

SEOEUN PLANT TECH

Total engineering company capable of design, certification and consulting.
Petroleum·Precision Chemistry, Bio, Food, New Materials,
Energy Environment, High-Performance Equipment
(Pressure Vessel, Heat Exchanger, Tower, Storage Tank),
PILOT PLANT, TEST BED, National Policy R&D Research Project, etc.



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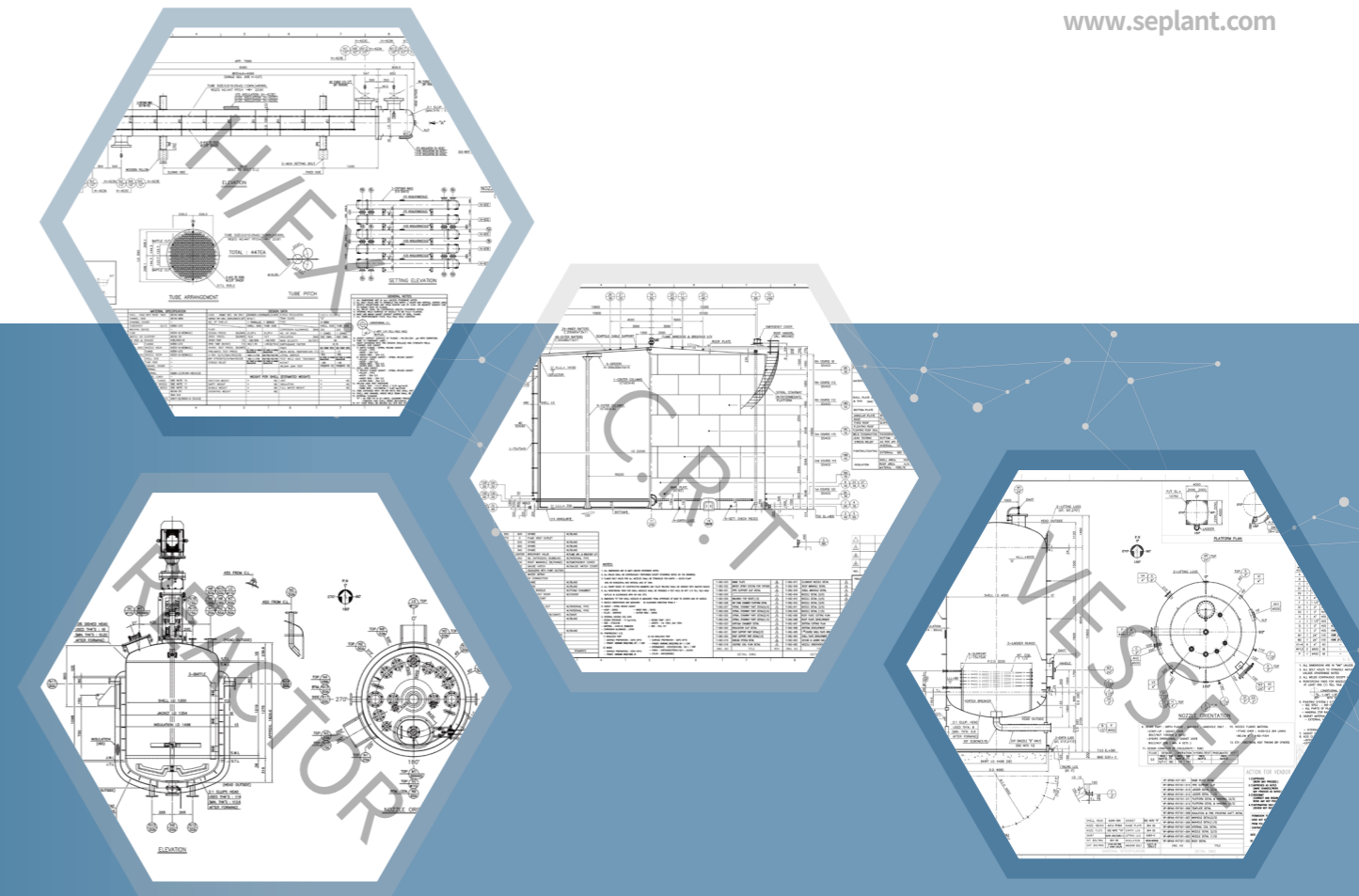
SEOEUN

PLANT TECH

About Company

SEOEUN PLANT TECH CO., LTD. is an engineering company in petrochemical and precision chemistry, bio, food, new materials, and energy environment that addresses industry, academia, research, government, and military requirements in one step.

Also, Based on our know-how and trust accumulated over the past 30 years, SEOEUN PLANT TECH CO., LTD. is doing its best to ensure that customers who use our company are recognized not only in Korea but also in all overseas markets. Thank You.



History

- 1998** • Establishment of SEOEUN ENGINEERING (Business Field: Various Petrochemical Equipment, Engineering & Fabrication Design)
- 2002** • Development of MECAL V2.0 strength calculation program (ASME CODE)
- 2005** • MECAL V3.0 Strength Calculation Program NEW Version Release (ASME CODE)
- 2008** • Apply COMPRESS Program(ASME CODE)
• Business Expansion: Thermal Rating / Piping / Process / Structural Design
- 2011** • Business Expansion: Inspection agency of Domestic pressure vessel design certification (KOSHA, KEA, KGS, Fire Defence Regulation)
- 2013** • Business Expansion: Classification pressure vessel design certification inspection agency (KR, ABS, DNV, GL, LR)
- 2014** • Taking a new leap forward with SEOEUN PLANT TECH Co., Ltd.
• Business Expansion: KOSHA, Overseas certification inspection agency
- 2015** • Apply for the MIDAS GEN Program. (Stress Analysis of Specific Shape Structures)
• Business Expansion: Initiate total engineering such as Process Design, Mechanical, electrical, and instrumentation
- 2017** • Business Expansion: KEA's import pressure vessel inspection agency begins
- 2018** • Development and Application of JIS Strength Calculation Program.(JIS B8265~8267)
• Support for the manufacturing of high-level, high-performance special Item
- 2020** • Business Expansion: Introducing and Designing Test Bed Concepts for the First Time in Korea
- 2022** • Expansion of experimental facilities such as PILOT PLANT, TEST BED, etc.
- 2023** • Launching the development of the world's only design-related program

Contents

Company Introduction

Design Scope

DESIGN

- 1) Drawings And Various Calculations
 - ① Devices such as pressure vessels
 - ② Strength calculation / Thermal Rating
Finite Element Analysis(FEA) / Structural calculation
- 2) Total Engineering(Process, Mechanical, Electrical)
 - ① PLANT Engineering(Petrochemical, Bio, Food, Energy)
 - ② PILOT Engineering

CERTIFICATION

- 1) Domestic Equipment Certification
- 2) Certification of Imported Equipment
- 3) Classification Equipment Certification
- 4) Other Inspection Certification Agency

CONSULTING

- 1) Design Training (ASME / KS / JIS / API)
- 2) Domestic Equipment / Import Equipment Inspection Course Training
- 3) Estimate Support / Review of the law
- 4) Manufacture Support

TEST BED

SPECIAL MANUFACTURE PROJECT

EXPERIENCE

Design Scope

Design Scope

- ① All devices in pressurized vessels used in various fields such as Petroleum-Precision Chemical/Bio/Pharmaceutical /Food/New Materials/Energy Environment
- ② PILOT PLANT, TEST BED, R&D Research project
- ③ Type of scope of work requested by the client

- 01 Participate in the Estimate Phase (Development, New, Expansion, Repair)
- 02 If the client only wants the design (Drawing / Strength Calculation / Structure Calculation / Thermal Rating / PFD / P&ID / PIPING)
- 03 If the client only wants certification (KOSHA / KEA / KGS)
- 04 The Client wants to design & certification
- 05 If the client wants design & certification & manufacture support
- 06 If the Client wants Consulting (Design training / Inspection training / Review of the law)

*It is recommended to proceed with the Pilot Plant/Test Bed/R&D according to 05.



Design Target

Design Target

PILOT engineering of pressure vessels or their entire process facilities used for storage, separation, transfer and mixing of fluids required for processes such as evaporation, absorption, distillation, drying, adsorption, etc



Design devices

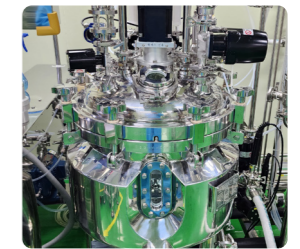
Pressure Vessel / Storage Tank / Heat Exchanger / Tower / Reactor / Agitator / Bio Tank / Air Header / Steam Header / High-Pressure Gas Vessel / Autoclave / Retort / Sterilizer / Dyeing Machine / Receiver Tank / Steam Roller Extractor / Distiller / Dryer / High-Pressure Gas Vessel / Accumulator / Flash Tank / Evaporator



