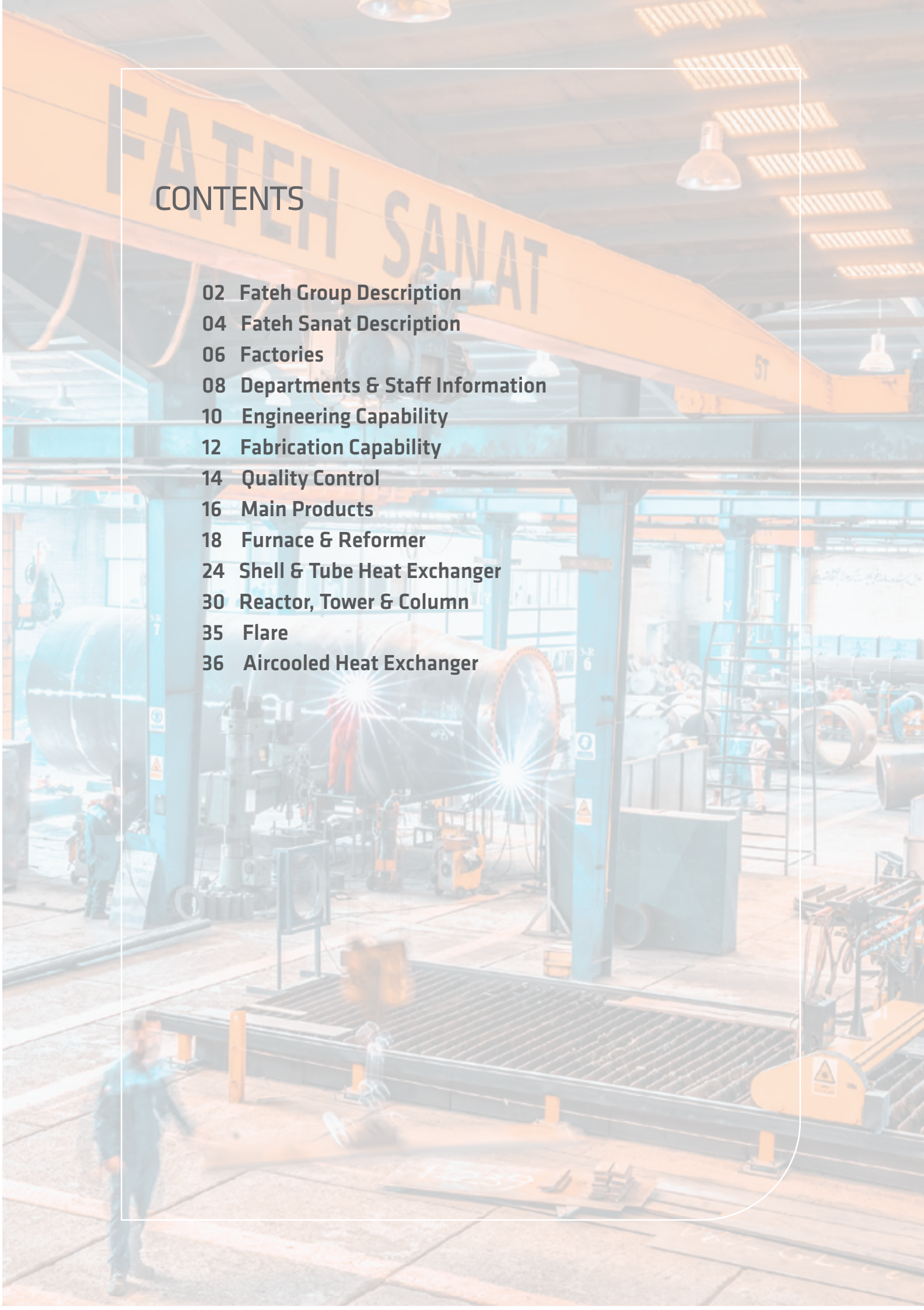
FATEH GROUP

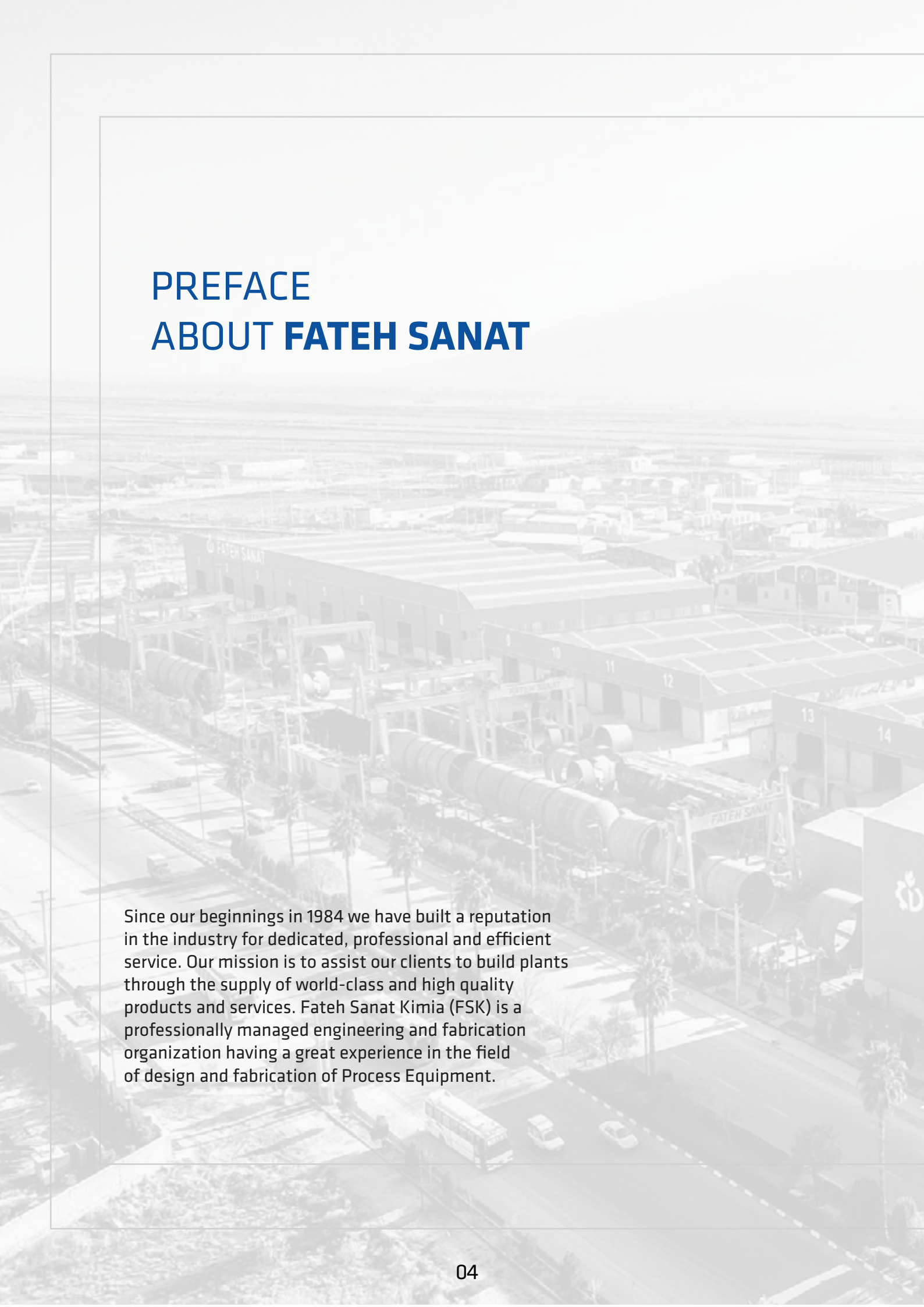
FATEH SANAT

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



CONTENTS

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.

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.

