**  
 Material : **SA 210 Gr.1**  
 Total weight: **100 tons**  
 Year of construction : **2009**



Client: **IOIC Consortium**  
 Owner: **Phases 17 & 18**  
 Project No : **E114**  
 Design Pressure: **72 bar**  
 Design temperature: **330**  
 Material: **SS 316L +NACE+SCC+SSC**  
 Total weight : **399 tons**  
 Year of construction: **2010**



Client: **Jahan pars**  
 Owner: **Odorant**  
 Project No: **E162**  
 Design Pressure: **13 bar**  
 Design temperature: **235**  
 Material: **C.S - LTCS**  
 Total weight : **11 tons**  
 Year of construction: **2013**



Client: **IRITEC**  
 Owner: **KHARG NGL Recovery**  
 Project No: **E149**  
 Design Pressure : **14 bar**  
 Design temperature : **180**  
 Material : **SB338Gr.2**  
 Total weight : **88 tons**  
 Year of construction : **2012**





# Waste Heat Boiler

OWNER : *Shiraz Petrochemical*  
PROJECT No.:331  
EQUIPMENT : *Waste Heat Boiler*  
Qty : *2 SETS*  
Shell/ Tube Material: *SA-387 Gr.11 CL.2/  
SA-213 T22 + INCONEL 601 FERRUEL*  
Year of construction: *2020*





# Waste Heat Boiler

Equipment type:

**Waste Heat Boiler**

Property : *High temperature service equipment*





## REACTOR, TOWER & COLUMN REFERENCE LIST

T04

End user: **5000 MTPD Siraf Methanol Plant**

Dimension: **Length: 70 / OD: 7 m**

Location: **Siraf Petrochemical Co.**

Scope of work: **Design and fabrication**

Material : **SA 516 Gr.70N**

Total weight (Kg): **400,000**

Year of construction: **2020**



T04

End user:

**5000 MTPD Siraf Methanol Plant**

Dimension:

**Length: 60 / OD: 8 m**

Location: **Siraf Petrochemical Co.**

Scope of work:

**Design and fabrication**

Material : **SA-516 Gr.70N**

Total weight (Kg): **415,000**

Year of construction: **2021**





## Shell & Tube Heat Exchanger Reference List

**T12**

End user: **GACHSARAN OLEFIN PLANT**  
Dimension: **Length: 67 / OD: 5.7 m**  
Location: **GACHSARAN Petrochemical Co.**  
Scope of work: **Design and fabrication**  
Material: **SA-516 Gr.70N**  
Total weight (Kg): **520,000**  
Year of construction: **2021**



**T06**

End user: **Kangan C2 Recovery**  
Equipment type: **Tower**  
Location: **Kangan**  
Scope of work: **Design and fabrication**  
Material : **SA-240 Gr.304**  
Total weight (Kg): **753,000**  
Year of construction: **2012**





## T19

End user:

***BouAli sina Petrochemical Co.***

Dimension:

Length: **120 / OD: 8 m**

Location: ***Mahshahr***

Scope of work:

***Design and fabrication***

Material :

***SA-516 GR.70N***

Total weight (Kg): **1,160,000**

Year of construction: **2021**





# Reactor

## Esfahan Refinery Upgrading Project

Equipment type : *Process Reactor*

Property : *High temperature/High Pressure*

Highlight : *250 mm Cold Rolling*

*High temperature*

*High tension*

*Internal surface refractory coated*

Type:

*Vertical / Horizontal*

Active project: RA 07





# Reactor

## RA 03

Equipment type : *2nd Claus Reactor*

Property : *High temperature*

Highlight : *Heating Coils*

*High temperature*

*Internal surface refractory coated*

Type:

*Horizontal*

Active project: *RA 03*





## Flare

### FL-02 Olefin Main Flare

Kavian Petrochemical





## AIR COOLED HEAT EXCHANGER REFERENCE LIST

**FSK air cooled heat exchangers** are suitable for using in petroleum refinery, oil and gas production and process industries as Process Coolers, Compressor Inter / After Cooler, Steam Condensers.

**This equipment is designed and manufactured in multiple configurations including a forced draft or induced draft.**

Our air coolers are included features on demand:

- **Manual/auto variable louvers for controlling outlet temperature**
- **Auto variable pitch fan for temperature control and effective power consumption**
- **Steam coil to avoid freezing**
- **Variable speed drive system for**

**Temperature control**

**1- Forced Draft ACHE**

**2- Induced Draft ACHE**

Mechanical designs can conform to international standards and codes including:

- **ASME Section VIII, Division 1 and 2 /API 661/ISO 13706**
- TEMA, when applicable**







## AIR COOLED HEAT EXCHANGER











**Factory : St. 101, Sanat Sq. , Shiraz Industrial Zone, Shiraz**  
**Tel/fax : +98 71 91 00 1370**

**Office : No.32 , Veskanian St., Khoddami St., Tehran**  
**Tel/fax : +98 71 91 00 1370**

[www.fatehsanat.com](http://www.fatehsanat.com)