Pressure Vessel



Heat Exchanger



Bio Tank



Reactor



Storage Tank



Autoclave



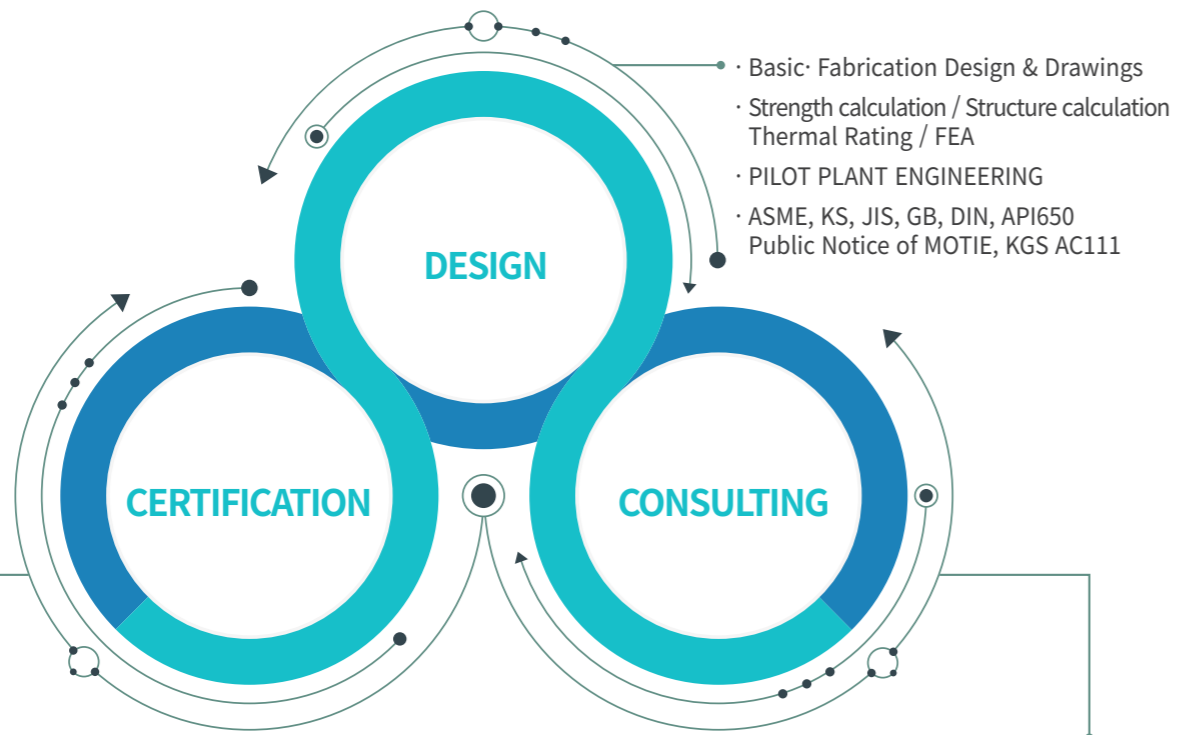
Silo



Tower



PILOT PLANT



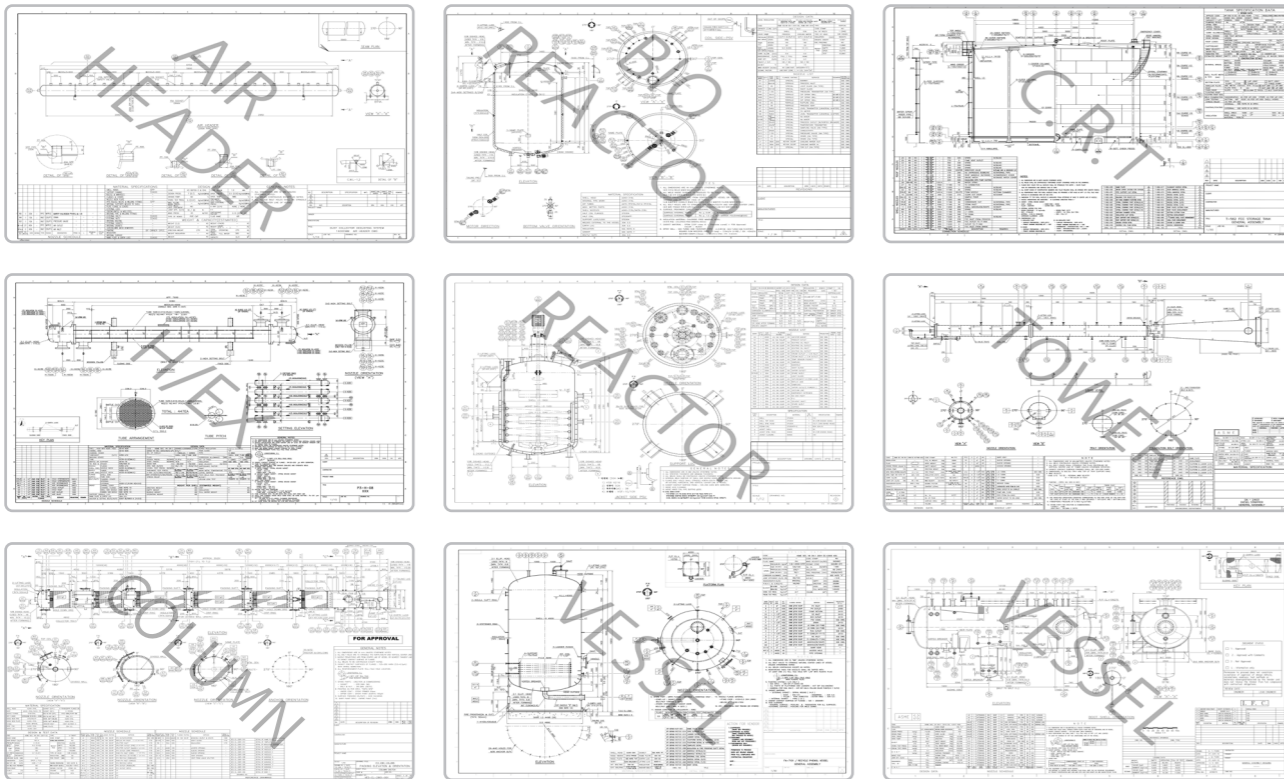
Domestic pressure vessel certification
Import pressure vessel certification
KOSHA / KEA / KGS / Fire defense regulation / Classification

Design training, Inspection training, legal review, ONE-STOP :
Design-Manufacture-Installation
KOSHA, KEA, KGS, TUV, KR, DNVGL, ABS, LR, BV, RINA

Design Drawing

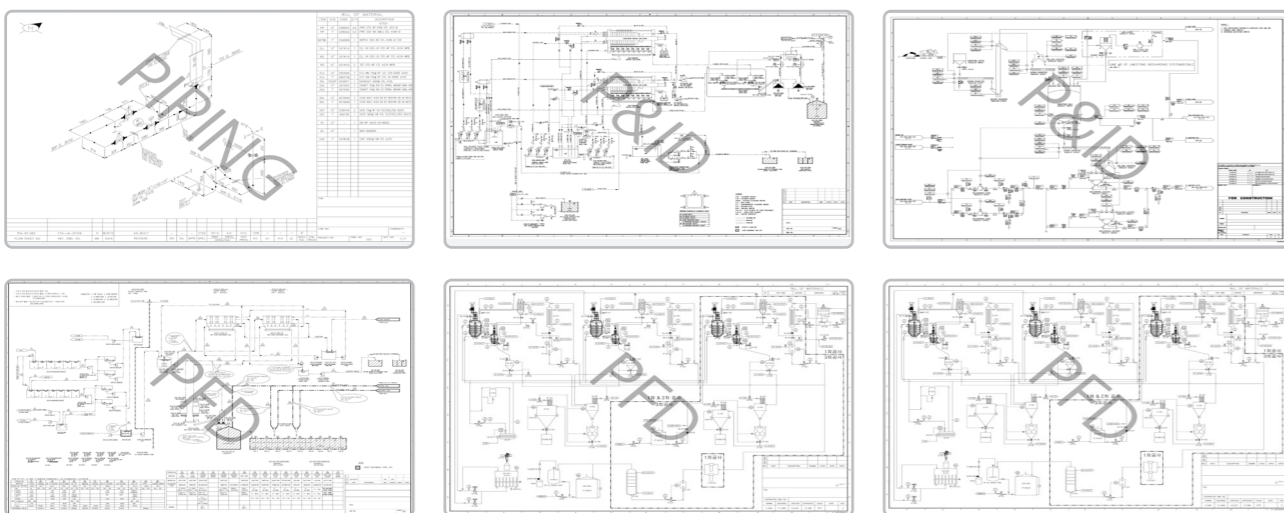
Pressure Vessel-Basic/ Fabrication Design

Drawings can be made for all pressure vessels included in the design target, including VESSEL/REACTOR/H/EX./AUTOCLAVE/TOWER/C.R.T./FILTER HOUSING/SILO/AIR HEADER.



PLANT - PFD / P&ID / PIPING

Designs of plant facilities smaller than a typical factory and larger than a laboratory size can be designed from process design to implementation design.



Design Calculation

Design Code

ASME SEC. VIII DIV. 1,2 / KS B6750 / JIS B8265 / Public Notice of MOTIE / KGS AC111 / ASME SEC. X / API 620,650 / Classification Code (KR, ABS, DNV.GL, LR, RINA) etc.

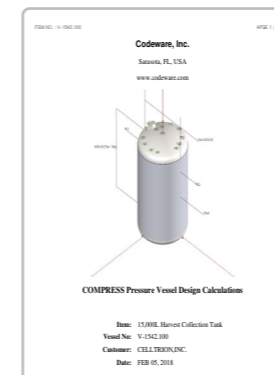
Operating Program

COMPRESS/ MECAL / HTRI / MIDAS / ANSYS / Development and application of other self-made programs



01 Strength Calculation

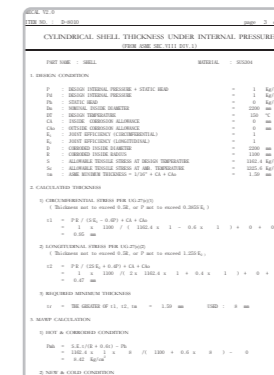
ASME BPVC. SEC.VIII Division 1, 2 - American Mechanical Society Standard
 KS B 6750 - Korean Industrial Standards
 JIS B 8265~7 - Japanese Industrial Standards



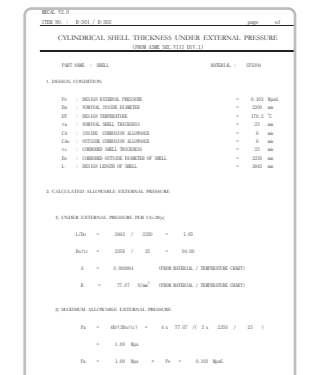
COMPRESS Program



MECAL Program



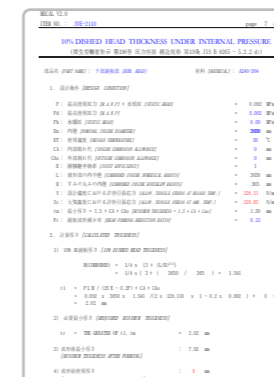
MECAL Program



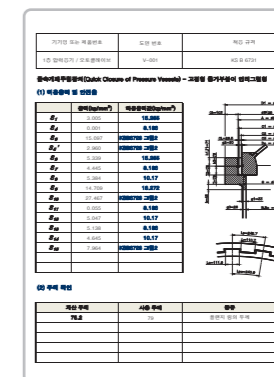
MECAL Program



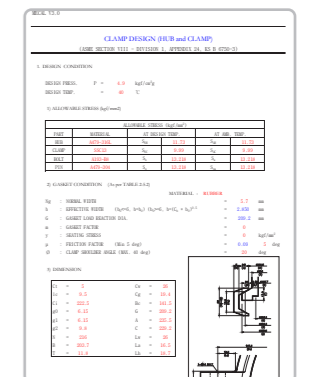
MECAL(Korean) Program



MECAL(Japanese+English) Program



Metal Switchgear / Clamp Calculation

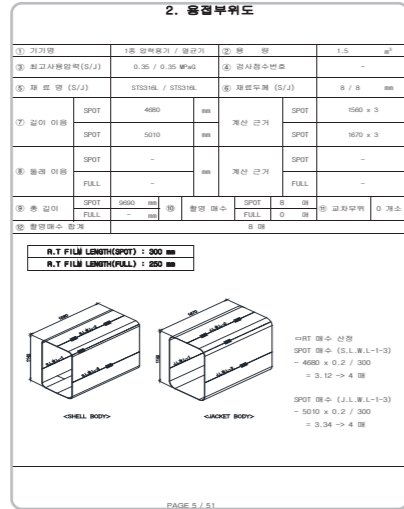


Metal Switchgear / Clamp Calculation

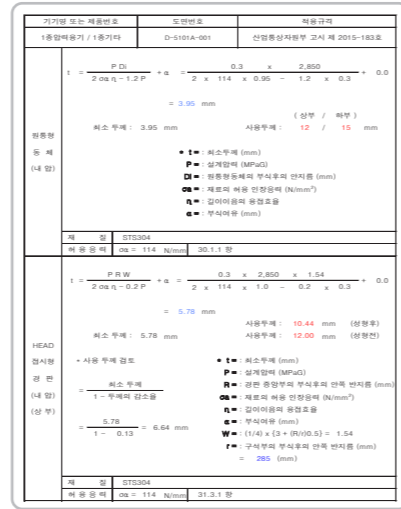
Public Notice of MOTIE- KEA Inspection Standards

1. 설계 조건 (Design Data)

구분	STAINL	JACKET	구분	STAINL	JACKET
외경(내외경)	STAINL	STAINL	외경(내외경)	STAINL	JACKET
외경(내외경)	80	80	외경(내외경)	80	100
벽두께	0.35	0.35	벽두께	0.35	0.35
용량	148	148	용량	148	148
사용압력	0.23	0.23	사용압력	0.23	0.23
사용온도	157	145	사용온도	157	145
소재의 열팽창	0.25	0.50	소재의 열팽창	0.25	0.50
기타사항	80	80	기타사항	80	80
비고	1.2	0.28	비고	1.2	0.28



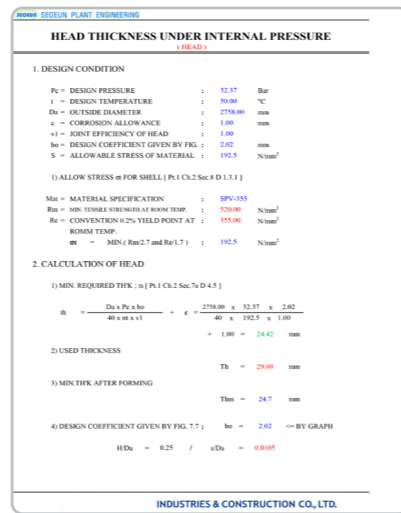
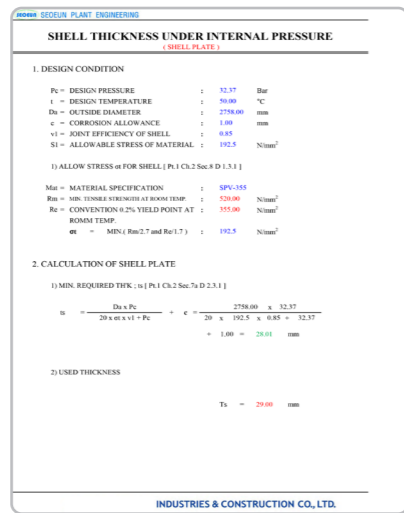
Self-Made Program



Classification Strength Calculation- Type of Classification: ABS, LR, DNV.GL, NK, KR, RINA