FATEH SANAT

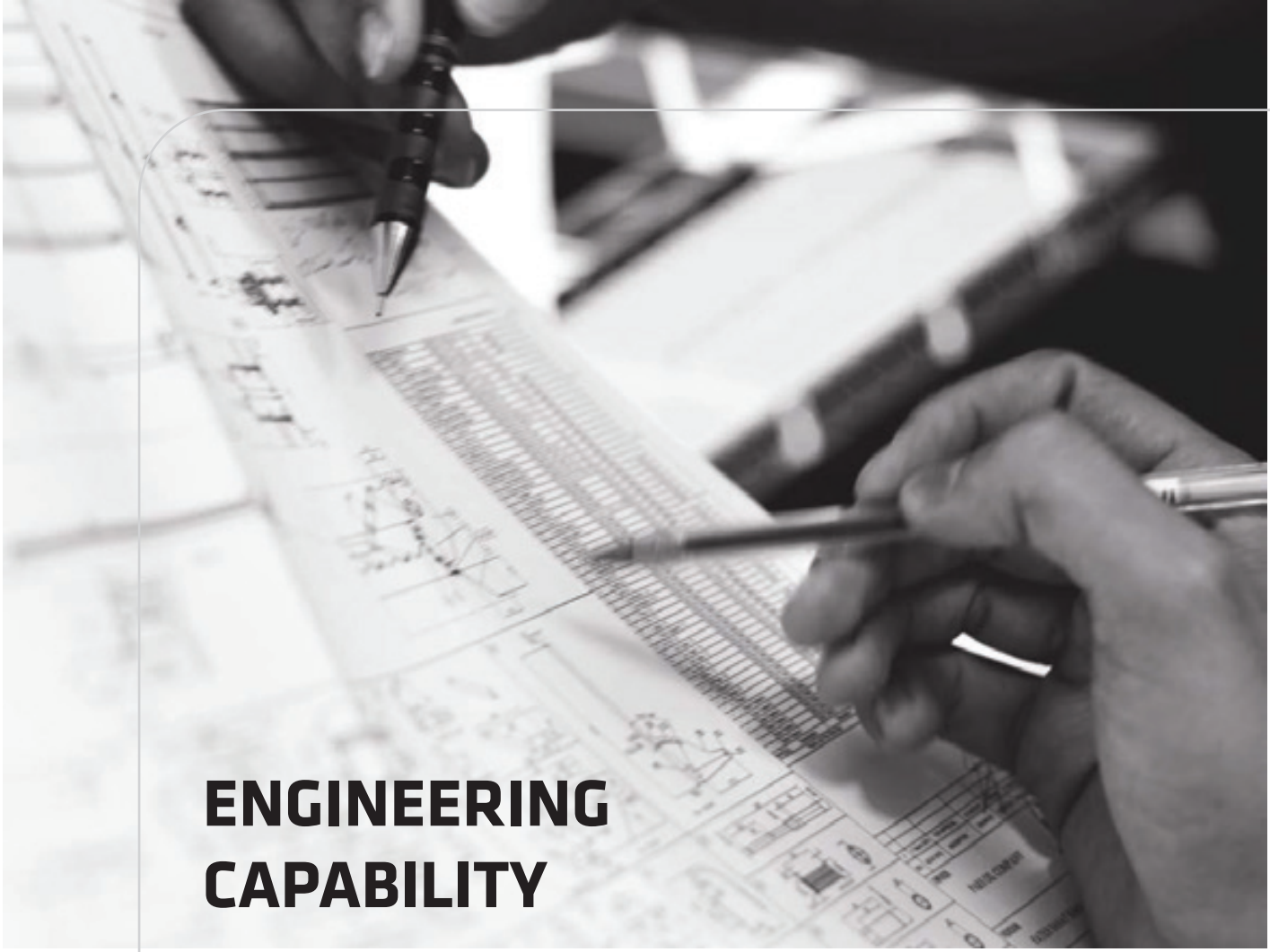
Factories Description:

Total: ----------150,000 M^2
Workshops:---------- 36,000 M^2
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.

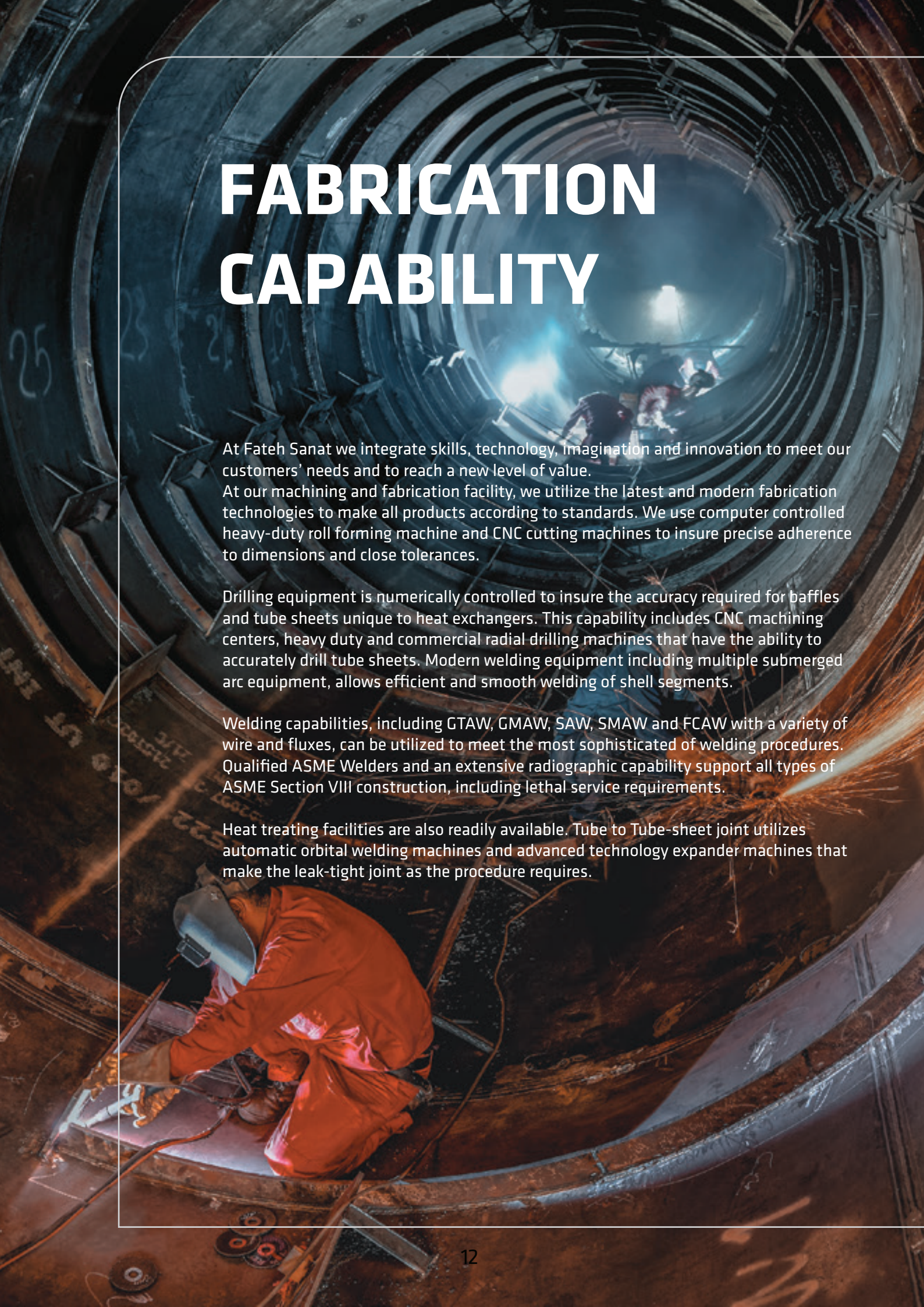
All equipment are mechanically designed by our competent Design Engineers using latest special softwares as per international codes like ASME,ISO, TEMA, or any other code as per customer requirement.

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.



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.

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.