1. DESIGN DATA

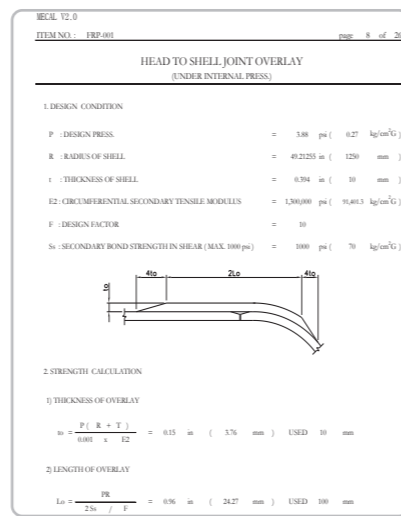
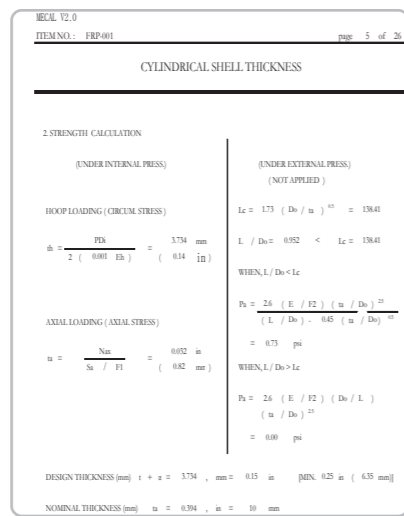
Description	Main	Auxiliary	Service
Ship Name	NR0113435670141		
Classification	G.L.		
TYPE	Vertical Cylindrical		
Capacity	18.3	0.3	1.5
DESIGN PRESSURE	33 (32.37)	33 (32.37)	7.7 (7.56)
OPERATING PRESSURE	30 (29.42)	30 (29.42)	7.06 (6.87)
Hydro Test Pressure	49.5 (48.56)	49.5 (48.56)	11.55 (11.33)
Safety Valve Setting Pressure	33 (32.37)	33 (32.37)	7.7 (7.56)
Design Temperature	50	50	50
Joint Efficiency	0.85	0.85	0.85
Corrosion Allowance	1.0	1.0	1.0
Heat Treatment (For Stress Relief)	NO	YES (HEAD ONLY)	NO
N.D.T	R.T SPOUT (85%)	SPOUT (85%)	SPOUT (85%)
Used Material	SPV355	SPV355	SPV355
Weight (empty)	94.8	292	639
Painting	Inside: Na2 Stop SPPC-SP10 & Modified Epoxy (125 μm 2 Coat) Finish Color - Grey	Na2 Stop SPPC-SP10 & In Coat - Alkyd primer (50 μm) 2nd Coat - Alkyd primer (50 μm) Finish Color - White (N-9.5)	



Design Code of Plastic such as ASME BPVC SEC. X-FRP, PE

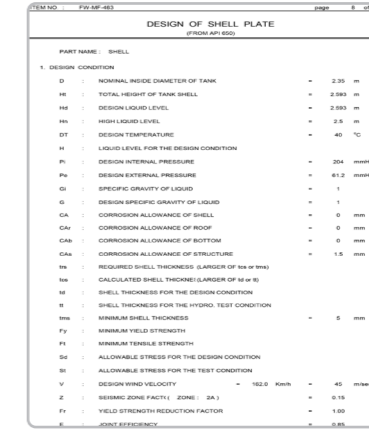
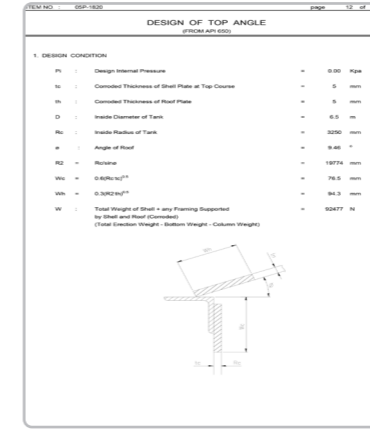
CYLINDRICAL SHELL THICKNESS (FILAMENT WOUND CONDITION)

1. DESIGN CONDITION
 MATERIAL : FRP
 T : DESIGN TEMPERATURE : 104 °F (40 °C)
 P : DESIGN PRESS. (INT) INCLUDE STATIC HEAD PRESS. : 3.68 psi (0.27 kg/cm²)
 P₂ : DESIGN PRESS. (EXT) : 0 psi (0 kg/cm²)
 D : INSIDE DIAMETER (FORMER) : 98.43 in (2500 mm)
 S : ULTIMATE AXIAL TENSILE STRENGTH : 20,000 psi (1380.4 kg/cm²)
 S₂ : ULTIMATE HOOP TENSILE STRENGTH : 16,216 psi (1142.16 kg/cm²)
 e : CORROSION ALLOWANCE (EXT. / INT) : 0 in (0 mm)
 D₂ : (OUTSIDE DIAMETER OF THE SHELL, 2(R + e)) : 99.21 in (2520 mm)
 L : LENGTH OF THE SHELL : 54.09 in (1380 mm)
 F1 : FACTOR FOR INTERNAL PRESSURE : 10
 F2 : FACTOR FOR EXTERNAL PRESSURE : 5
 N_{ax} : AXIAL FORCE PER CIRCUM. INCH OF SHELL : 89.88 lb/in
 E : HOOP TENSILE MODULUS : 1,300,000 psi (91,401.3 kg/cm²)
 P₂ : MAX. ALLOWABLE EXTERNAL PRESS. : 0 psi (0 kg/cm²)



02 Structural Calculation

API 620 / API 650 - Design Criteria for Large Storage Tank
 Earthquake-resistant / Wind Pressure Test - Notice of MPSS / Fire defense regulation



1. 설계조건

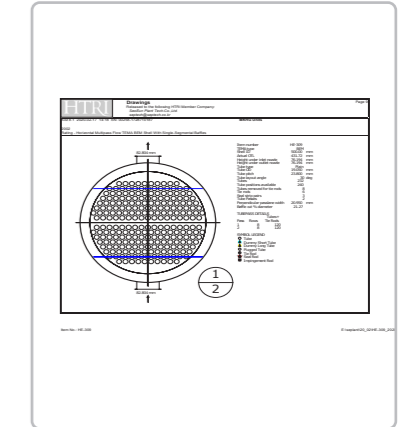
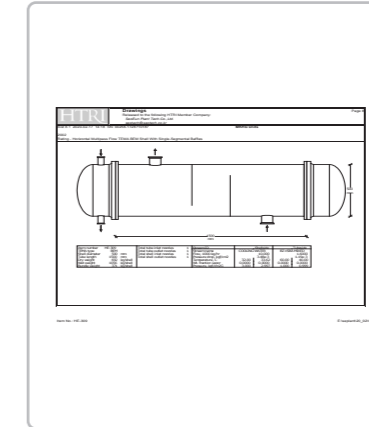
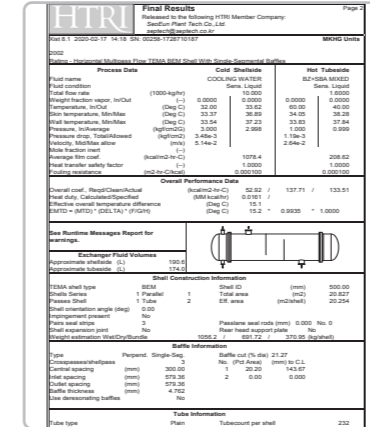
설계기준	API 650
설계압력	0.23 MPa
설계온도	157 °C
외경	80 mm
벽두께	0.35 mm
용량	148 L
사용압력	0.23 MPa
사용온도	157 °C
소재의 열팽창	0.25 mm/m
기타사항	80 mm
비고	1.2

Macal Program (Development of Seooun Plant Tech)

Earthquake resistant & wind pressure calculation

03 Thermal Rating

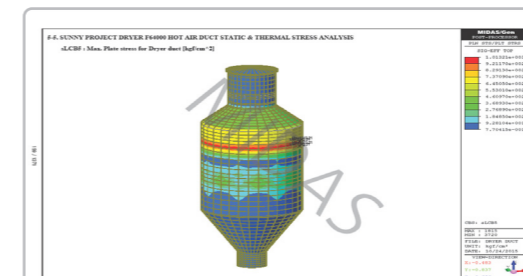
HTRI-Simulation of the design according to the required performance of the heat exchanger



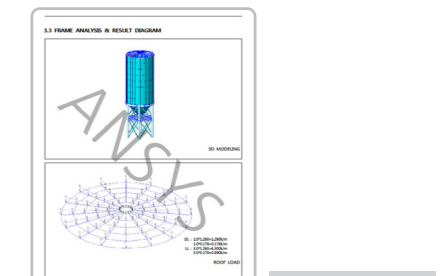
HTRI Program

04 Finite Element Analysis (FEA)

1. Pre-processing 2. Analysis 3. Post-processing
2. Proceed with FEA analysis if it consists of a special type of structure that is difficult to prove by strength calculation
3. Create a report that meets the requirements of ASME BPVC SEC.VII DIV.2
4. Operational program-APPLY MIDAS GEN/ANSYS.



MIDAS GEN Program



ANSYS Program



Domestic Equipment Certification



01 Domestic Pressure Vessel Inspection Agency

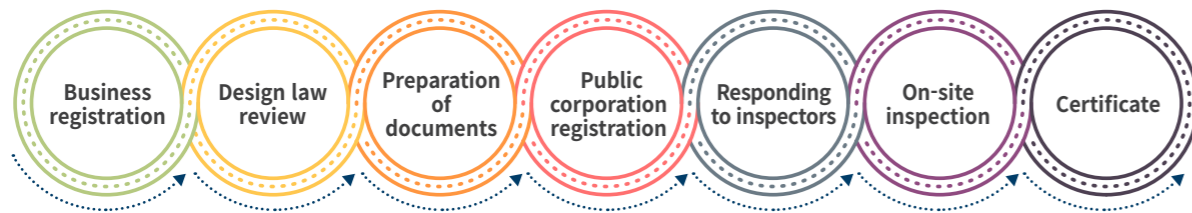
- KOSHA
- KEA
- KGS
- KESCO (Handling only pressure vessels used in power generation facilities)



02 Criteria For Inspection By Major Institutions

	KOSHA	KEA	KGS
Inspection subject	Chemical Process Fluid Handling Vessel - "A" pressure vessels other vessels except "A" (Air / Nitrogen Tank) - "B" pressure vessels Maximum Use Pressure 0.2 Mpa Exceeded	Pressure X Volume = Exceeding 0.004 and heated using heat, steam generation, excess atmospheric pressure -First class pressure vessel Vessel that holds gas exceeding 0.2 MPa -Second class pressure vessel	liquefied gas -0.2Mpa or higher Compressed gas -1Mpa or higher
Inspection code	KS B 6750-3	KS B 6750 or Public Notice of MOTIE	KGS AC111
Inspection order	Written investigation > Individual equipment investigation (material, welding, internal pressure)	welding inspection > structural inspection > installation inspection	Design Review > Site inspection of specific facilities (Material, FIT-UP, Welding, Internal Pressure)

03 Inspection Equipment Certification Flow



04 Certificates For Each Institution in Korea



Certification of Imported Equipment



01 Overseas Inspection Certification Guide (Imported pressure vessel)

If the client wants to import overseas pressure vessels into Korea, We will do the entire process from determining the presence of the inspection equipments to receiving the certificate for the pressure vessels. (Application/Documents/Overseas site inspection /Interpretation /Education/Domestic installation)
For more details, please follow our blog <https://blog.naver.com/septech>.

	KOSHA	KEA	KGS
Inspection method	① Exemption from inspection if certified by an international accredited institution that has signed an MOU with the public corporation. ② Same as domestic inspection. Overseas manufacturing on-site inspection after written examination	Conduct overseas manufacturing on-site inspection after approval of document review	① Exemption from inspection if certified by an international accredited institution that has signed an MOU with the public corporation. ② Overseas manufacturing site inspection + Internal pressure inspection
Inspection code	ASME KS B 6750-3	KS B 6700 or Public Notice of MOTIE	KGS AC111
Significant		When manufacturing large amounts of the same equipment, it is possible to alleviate inspection by reviewing factory registration	Manufacture is possible only after obtaining a specific facility manufacturing license

02 Inspection Equipment Certification Flow



Support for installation inspection, regular inspection, and continuous use inspection after receiving in Korea

KOREA ENERGY AGENCY(KEA) Imported Inspection (Pressure Vessel)



01 KEA Inspection Overview

Due to the revision of the Energy Use Rationalization Act, manufacturing inspections will be conducted at manufacturers' sites on the same basis as in Korea for devices imported after December 3, 2017.

KEA imported vessel inspection is different from other countries.

In particular, domestic standards vary depending on the materials used.

In addition, since foreign companies do not know the domestic application standards, there are many difficulties in the certification and manufacture process.

Accordingly, SEOEUN PLANT TECH consults on KEA inspection to overcome these difficulties.



02 KEA Inspection Target and Type

· **High-temperature, high-pressure pressure vessels using thermal media in petrochemical, bio, pharmaceutical, food, energy, and new materials**

[Energy Use Rationalization Act Article 31 Paragraph 6]

· **Inspection Device Type**

- Pressure Vessel / Heat Exchanger / Reactor / Agitator / Bio Tank / Autoclave / Retort / Sterilizer

Dyeing Machine / Extractor / Evaporator / Bio Similer / Bio Reactor / Fermentor / Glass Lined Vessel

03 KEA Inspection Criteria

	KS	MOTIE
Technical Standard	KS B 6750 (=ASME Sec.VIII div.1)	MOTIE Notice No. 2019-16
Available Material	KS or ASME material only	KS material or higher (JIS, EN, GB)
Quality Control System	Documented system needs	Not required (But WPS required)
Specimen Test	Require only in specific requirements	Requirements for fuselage length or perimeter joint welds
Self-Inspection Accepted	Non-destructive, Mechanical testing conducted by government-operated or recognized companies	

04 KEA Inspection Procedure

1) Welding inspection (Steps 1 to 3)



2) Structural inspection (Steps 1 to 2)



Agency for Inspection and Certification of Imported Equipments of KOSHA, KGS and KEA

01 Introduction to SEOEUN PLANT TECH CO., LTD.

SEOEUN PLANT TECH CO., LTD. is a KEA, KOSHA, and KGS import pressure vessel certification agency.