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:
FIRED 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

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 meets 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
Esfehan 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

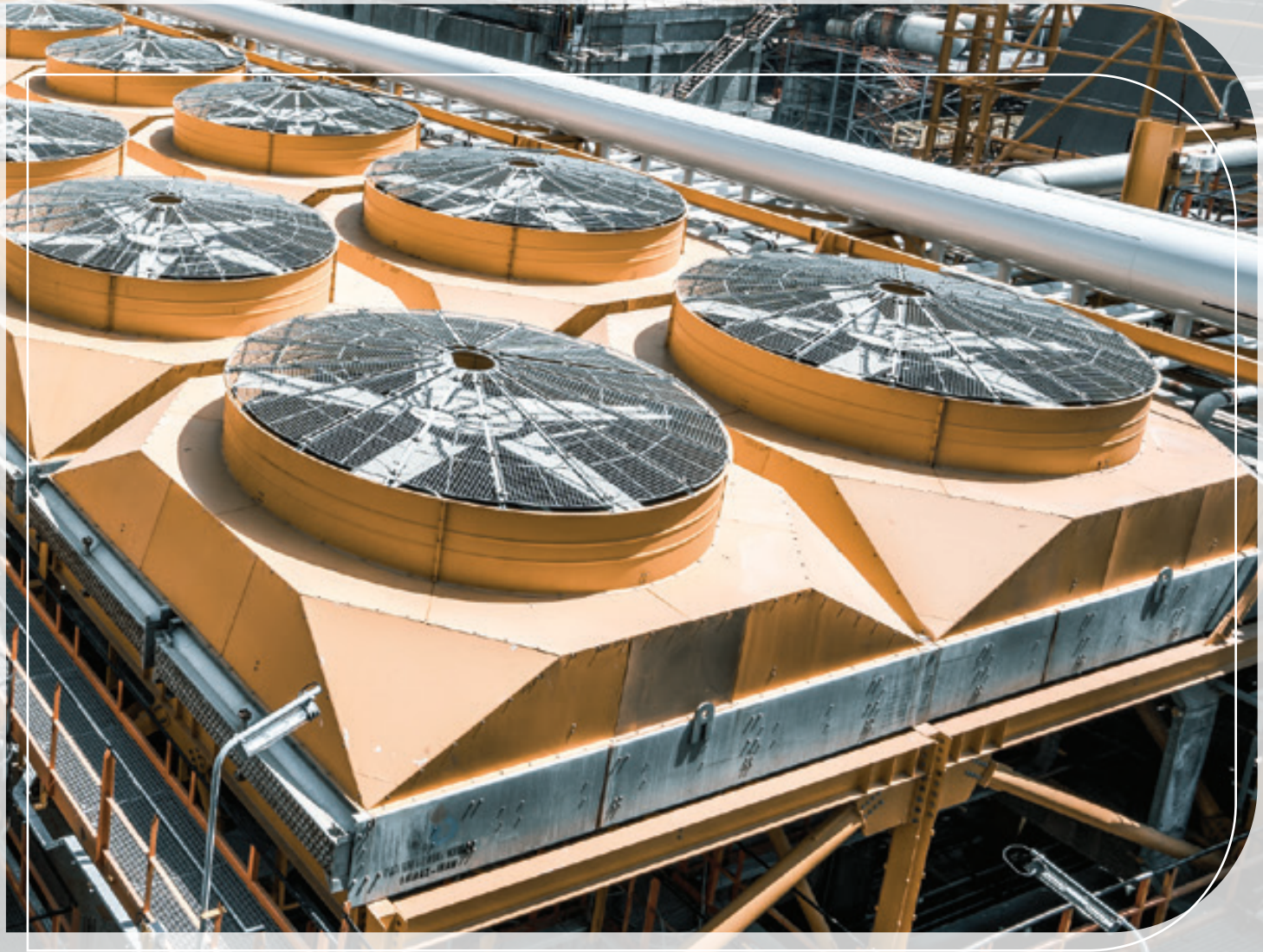
AIR COOLED HEAT EXCHANGER REFERENCE LIST

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


E-5121



AIR COOLED HEAT EXCHANGER

FATEH SANAT

Innovation is our Art

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