With 30 years of experience, we consult on all aspects of documentation, drawings, inspection and installation of imported devices.

02 Customer of SEOEUN PLANT TECH CO., LTD.

Importers and Exporters : Project owner(User), Equipment supplier(Trading Company), Manufacturer

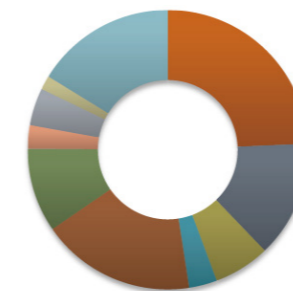
03 Scope of Work of SEOEUN PLANT TECH CO., LTD.

- 1) Guidance on the information required for the contract
- 2) Manage delivery schedules tailored to the manufacturing process
- 3) KEA, KOSHA, and KGS pre-meeting
- 4) Drawing review and documentation based on KEA, KOSHA, and KGS requirements
- 5) Dedicated to communication with KEA, KOSHA and KGS until documents are passed
- 6) Accompanied by welding inspection and structural inspection
- 7) Guide to passing installation inspection after transfer to Korea

04 Need for collaboration with SEOEUN PLANT TECH CO., LTD.

- 1) We provides consulting with expertise based on 30 years of experience.
 - 2) We directly manage all parts including documents, drawings, inspections, domestic delivery dates, and installation completion.
 - 3) We proceed according to the manufacturing and delivery schedule.
- Estimated time required : Document approval - About 3 weeks, Approval of inspection- About 6 weeks

05 Performance of SEOEUN PLANT TECH CO., LTD.



Germany
France
Sweden
Czech
Italy
China
Thailand

India
Japan
Netherlands
Usa
Spain
Mexico
Etc.

**Since December 3, 2017,
SEOEUN PLANT TECH Co., Ltd.
has obtained or progress of inspection
certification of about 1,000 pressure vessels
in 36 countries.**

06 Other Tasks of SEOEUN PLANT TECH CO., LTD.

- Domestic certification and Overseas import certification - KOSHA , KEA , KGS , DNVGL, LR, ABS
- Basic & Fabrication Drawings / Strength Calculation / Thermal Rating / FEA / Process Design P&ID / Earthquake-Resistant Design
- Pilot Plant / Test Bed / Lab Bench Scale / Piping

Classification Equipment Certification

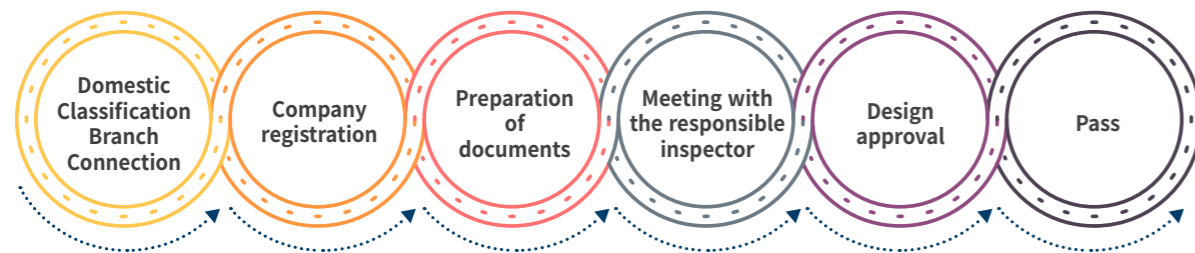


01 Classification Inspection Agency

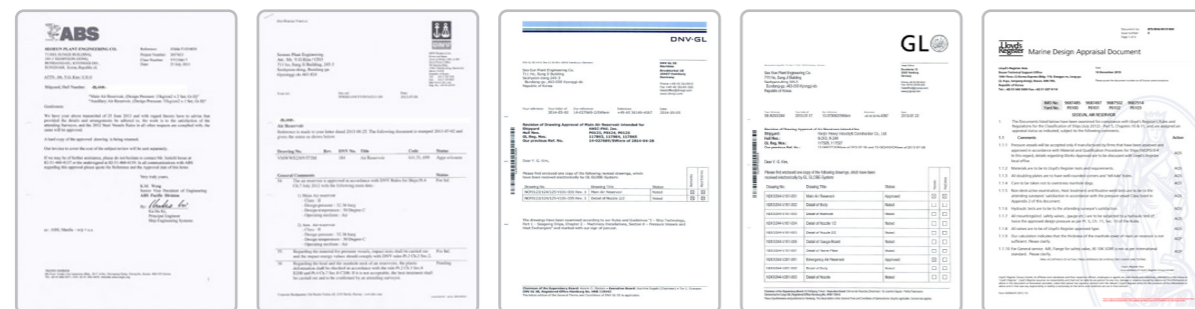
- KR (Korean Register of Shipping)
- ABS (American Bureau of Shipping)
- DNV. GL (Det Norske Veritas&Germanischer Lloyd)
- LR (Lloyds Register)
- Nk (Nippon Kaiji Kyokai)
- RINA (Registro Italiano Navale)



02 Inspection Equipment Certification Flow



03 Sample Certificates By Major Classification Institutions



Other Test Certification Agencies



01 KOSHA

- PSM** Where there are harmful or dangerous facilities prescribed by Presidential Decree in the place of business [industrial safety and health act Article 44 Paragraph 1]
- Hazard Prevention Written Plan** Equipment manufacture process and direct machine, Machines used to prevent health problems, In case of starting construction work [industrial safety and health act Article 42 Paragraph 1]
- Chemical Accident Impact Assessment Report** A person who intends to handle, install, and operate hazardous chemicals [Chemical Substances Control Act Article 23]
- Safety Certification Change Report** If a manufacturer who has received safety certification intends to change machines, instruments, etc. [Notice on safety certification and voluntary safety confirmation reporting procedures Article 21 Paragraph 1]
- Safety Inspection (regular inspection)** Conducting safety inspection of machines that fall under the safety inspection target machine [Industrial safety and health act Article 93 Paragraph 1]
- Voluntary Safety Confirmation Report** Machines corresponding to machinery subject to self-safety verification are reported for verification [Industrial safety and health act Article 89 Paragraph 1]

02 KEA

- Installation Inspection** In case the inspection target device needs to be installed [Energy Use Rationalization Act Article 39 Paragraph 2]
- Modification Inspection** A person who intends to remodel and use the inspection target device [Energy Use Rationalization Act Article 39 Paragraph 2]
- Installation location Change Inspection** A person who intends to change the inspection target device to the installation location [Energy Use Rationalization Act Article 39 Paragraph 2]
- Continued Use Inspection** A person who intends to continue to use the inspection target device whose validity expires [Energy Use Rationalization Act Article 39 Paragraph 4]

03 KGS

- Specific Facility** High Pressure Gas Safety Management Act Article 5 Paragraph 1
- Manufacturing Permit Acquisition Support**
- Overseas Company Factory Registration Support**

04 Other Inspections

- Explosion Proof Certification** Items applicable to electricity such as IECEx/KC

Consulting



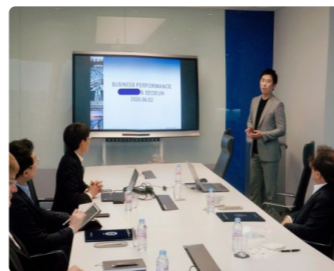
01 Design Training

- ① ASME CODE-Design/Manufacturing Training
- ② KS CODE-Design/Manufacturing Training
- ③ JIS CODE-Design/Manufacturing Training
- ④ API650 CODE-Design/Manufacturing Training
- ⑤ Training on how to operate design programs-COMPRESS / MECAL

02 Domestic/Import Inspection Process Training

Training for the entire process from the beginning of inspection to certification and maintenance (Design + Manufacturing + Inspection Preparation)

- For domestic and imported pressure vessels, on-site meetings are available.
- Most of the subjects of inspection training fall under the following cases.
- Subjects of inspection training
 - ① In the case of domestic import-Overseas Manufacturer manager
 - ② In the case of domestic inspection equipments- manufacturer manager
 - ③ User/Agent/Trader



In the case of KEA import inspection, on-site inspection is mandatory, so it is necessary to respond to foreign manufacturers in accordance with domestic codes.

03 Legal Review And Estimate Support

① Review of Pressure Vessel Regulations

- Determining the inspection target of the pressure vessel / Equipments subject to exemption / Type 1, Type 2 Classification / Classification of Class A and Class B
- We will accurately review the laws and solve problems that may arise in the future.

② Priority of equipment to be inspected for pressure vessels

- The priority for each inspection institution is as follows. If the client's pressure vessel is subject to inspection by a higher level institution, it must be inspected by a higher level institution due to the grounds below.

(KGS > KEA > KOSHA)

Basis : KOSHA-[Enforcement Rules of the industry Safety and Health Act Article 58 Paragraph 2]
KEA-[Energy Use Rationalization Act Enforcement Rules Article 1 Paragraph 2]

③ Preparation of various approval documents

- We support the preparation of various approval documents(JOB REQUIREMENT SPECIFICATIONS, WPS & PQR, INSPECTION & FABRICATION PROCEDURE, LOADING DATA) required by the customer.

④ Estimate support work

- We provide all estimates for the work we provide, such as design / certification / consulting.

⑤ Support for review of various approval documents

- Various documents such as drawings, strength calculations, and inspection documents submitted by VENDOR can be reviewed according to the customer's required specifications and design codes / legal standards.

04 Manufacture Support

Test Bed



01 The Only Test Bed Design Company In Korea - From Idea To Reality

Test Bed

It means designing and realizing the environment, space, system and facilities to test the performance, effectiveness, stability, mass manufacture possibility and convenience of new technologies and prototypes developed by research institutes and universities.

We have a lot of experience in the design of test beds and can present ideas to realize and implement your thoughts.

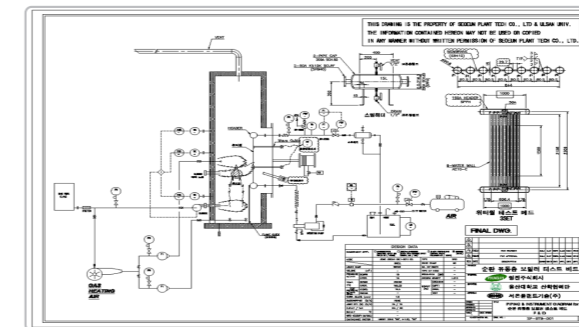
- Possibility of localization of imported equipments and equipment development
- LAB SCALE BENCH / R&D research project / Government project can be performed

02 Test Bed performance

Business Name Circulating fluidized bed combustion Test bed

Main Content Development of Circulating fluidized bed combustion Furnace sound emission failure prediction diagnosis system

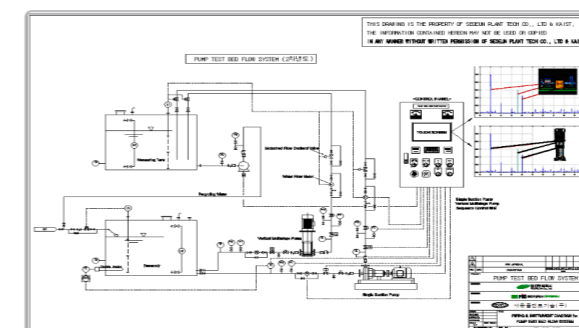
Customer KETEP



Business Name Nuclear power plant rotating equipment complex failure algorithm and database development ENGINEERING

Main Content Development of Circulating fluidized bed combustion Furnace sound emission failure prediction diagnosis system

Customer KOWEPO

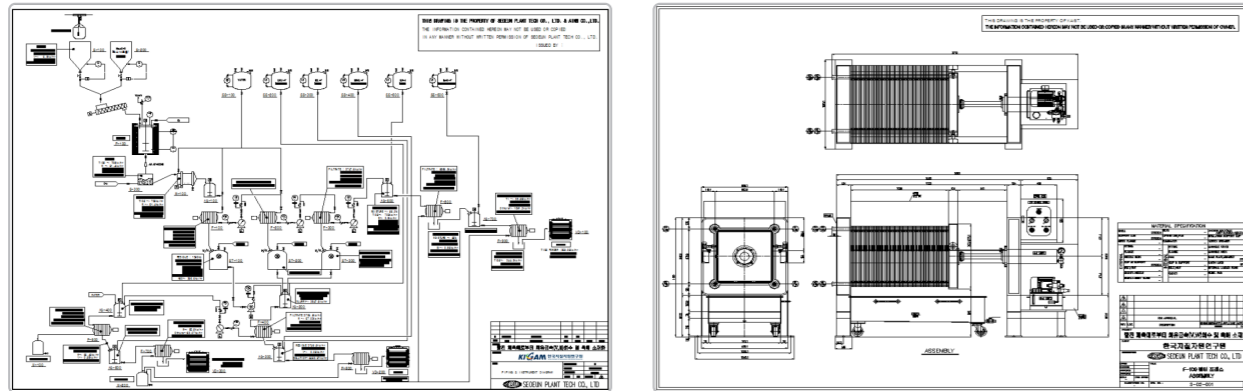


Test Bed performance

Business Name Basic engineering design for electrochemical drainage technology verification from automobile waste catalysts

Main Content Verification of electrochemical platinum leaching technology from automobile waste catalysts

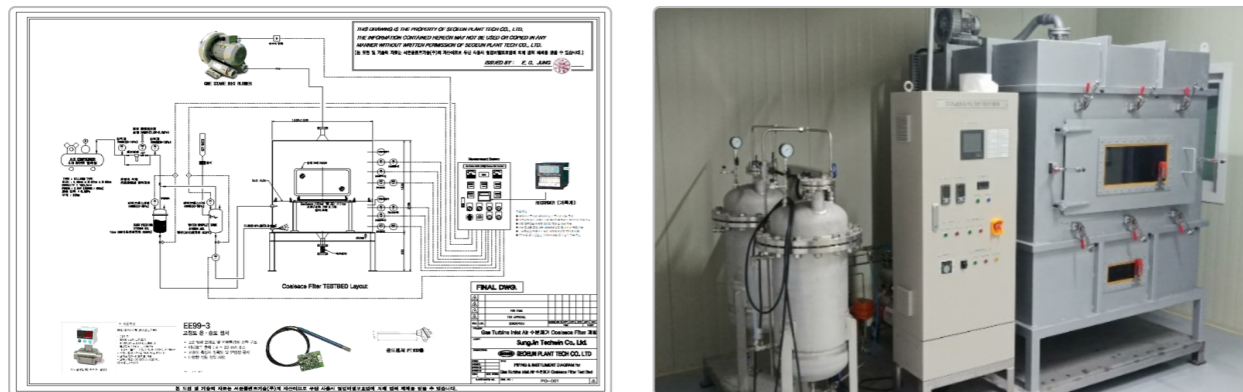
Customer KIGAM



Business Name Development of gas turbine inlet air moisture removal coalesce filter

Main Content Due to the geographical characteristics of the power plant and frequent yellow dust, moisture and dust accumulation deepens inside the air intake system

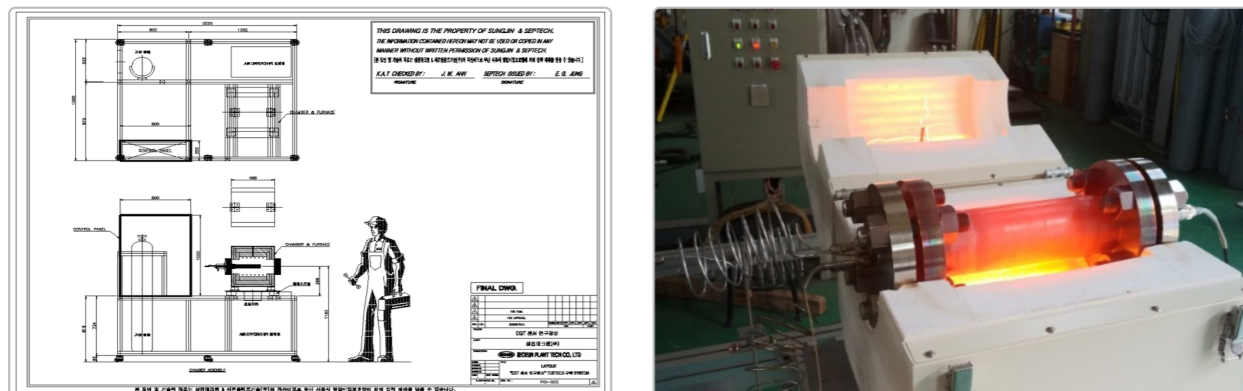
Customer KOWEPO



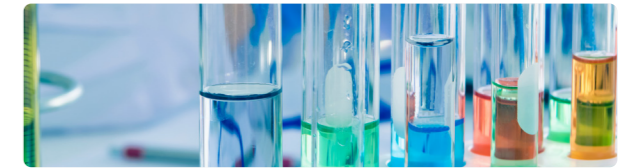
Business Name Establishment of EGT sensor reliability test TEST BED

Main Content The gas is attached to the frame of the gas turbine to detect the temperature of the burned gas, and the combustion condition of the turbine is monitored in real time. Development of Temperature Sensor for Efficient and Safe Control of Gas Turbine

Customer KOWEPO



Special Manufacture Project



01 Manufactured special items with the world's best technology

Special Manufacture Project

High-level devices (pressure vessel, heat exchanger, tower, etc.) are manufactured. Process design such as petrochemical, high purity GAS, precision chemistry, bio, and PANT, and design and manufacture of P&ID are carried out. Of course, We have the ability to perform BATCH SYSTEM, PILOT PLANT, COMERCIAL PLANT, etc.

02 Special Manufacture Project Performance

Business Name SICL4 REFINEMENT STATION SYSTEM

Main Content SICL4 purification method that produces high purity SICL4 by purifying metal impurities, gaseous impurities, moisture, and oil contained in SiCL. High purity SICL4 purification PLANT of 99.999995% or more by simultaneously or continuously removing SICL4 impurity mixed gas using a distillation process

Customer SOLEMATERIALS CO., LTD.



Business Name HEAVY TAR SALES EQUIPMENT

Main Content Installation of Commercial Plant for the purpose of selling heavy tar produced as a by-product in Hyundai Steel's annual steelmaking process

Customer HYUNDAI STEEL CO., LTD.

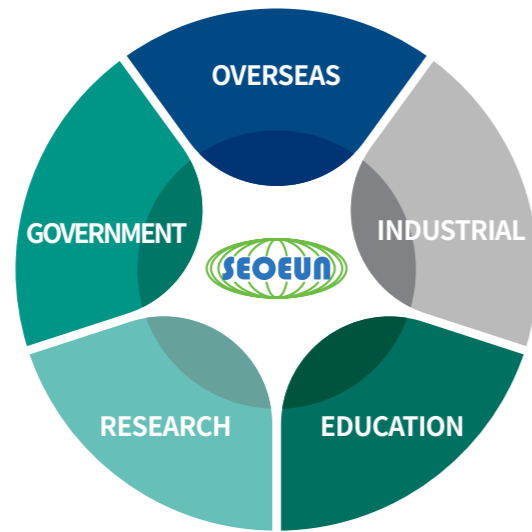




Experience



01 Major partners of Industry, Academia, Research, Government



Overseas

USA-(ALBEMARLE CORP, ROSS EQUIP, LOST WAX, KNBS, METHESON GAS, KBR, ENDORFF), CHINA-(WUXI BIOLOGICS, ANHUI JINMA, DTS, JIBO TAIJI, TECH SOLUTION, INTERCONSTEK, SUNGIL HITEK), JAPAN-(HITACHI, TOYO ENG'G, CHISSO ENG'G, BASF, KOBELCO, TOYOBO, YAMAGEN, KAJIWARA, HOSOKAWA), FRANCE-(STERIFLOW, 3C FRANCE, PETRON BATTAN REFINERY), INDIA-(BIOZEEN), GERMANY-(BOSH, DFT, JANSSEN, THEMATEK, INTRON), SAUDI ARABIA-(SIPCHEM, S.O.C), QATAR-(TASSNI), OMAN-(OMAN OIL COMPANY E&P LLC, SALALAH METHANOL), BELGIUM-(Solvay)

Industrial

SAMSUNG (Heavy Industries Co., Ltd./Engineering Co., Ltd./BIOLOGICS Co., Ltd./ELECTRONICS), POSCO(HOLDINGS /FUTURE M/M-TECH), LG(Chem Ltd./Display/ENERGY SOLUTION), SK(Innovation Co., Ltd./Chemical co., Ltd.), KAI, HANWHA(Tech/Solutions), HJ Shipbuilding & Construction Co., Ltd., DOOSAN, HANKOOK TIRE, DL E&C, Foosung CO., LTD., HANSOL CHEMICAL, HUVIS, DUCKSAN, OCI, DOW CHEMICAL, KUMHO P&B CHEMICALS, HANIL CEMENT Co., Ltd., NAMHAE CHEM., HANMI PHARM Co., Ltd., CHEMTROS, CELLTRION, HANSOL CHEMICAL, SUNGSHIN CEMENT Co., Ltd., SAMPYO CEMENT Co., Ltd.

Education

Industry-university cooperation with 20 universities nationwide including Chungnam National University, KAIST(Department of Aeronautics and Astronautics, Department of Mechanical Engineering), Seoul National University, University of Ulsan, Jeonbuk National University, etc.

Research

KARI, KIGAM, ADD(Engine test equipment), KIMM, NIER, KRIC, KETE, KAERI, KFE, KEPKO-ENC

Government

Ministry of National Defense, KORES, KORAIL, KT, Changwon City, Daegu Metropolitan City, Busan Metropolitan City, Seoul Metropolitan City, HOIL, KOEN, KOWEPO, KEWP, KHNP

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
BCC PROJECT	VESSEL	SSANGYONG OIL REFINERY	KOREA	1998
INCINERATOR SYSTEM	INCINERATOR	HANYANG CHEMICAL	KOREA	1998
E/O PURIFICATION PROJECT	TOWER	HYUNDAI PETROCHEMICAL	KOREA	1998
BTX PROJECT	VESSEL / H/EX.	JEONGWOO CHEMICAL	KOREA	1998
NCC PROJECT	H/EX.	NAMHAE CHEMICAL	KOREA	1998
JILIN CAK PROJECT	FLARE STACK	TOYO ENGINEERING	JAPAN	1998
COMPANY PARK BUILDING	TOTAL ENGINEERING	KYUNGHANG NESPAPER	KOREA	1998
TCL PROJECT	VESSEL / TOWER	TOYO ENGINEERING	JAPAN	1998
HSR PROJECT	VESSEL / REACTOR	HYUNDAI PETROCHEMICAL	KOREA	1998
FCC PROJECT	VESSEL(HIGH PRESSURE)	YUKONG	KOREA	1998
CUPOLA FLUJE CLEANING SYSTEM	FILTER / H/EX., / DUCT STEEL STRUCTURE / PIPING	BUEKSAN	KOREA	1998
RFCC F/G SOX SCRUBBER	STRUCTURE	SK CORPORATION	KOREA	1998
BIBA-1 PROJECT	VESSEL	BIBACO	KOREA	1998
SOLVENT RECOVERY SYSTEM	VESSEL	YOUL CHON CHEMICAL	KOREA	1998
OZONE TANK SYSTEM TANK & PIPING	TANK, PIPING	YOUL CHON CHEMICAL	KOREA	1998
SBR-9 PROJECT	C.R.T	KUMHO PETROCHEMICAL	KOREA	1999
TSING MA BRIDGE PROJECT	TOTAL	HONGKONG	HONGKONG	1999
UTILITY & FACILITY PROJECT	TOWER	DAELIM INDUSTRIAL	KOREA	1999
PTA PROJECT	VESSEL	SAMSUNG GENERAL CHEMICAL	KOREA	1999
LG 3AA PROJECT	C.R.T	LG ENGINEERING	KOREA	1999
PL/TCM PLANT PROJECT	TOTAL	HANBO IRON STEEL	KOREA	1999
FEB PROJECT	TOTAL	DONGYANG NYLON	KOREA	1999
YER-11 PROJECT	H/EX.	KUMHO PETROCHEMICAL	KOREA	1999
OXYGEN SUPPLY PLANT PROJECT	TOTAL	POSCO	KOREA	1999
SR PROJECT	C.R.T	LG ENGINEERING	KOREA	1999
HP24M PROJECT	VESSEL	OCI	KOREA	1999
CRT PROJECT	H/EX.	KOOKDO CHEMICAL	KOREA	1999
P PROJECT	TOWER / H/EX.	DCI / KT	KOREA	1999
40,000 MT/Y K-RESIN PROJECT	FILTER, H/EX.	DAELIM INDUSTRIAL	KOREA	1999
396,000 T/Y #3 SULFURIC ACID PLANT	BIG TOWER	NAMHAE CHEMICAL	KOREA	1999
FLARE STACK SYSTEM	TOTAL	LG CHEMICAL	KOREA	2000
YDR-4 PROJECT	REACTOR / TOWER / H/EX.	KKPC	CHINA	2000
VCM PROJECT	TOWER / H/EX.	HYUNDAI PETROCHEMICAL	KOREA	2000
PEB STRUCTURE	TOTAL	HANKOOK TIRE	KOREA	2000
KEROSENE/ DIESEL PROJECT	STRUCTURE / H/EX.	LG CALTEX OIL	KOREA	2000
NO.2 UTILITY OFF-SITE PROJECT	VESSEL / C.R.T	SAMSUNG GENERAL CHEMICAL	KOREA	2000
CDP-1 PROJECT	TOTAL	SK NJC	KOREA	2000
NO.2 PP PROJECT	VESSEL / H/EX.	PEMEX	KOREA	2000
HEAVY NAPHTHA SPLITTER UNIT	TOTAL	SAMSUNG GENERAL CHEMICAL	KOREA	2000
P PROJECT	TOWER / H/EX.	KT	KOREA	2000
AGC AVL PROJECT	VESSEL / H/EX.	CHISSO ENGINEERING	JAPAN	2000
GWANGJU 2ND FACTORY	TOTAL	SAMSUNG ELECTRONICS	KOREA	2000
HYDROGEN PLANT	VESSEL	FPC	KOREA	2000
FLARE STACK SYSTEM	FLARE STACK	PE CHEMICAL	TAIPEI	2001
CHEONGJU NO.5 PLAT	VESSEL	DAESUNG SANSO	KOREA	2001
PET/OFF GAS SCRUBBING SYSTEM	TOWER	SAMNAM	KOREA	2001
AGC AVL PROJECT	VESSEL / H/EX.	CHISSO ENGINEERING	KOREA	2001
NEW TDI PROJECT	VESSEL / H/EX.	BASF	JAPAN	2001
NEW HYVAHL COMPLEX PROJECT	H/EX.	S-OIL	KOREA	2001
VOC SYSTEM	VESSEL	BASF	KOREA	2001
YM-2 PROJECT	H/EX.	LG	KOREA	2001
KA1, K2, K4 PROJECT	VESSEL / H/EX.	CHEIL ENGINEERING	KOREA	2001
SGC AROMATICS REVAMPING	H/EX.	SAMSUNG ENGINEERING	KOREA	2001
TORAY OCP-3 PROJECT	VESSEL H/EX.	TEK KOREA	KOREA	2001
EXPANSION PROJECT 2002	VESSEL / H/EX.	LG NIKKO COPPER	KOREA	2002
NYLON POWDER 50 MTPY PLANT	VESSEL / H/EX.	SHINHO PETROCHEMICAL	KOREA	2002
WORK TANK FABRICATION	VESSEL	DAEWOO ELEC.	KOREA	2002
VITAMIN B2 PRODUCTION PROJECT	VESSEL / H/EX./ C.R.T	BASF	KOREA	2002
GWANGMYEONG DISTRICT HEATING	HEATER(TWO ZONE)	LG POWER	KOREA	2002
HP-SCWO PILOT PROJECT	VESSEL	KOREA PETROCHEMICAL.	KOREA	2002
PL/TCM PROJECT	H/EX.	DONGBU STEEL	KOREA	2002
BAIONGAN BLUE SKY PROJECT	VESSEL	HITACHI	KOREA	2002

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
YDR-4 PROJECT	REACTOR / TOWER / H/EX.	KKPC	CHINA	2000
VCM PROJECT	TOWER / H/EX.	HYUNDAI PETROCHEMICAL	KOREA	2000
PEB STRUCTURE	TOTAL	HANKOOK TIRE	KOREA	2000
KEROSENE/ DIESEL PROJECT	STRUCTURE / H/EX.	LG CALTEX OIL	KOREA	2000
NO.2 UTILITY OFF-SITE PROJECT	VESSEL / C.R.T	SAMSUNG GENERAL CHEMICAL	KOREA	2000
CDP-1 PROJECT	TOTAL	SK NJC	KOREA	2000
NO.2 PP PROJECT	VESSEL / H/EX.	PEMEX	KOREA	2000
HEAVY NAPHTHA SPLITTER UNIT	TOTAL	SAMSUNG GENERAL CHEMICAL	KOREA	2000
P PROJECT	TOWER / H/EX.	KT	KOREA	2000
AGC AVL PROJECT	VESSEL / H/EX.	CHISSO ENGINEERING	JAPAN	2000
GWANGJU 2ND FACTORY	TOTAL	SAMSUNG ELECTRONICS	KOREA	2000
HYDROGEN PLANT	VESSEL	FPC	KOREA	2000
FLARE STACK SYSTEM	FLARE STACK	PE CHEMICAL	TAIPEI	2001
CHEONGJU NO.5 PLAT	VESSEL	DAESUNG SANSO	KOREA	2001
PET/OFF GAS SCRUBBING SYSTEM	TOWER	SAMNAM	KOREA	2001
AGC AVL PROJECT	VESSEL / H/EX.	CHISSO ENGINEERING	KOREA	2001
NEW TDI PROJECT	VESSEL / H/EX.	BASF	JAPAN	2001
NEW HYVAHL COMPLEX PROJECT	H/EX.	S-OIL	KOREA	2001
VOC SYSTEM	VESSEL	BASF	KOREA	2001
YM-2 PROJECT	H/EX.	LG	KOREA	2001
KA1, K2, K4 PROJECT	VESSEL / H/EX.	CHEIL ENGINEERING	KOREA	2001
SGC AROMATICS REVAMPING	H/EX.	SAMSUNG ENGINEERING	KOREA	2001
TORAY OCP-3 PROJECT	VESSEL H/EX.	TEK KOREA	KOREA	2001
EXPANSION PROJECT 2002	VESSEL / H/EX.	LG NIKKO COPPER	KOREA	2002
NYLON POWDER 50 MTPY PLANT	VESSEL / H/EX.	SHINHO PETROCHEMICAL	KOREA	2002
WORK TANK FABRICATION	VESSEL	DAEWOO ELEC.	KOREA	2002
VITAMIN B2 PRODUCTION PROJECT	VESSEL / H/EX./ C.R.T	BASF	KOREA	2002
GWANGMYEONG DISTRICT HEATING	HEATER(TWO ZONE)	LG POWER	KOREA	2002
HP-SCWO PILOT PROJECT	VESSEL	KOREA PETROCHEMICAL.	KOREA	2002
PL/TCM PROJECT	H/EX.	DONGBU STEEL	KOREA	2002
BAIONGAN BLUE SKY PROJECT	VESSEL	HITACHI	KOREA	2002

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
S-PROJECT	VESSEL / H/EX.	KCC	KOREA	2002
WATER JET PROJECT	SPECIAL SYSTEM	MINISTRY OF NATIONAL DEFENSE (국방부)	KOREA	2002
FPCC ARDS-I PROJECT	VESSEL	FORMOSA	TAIWAN	2003
SK 2nd LBO PROJECT	TOTAL	SK CHEMICAL	KOREA	2003
CHANSWON CITY HOLL	TOTAL	GOVERNMENT	KOREA	2003
AIR FIN COOLER	COOLER	HYUNDAI OIL	KOREA	2003
BP SHAH DENIZ PROJECT	VESSEL	SOC	SAUDI ARABIAN	2003
SK 2nd LBO PROJECT	TOTAL	SK CHEMICAL	KOREA	2004
CHANSWON CITY HOLL	TOTAL	GOVERNMENT	KOREA	2004
HANWHA VENT CONDENSER	H/EX.	HANWHA	KOREA	2004
DONGBU H/EX.	H/EX.	DONGBU	KOREA	2004
KANGMYUNG LOCAL HEATING	H/EX.(TWO ZONE)	LG CONS.	KOREA	2004
AN WASTE WATER T-N TREATMENT SYSTEM	TOTAL	TAEKWANG PETRO.	KOREA	2004
FLARE STACK	FLARE STACK	JHON ZINK	TAIAND	2004
5th GAS SEPARATION PLANT PROJECT	VESSEL	HITACHI	JAPAN	2004
M-PROJECT	REACTOR	HANMAEK IND.	MYANMAR	2004
FLARE STACK	FLARE STACK	HAMWORTHY	INDONESIA	2004
SUCTION HEATER OF FUEL OIL	STORAGE TANK	KOREA WESTERN POWER CO.,LTD (한국서부발전)	KOREA	2004
CURING OVEN INCINERATOR	H/EX.	BUEKSAN	KOREA	2004
N-PROJECT	REACTOR / VESSEL	HYOSUNG CORP.	KOREA	2004
LOTTE SAMGANG CHON-AN FACTORY	VESSEL	DOOSAN MECHATEC	KOREA	2004
VENT CONDENSOR & H/EX.	H/EX.	DONG YANG CHEMICAL	KOREA	2004
SK COPORATION	STRUCTURE	DOOSAN MECHATEC	KOREA	2005
SOLVENT RECOVERY SYSTEM	TOTAL	SAMKUN E&C	KOREA	2005
OZONE TANK	PIPING / STRUCTURE	YOUL CHON CHEMICAL	KOREA	2005
YM-2 PROJECT	H/EX.	LG	KOREA	2005
KA1, K2, K4 PROJECT	TOTAL	CHEIL ENGINEERING	KOREA	2005
EXPANSION PROJECT 2002	VESSEL / H/EX.	LG NIKKO COPPER	KOREA	2005
WORK TANK FABRICATION	TOWER / VESSEL	DAEWOO ELEC.	KOREA	2005
VITAMIN B2 PRODUCTION PROJECT	VESSEL / C.R.T / H/EX.	BASF	KOREA	2005
GWANGMYEONG DISTRICT HEATING	H/EX.(TWO ZONE)	LG POWER	KOREA	2005

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
DONGBU H/EX.	H/EX.	DONGBU	KOREA	2005
AN WASTE WATER T-N TREATMENT SYSTEM	TOTAL	TAEKWANG PETRO.	KOREA	2005
FLARE STACK	FLARE STACK	JHON ZINK	TAIAND	2005
5th GAS SEPARATION PLANT PROJECT	VESSEL	HITACHI	JAPAN	2005
M-PROJECT	REACTOR	HANMAEK IND.	MYANMAR	2005
FLARE STACK	FLARE STACK	HAMWORTHY	INDONESIA	2005
SUCTION HEATER OF FUEL OIL	STORAGE TANK	KOREA WESTERN POWER CO.,LTD (한국서부발전)	KOREA	2005
N-PROJECT	REACTOR / VESSEL	HYOSUNG CORP.	KOREA	2005
N-PROJECT	ENG'G DWG.	HYOSUNG	KOREA	2006
PLASMA PILOT PLANT	VESSEL	KGC	KOREA	2006
PIT VESSEL	TOTAL	SEC	KOREA	2006
POHANG H2 PROJECT	VESSEL	BOCK	KOREA	2006
PILOT PLANT	H/EX.	JEIO	KOREA	2006
WTP 1nd LINE TRANSFER PROJECT	PIPING / STRUCTURE / TOTAL EQUIPMENT	KAI	KOREA	2006
FORMOSA NINGBO	FILTER	FORMOSA	TAIWAN	2006
JEBEL ALI POWER AND DESALINATION STATION 'L' - PHASE 2	FILTER	HEC	KOREA	2006
INITIAL Z	VESSEL / H/EX.	SAN NOPCO	KOREA	2006
BD PROJECT	VESSEL / C.R.T	DANSUK	KOREA	2006
DUNG QUAT REFINERY PROJECT	STORAGE TANK	PETROVIETANA	VIETNAM	2006
P2-PROJECT	VESSEL	SAMSUNG TOTAL PETROCHEMICALS	KOREA	2006
A-PROJECT	VESSEL / H/EX.	SK CHEMICAL	KOREA	2006
MODACRYL RESIN 800L PILOT PLANT	VESSEL	HANWHA CHEMICAL	KOREA	2006
SKICO REVAMP PROJECT	H/EX.	SK INCHEON OIL	KOREA	2006
CELLTRION EXPANSION PROJECT	VESSEL	CELLTRION	KOREA	2006
WTP 2nd LINE TRANSFER PROJECT	PIPING / STRUCTURE / TOTAL EQUIPMENT	KAI	KOREA	2006
HP-ECH PILOT	VESSEL / H/EX.	HANWHA CHEMICAL	KOREA	2006
P2 PROJECT	ENG'G DWG. TOTAL EQUIPMENT	OCI	KOREA	2007
HP-ECH PILOT	TOWER / VESSEL	HANWHA CHEMICAL	KOREA	2007
45m3 REACTOR	REACTOR	KOBELCO	JAPAN	2007
KPA PHENOL PURIFICATION REVAMP PROJECT	REACTOR / VESSEL	KUMHO P&B CHEMICAL	KOREA	2007
P PILOT PROJECT	SPECIAL REACTOR	KCC	KOREA	2007

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
DISTILLATION UNIT SYSTEM	TOTAL EQUIPMENT	KAYA ENERGY	KOREA	2007
B-1 PROJECT	TOWER / VESSEL / H/EX.	BIZEL CORPORATION	KOREA	2007
ACP PLANT PROJECT	VESSEL / C.R.T	ECOPRO	KOREA	2007
BPA(III) PLANT PROJECT	VESSEL	KUMHO P&B CHEMICAL	KOREA	2007
MIBK PLANT REVAMP PROJECT	TOWER	KUMHO P&B CHEMICAL	KOREA	2007
FUMED SILICA PROJECT	TOWER	KCC	KOREA	2007
KFCT PROJECT	C.R.T	OCI	KOREA	2007
GLOW 115MW CFB3 PROJECT	SPECIAL VESSEL	GLOW ENERGY PUBLIC	KOREA	2007
ARQ PROJECT	ENG'G DWG. TOTAL EQUIPMENT	TASSNI	QATAR	2008
HMC PP PROJECT LINE-3	VESSEL	HMC POLYMERS	KOREA	2008
40m3 REACTOR	SPECIAL REACTOR	KOBELCO	JAPAN	2008
RUSSIA PROJECT	REACTOR	SAMHWA MIXING TECH	RUSSIA	2008
THAILAND ASR PROJECT	REACTOR / VESSEL / H / EX.	HANWHA CHEMICAL THAILAND	THAILAND	2008
P2 PROJECT	TOWER / VESSEL / H/EX.	OCI	KOREA	2008
SALALAH METHANOL PROJECT	H/EX.	SALALAH METHANOL	OMAN	2008
P3 PROJECT	ENG'G DWG.	OCI	KOREA	2008
CNP PROJECT	TOWER / VESSEL / C.R.T	HANWHA TECH	CHINA	2008
CNP PROJECT	VESSEL	HANWHA CHEMICAL	CHINA	2009
P3.5 PROJECT	VESSEL	OCI	KOREA	2009
OSAN STEAM SUPPLY AND POWER GENERATION	H/EX. (TWO ZONE)	KOSEP	KOREA	2009
DINH VU POLYESTER PLANT PROJECT	VESSEL	PV-TEX	VIETNAM	2009
HP-2 PROJECT	TOWER / REACTOR	HANSOL CHEMICAL	KOREA	2009
NO.4 DNT PROJECT	VESSEL / H/EX.	HUCHEMS	KOREA	2009
ADD ENGINE TEST FACILITY PROJECT	TOTAL	AGENCY FOR DEFENSE DEVELOPMENT (국방과학연구소)	KOREA	2009
FAJAR PAPER WASTE INCINERATION PLANT PROJECT	INCINERATOR	HYOSUNG EBARA ENGINEERING	INDONESIA	2009
YEO SU THERMAL POWER PLANT UNIT 2	SILO	KOSEP	KOREA	2009
MAIN, AUXILIARY FUEL HEATER	TOTAL	AGENCY FOR DEFENSE DEVELOPMENT (국방과학연구소)	KOREA	2010
GYPSUM WATER 2ND SLUDGE PROCESS	TOTAL	NAMHAE CHEMICAL	KOREA	2010
OCMI C PROJECT	ENG'G DWG.	OCI	KOREA	2010
P3.7 PROJECT	TOTAL EQUIPMENT	OCI	KOREA	2010
EA PROJECT	TOTAL EQUIPMENT	SIPCHEM	SAUDI ARABIA	2010

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
NEOTECHS ROTARY PRESSURE FILTER PILOT PROJECT	TOTAL	SK PETROCHEMICAL	KOREA	2010
CAPE PROJECT	C.R.T	KPX LIFE SCIENCE	KOREA	2010
CA2 PROJECT	VESSEL	OCI	KOREA	2010
AUTO CRAVE PROJECT	VESSEL	ROULUNDS RUBBER	DENMARK	2010
2x60MW MERAK CFB3 PROJECT	SILO	PT. MERAK ENERGI INDONESIA	INDONESIA	2010
NO.4 DNT PROJECT	ENG'G DWG.	HUCHEMS	KOREA	2010
P4-PROJECT (18000 TON)	TOTAL	OCI	KOREA	2011
EAGLE PROJECT	REACTOR / VESSEL / H / EX.	HANWHA CHEMICAL	KOREA	2011
C.R.T (2000 M3)	C.R.T	SKC	KOREA	2011
SPC ULSAN NO.1 PTA DBN PROJECT	TOTAL	SAMSUNG TOTAL	KOREA	2011
NORTH STAR PROJECT (1200 M3)	D.R.T	THE DOW CHEMICAL COMPANY	KOREA	2011
A/R PILOT PROJECT	TOTAL	JEONBUK UNIVERSITY	KOREA	2011
NO.1 TAC PROJECT	H/EX.	SK INNOVATION	KOREA	2011
1000 MT/y K-991 3RD PLANT	TOWER / VESSEL / H/EX.	FOOSUNG CO., LTD.	KOREA	2011
GARNET BLASTING MACHINE	VESSEL	SAMSUNG HEAVY INDUSTRY	KOREA	2011
KPA(III) REVAMP PROJECT	TOWER	KUMHO P&B CHEMICAL	KOREA	2011
EDISON PROJECT	REACTOR	SAMSUNG BIOLOGICS	KOREA	2011
SMVR-01 PROJECT	TOTAL	SK PETROCHEMICAL	KOREA	2011
#2 BTX-PROJECT	VESSEL	HC PETROCHEM	KOREA	2011
NaOH CONCENTRATION PLANT	TOTAL	PKC CHEMICAL & BIOTECH	KOREA	2011
EA PROJECT	ENG'G DWG.	SIPCHEM	SOUDI	2011
CIVP PROJECT	REACTOR	HITACH PLANT TECHNOLOGIES	JAPAN	2011
3PZ-PROJECT	REACTOR	HONAM MITSUI CHEMICALS INC	KOREA	2011
EVALUATION REACTOR	PILOT PLANT SYSTEM	HANWHA	KOREA	2011
SOUTH PARS GAS FIELD DEVELOPMENT	PIPING	NIOC PARS OIL AND GAS CO.,LTD.	IRAN	2011
#2 BTX PROJECT	STRAINER	HC PETROCHEM	KOREA	2012
YDR-S-1 SSBR PROJECT	H/EX.	DAELIM INDUSTRIAL CO.,LTD.	KOREA	2012
NO.2 SPENT CAUSTIC INCINERATOR SYSTEM	INCINERATOR / VESSEL / H/EX. STACK	GS CALTEX CORPORATION	KOREA	2012
30,000 MTPA AC/ ECH PLANT	TOWER / VESSEL	SAMSUNG FINE CHEMICALS CO.,LTD.	KOREA	2012
REACTOR PROJECT	REACTOR	TOYOBO CO., LTD.	JAPAN	2012
MUSANDAM GAS PLANT	VESSEL / FILTER	OMAN OIL COMPANY E&P LLC	OMAN	2012

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
DONGHAE BIOMASS POWER PLANT	SILO	KOREA EAST-WEST POWER CO.,LTD. (한국동서발전)	KOREA	2012
REFINERY MASTER PLAN 2 PROJECT	VESSEL	PETRON BATAAN REFINERY	FRANCE	2012
P3.9 PROJECT	VESSEL	OCI	KOREA	2012
PURE GROWTH PROJECT	ENG'G DWG.	ALBEMARLE CORPORATION	U.S.A	2012
CF DRYER PROJECT	VESSEL	YOUGWANG CHEMICAL CO.,LTD.	KOREA	2012
HIB 1000L PROJECT	VESSEL	LG LIFE SCIENCES CO.,LTD.	KOREA	2012
TOTE TANK PROJECT	VESSEL	BOKWANG CO.,LTD.	KOREA	2012
EDISON II PROJECT	REACTOR / VESSEL	SAMSUNG BIOLOGICS	KOREA	2013
LP-1 PPB EXTENSION PROJECT	REACTOR / VESSEL	HANWHA CHEMICAL	KOREA	2013
TRIM HEATER PROJECT	H/EX.	DAELIM INDUSTRIAL CO.,LTD.	KOREA	2013
P0093s&P0095 PROJECT (ABS & G.L)	AIR RESERVOIR	HANJIN HEAVY IND.&CON.	PHIL-SUBIC	2013
OLE-SIV BENCH SCALE PROJECT	REACTOR / VESSEL	SK INNOVATION	KOREA	2013
RESIN REACTOR SYSTEM PROJECT	REACTOR / VESSEL / H/EX.	FTC KOREA CO.,LTD.	KOREA	2013
HYDROMETALLURGY PILOT PLANT BASIC DESIGN	ENG'G DWG.	KORES	KOREA	2013
400 BAR TEST BENCH PROJECT	VESSEL (HIGH PRESSURE)	SVC	KOREA	2013
SEWAGE TREATMENT EQUIPMENT	VESSEL / H/EX.	BUSAN PORT AUTHORITY (부산항만공사)	KOREA	2013
AUTO CLAVE PROJECT	AUTO CLAVE	Hosiden Vietnam (Bac Giang) Co.,Ltd.	VIETNAM	2013
NCP0104-0119 PROJECT (DNV)	AIR RESERVOIR	HANJIN HEAVY IND.&CON.	PHIL-SUBIC	2013
CFRTPC PROJECT	REACTOR / VESSEL	HANWAH L&C	KOREA	2013
DEG DRYING FACILITY PROJECT	TOTAL	YOUKWANG CHEMICAL CO.,LTD.	KOREA	2013
WARA PRESSURE MAINTENANCE PROJECT	STRUCTURE	KUWAIT OIL COMPANY (K.S.C.)	KUWAIT	2013
GMP PROJECT	REACTOR / VESSEL / H/EX.	NATURALENDO TECH CO.,LTD.	KOREA	2013
S721s PROJECT (DNV)	AIR RESERVOIR	HYUNDAI SAMHO	KOREA	2013
SLUDGE RECOVER PROJECT	STORAGE TANK / RECTOR	NAMHAE CHEMICAL CO.,LTD.	KOREA	2013
VACUUM DEFOAMER PROJECT	REACTOR / VESSEL	KISCO	KOREA	2013
NCP0123s PROJECT (G.L & RINA)	AIR RESERVOIR	HANJIN HEAVY IND.&CON.	PHIL-SUBIC	2013
DUST COLLECTOR PROJECT	VESSEL	KORAIL	KOREA	2014
RESIN PROJECT	VESSEL	SAMSUNG TOTAL	KOREA	2014
SLP CCGT Power Plant PROJECT	VESSEL / FRP VESSEL	SAMSUNG ENGINEERING	KOREA	2014
NCP0113, 114, 128, 130, 134s PROJECT (ABS, GL, DNV)	AIR RESERVOIR	HANJIN HEAVY IND.&CON.	PHIL-SUBIC	2014
WATER HEATING SYSTEM PROJECT	REACTOR / H/EX.	HANSEO CHEMICAL CO., LTD.	KOREA	2014

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
YANBU POWER AND DESALINATION PLANT	SILO / STRUCTURE	SALINE WATER CONVERSION CORPORATION	SAUDI	2014
NTP0137s PROJECT (DNV)	AIR RESERVOIR	HANJIN HEAVY IND.&CON.	PHIL-SUBIC	2014
Premixing PROJECT	VESSEL	OCI Special CO.,LTD.	KOREA	2014
PURIFICATION COLUMN PROJECT	TOWER / REACTOR	SOULBRAIN Co.,Ltd.	KOREA	2014
BCCM PLANT PROJECT	VESSEL	SEAH BESTEEL	KOREA	2014
FIXED BED REACTOR SYSTEM	VESSEL (HIGH PRESSURE)	DAELIM IND. CO.,LTD.	KOREA	2014
MPPU PROJECT	STACK / HEATER	STYROLUTION (Thailand) Co.,Ltd	THAILAND	2014
A1 PROJECT	FILTER	KPX Green Chemical Co.,Ltd.	KOREA	2014
WASTEWATER TREATMENT DRYING FACILITY	DRYER	CHEON-IL CHEMICAL	KOREA	2015
SUPERCONDUCTING FAULT CURRENT LIMITER	VESSEL	KIMM (한국기계연구원)	KOREA	2015
BIOGAS ENERGY PROJECT	VESSEL	UIJEONGBU CITY (의정부시)	KOREA	2015
STEAM GENERATOR PROJECT	HEATER	KEPCO ENG'G&CONST.	KOREA	2015
J-N20 PLANT EXPANSION PROJECT	TOTAL EQUIPMENT	WONIK MATERIALS	KOREA	2015
SRF LN2 SEPARATOR PROJECT	VESSEL (HIGH PRESSURE)	NIER (국립환경과학원)	KOREA	2015
LP&HP HEATER	HEATER (LP&HP)	BESAT POWER PLANT	KOREA	2015
SUNNY PROJECT	DRYER	SOLVAY	KOREA	2015
RO-COMP. CALORIMETER PROJECT	VESSEL	SAMSUNG	KOREA	2015
BAS-514H PROJECT	H/EX.	OCI	KOREA	2015
A PROJECT	REACTOR / VESSEL	ROSS EQUIP.	USA	2015
REACTOR PROJECT	REACTOR	HANSEO CHEM.	KOREA	2015
FFC MIXING SYSTEM PROJECT	VESSEL	DOOSAN	KOREA	2015
DANYANG PLANT PROJECT	VESSEL	HANIL CEMENT CO.,LTD.	KOREA	2016
UK3 PROJECT	BIO REACTOR	HITACHI	JAPAN	2016
EDISON III PROJECT	BIO REACTOR	SAMSUNG BIOLOGICS	KOREA	2016
CP-2 LM-V PROJECT	C.R.T	HUVIS	KOREA	2016
TOTAL PIPING SYSTEM	PIPING	KGS	KOREA	2016
REACTOR PROJECT	REACTOR	HANSEO CHEM.	KOREA	2016
LN2 SEPARATOR PROJECT	VESSEL (HIGH PRESSURE)	NIER	KOREA	2016
FILTER HOUSING PROJECT	FILTER	ELCOM KOREA LIMITED	KOREA	2016
EDISON III PROJECT	BIO REACTOR	SAMSUNG BIOLOGICS	KOREA	2016
S PROJECT	VESSEL / C.R.T / H/EX.	WONIK MATERIALS	KOREA	2016

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
E PROJECT	REACTOR / TOWER / VESSEL	DAELIM	KOREA	2016
100,000 MTY PB2 PLANT	REACTOR	DAELIM	KOREA	2016
HANMI BIOPANT PROJECT	BIO REACTOR	HANMI PHARM CO.,LTD.	KOREA	2016
UK3 PROJECT	BIO REACTOR	HITACHI	JAPAN	2016
50L PURIFICATION SYSTEM	TOTAL	HANSOL CHEMICAL	KOREA	2016
C-PURIFICATION SYSTEM	VESSEL / HEX.	DUKSAN UMT	KOREA	2016
HCDS SYNTHESIZER SYSTEM	VESSEL	DUKSAN UMT	KOREA	2016
HIGH EFFICIENCY CYCLONE SEPARATOR	VESSEL	HANWHA	KOREA	2016
YEOJU PLANT	AIR HEADER	HANIL CEMENT CO.,LTD.	KOREA	2016
DREAM PROJECT	BIO REACTOR	POLUS	KOREA	2017
RO-COMP. CALORI JECTION	VESSEL	SAMSUNG	KOREA	2017
SHIN-KORI NUCLEAR POWER PLANT	VESSEL / TANK	KHNP(한국수력원자력)	KOREA	2017
J-N20 1800MTPY EXPANSION	H/EX.	WONIK MATERIALS	KOREA	2017
CIRCULATING FLUIDIZED BED BOILER 3년 시운전 원자력 3년 시운전 FOR POWER GENERATION	TEST BED	ULSAN UNIVERSITY	KOREA	2017
FLUID REACTOR	TEST BED	KAIST	KOREA	2017
RESIDUE UPGRADING COMPLEX	VESSEL / TANK	S-OIL	KOREA	2017
BIO PLANT NO.2 FACTORY	BIO REACTOR	HANMI PHARM	KOREA	2017
STERILIZED INCUBATOR	BIO REACTOR	충북내수면연구소	KOREA	2017
NTS PROJECT	VESSEL	KUKDO CHEMICAL	KOREA	2017
PRESSURIZATION CHAMBER	TEST BED	SAMSUNG	KOREA	2017
BIO KOMBINAT	REACTOR / H/EX.	GS CALTEX	KOREA	2017
PHEONIX	BIO REACTOR	CELLTRION	KOREA	2017
탈진 폐촉매로부터 최유금속(V,W)회수 및 촉매 소재화	PILOT PLANT	KIGAM (한국지질자원연구소)	KOREA	2018
KORENO KT-Z PROJECT	REACTOR / H/EX.	KRICT(한국화학연구원)	KOREA	2018
HASTELLOY REACTOR /H/EX.	REACTOR / H/EX.	CHEMTROS	KOREA	2018
IMPORT OOMMODITY(BIO)	REACTOR	BIOZEEN	INDIA	2018
HCDS EP FACILITIES PROJECT	VESSEL / SYSTEM	DS TECHNOPIA	KOREA	2018
REACTOR / CONDENSER	REACTOR / H/EX.	DK PHARM	KOREA	2018
PURIFICATION SYSTEM 정제 시스템	VESSEL / PIPING	DUKSAN UMT	KOREA	2018
GAS PURIFIER 정제기	VESSEL	LEADERS & GLOBAL	KOREA	2018

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
전해연마 오토클레이브	AUTOCLAVE	SAMSUNG	KOREA	2018
PILOT SYSTEM	TOTAL	WONIK MATERIALS	KOREA	2018
COGENT PROCESS SCALE SYSTEM	TOTAL	WONIK MATERIALS	KOREA	2018
BIO PROCESS	REACTOR	BIOZEEN	INDIA	2018
RETORT SYSTEM	AUTOCLAVE	STERIFLOW	FRANCE	2018
RETORT SYSTEM	AUTOCLAVE	DTS	CHINA	2018
BIO PROCESS	VESSEL / REACTOR	PACOVSKA	CZECH	2018
SPECIAL H/EX.	SPIRAL H/EX.	STYROLUTION	FRANCE	2018
CURING OF CONCRETE SYSTEM	AUTOCLAVE	ANHUI JINMA	CHINA	2018
RO-COMP. CALORIMETER	VESSEL	SAMSUNG	KOREA	2019
D-2 PROJECT	TOWER / H/EX.	HYUNDAI	KOREA	2019
COALESCE FILTER TEST BED	TEST BED	ADD (국방과학연구소)	KOREA	2019
LHE CRYOSTAT	LOW TEMP.VESSEL	RISP (중이온가속기국속사업단)	KOREA	2019
EGT SENSOR TEST BED	TEST BED	KHNP(한국수력원자력)	KOREA	2019
EGT SENSOR TEST BED	TEST BED	KHNP(한국수력원자력)	KOREA	2019
NEW P PLANT PROJECT	VESSEL(JACKET TYPE)	HITACHI	JAPAN	2019
JPT#1 PROJECT	VESSEL / H/EX.	IPC	KOREA	2019
PF PROJECT	REACTOR	SEKYUNG	KOREA	2019
AIR TANK	HEADER	AVANSYS	KOREA	2019
SR RECOVERY	COLUMN / REBOILER	DAEWOONG	KOREA	2019
ENCHEM POLAND ELETROLYTE	BIO TANK	ENCHEM (POLAND)	POLAND	2019
35KW REFORMING SYSTEM	TOTAL	KR선금	KOREA	2019
PHC1 PROJECT	SILO	HUVIS	KOREA	2019
NEW PROJECT	CRT / VESSEL	세창화학	KOREA	2019
NEO-3 PROJECT	TOWER	HYOSUNG CORPORATION	KOREA	2019
진천 신축공사	VESSEL / H/EX.	CHEMTROS	KOREA	2019
보텍스 원료 제조 공정 설비 공사	VESSEL	BILL KOREA	KOREA	2019
대기오염방지 시설공사	VESSEL	㈜진맥산업	KOREA	2019
KIP-101	VESSEL	경인양행	KOREA	2019
LINING TANK	CRT	DONGWOO FINE-CHEM	KOREA	2019
발효사료 & 액상 미생물 생산 플랜트	REACTOR	충주축산농협	KOREA	2019

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
T-PROJECT	REACTOR / H/EX.	CERES R&D	KOREA	2019
NCK B2 PROJECT	VESSEL	NCK	KOREA	2019
ACTIVATED CARBON 20L REACTOR SYSTEM	REACTOR	HI AIR KOREA	KOREA	2019
MONOMER REACTOR SYSTEM	REACTOR	HANSOL	KOREA	2019
REACTOR 12m ³ SYSTEM	REACTOR / H/EX.	신성소재	KOREA	2019
질소발생기 설치공사	VESSEL	현대자동차-의왕 연구소	KOREA	2019
평택 수지공장 2차설비	VESSEL	JEVSCO	KOREA	2019
PURIFICATION VESSEL	VESSEL	3C FRANCE	FRANCE	2019
RETORT SYSTEM	AUTOCLAVE	CST	CHINA	2019
REACTOR SYSTEM	REACTORS & HEAT EXCHANGER	DAEDAL	CHINA	2019
FERMENTAL SYSTEM	FERMENTAL VESSEL	SATORIOUS	GERMANY	2019
FERMENTAL SYSTEM	FERMENTAL VESSEL	SATORIOUS	INDIA	2019
CIP PROCESS	HEAT EXCHANGERS	BOSH	GERMANY	2019
DRYER SYSTEM	DRYER	HAKO PLAN	JAPAN	2019
REACTOR SYSTEM	REACTORS	HITACHI	JAPAN	2019
RETORT SYSTEM	AUTOCLAVE	DFT	GERMANY	2019
RETORT SYSTEM	AUTOCLAVE	STERIFLOW	FRANCE	2019
BIO PROCESS	CLEAN VESSEL	M-PRO TECH	FRANCE	2019
REACTOR SYSTEM	REACTORS & HEAT EXCHANGER	JINHEUNG	CHINA	2019
AUTO CLAVE	AUTO CLAVE	THEMATEC	JAPAN	2019
CIP PROCESS	HEAT EXCHANGERS	TECH SOLUTION	CHINA	2019
FOOD SYSTEM	PEELER	JUNGWOO	NETHERLAND	2019
HEAT PROCESS	HEAT EXCHANGER	VEOLIA	ITALIA	2019
DRYER SYSTEM	DRYER MACHINE	GEM-BIO	JAPAN	2019
DRYER SYSTEM	DRYER MACHINE	GEM-BIO	JAPAN	2019
REACTOR SYSTEM	REACTORS & HEAT EXCHANGER	DOOYOUNG	CHINA	2019
AUTO CLAVE	AUTO CLAVE	INTERCONSTEC	JAPAN	2019
CIP PROCESS	HEAT EXCHANGERS	EKL	FRANCE	2019
CIP PROCESS	HEAT EXCHANGER	SUNGIL	JAPAN	2019
CIP PROCESS	HEAT EXCHANGER	REYON	GERMANY	2019
CIP PROCESS	HEAT EXCHANGER & CONDENSER	GREEN CROSS	GERMANY	2019

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
MFG-8 WuXi SHIJIAZHANG	BIO TANK	WUXI BIOLOGICS	CHINA	2020
FK3 PROJECT	VESSEL	HITACHI PLANT SERVICE	JAPAN	2020
REACTOR SYSTEM	REACTOR / VESSEL / H/EX.	DONGYANG PNE	KOREA	2020
SR RECOVERY PROJECT	H/EX.	DAEWON BIO	KOREA	2020
PM1 CORRUGATING MEDIUM PAPER	VESSEL	경산제지(주)	KOREA	2020
REACTOR SYSTEM	REACTOR / H/EX.	현대원프리머	KOREA	2020
HONGIK PROJECT	REC.VESSEL	HONGIK	KOREA	2020
영창케미칼 4공장 증설 PROJECT	VESSEL	영창케미칼	KOREA	2020
VERTICAL PLANETARY MIXER	MIXER VESSEL	HANWHA	KOREA	2020
CIP PROCESS	HEAT EXCHANGER & CONDENSER	YOOUNG PHARMACY	GERMANY	2020
STELIRIZER	AUTO CLAVE	JW PHARMACY	FRANCE	2020
AUTO CLAVE	AUTO CLAVE	INTERCONSTEK	CHINA	2020
STEAM PEELER	STEAM PEELER & ACCULULATOR	JUNGWOO	NETHERLAND	2020
STELIRIZER	AUTO CLAVE	THEMATEK	GERMANY	2020
REACTOR	REACTOR & CONDENSER	SAMYANG BIO	CHINA	2020
HEAT EXCHANGER	HEAT EXCHANGER & RECTANGULAR CLAVE	JETEMA	SWEDEN	2020
REACTOR	REACTOR & CONDENSER	SK CHEM	GERMANY	2020
HEAT EXCHANGER	HEAT EXCHANGER & CONDENSATE TANK	TS TECH	CHINA	2020
HEAT EXCHANGER	HEAT EXCHANGER & STORAGE TANK	KOREA UNITED PHARMACY	CHINA	2020
REACTOR	REACTOR	YAMAGEN	JAPAN	2020
CHEMICAL TOWER	TOWER	HANWHA E&C	CHINA	2020
UHT PROCESS	UHT	SAMYOOK FOOD	ITALY	2020
AUTO CLAVE	AUTO CLAVE	BINEX	AUSTRIA	2020
BIO VESSEL	BIO JACKET VESSEL	SK BIO	KOREA	2020
CHEMICAL PROCESS	EVAPORATOR	SAMYANG BIO	KOREA	2020
FERMENTAL PROCESS	FERMENTAL VESSEL	LG CHEMICAL	INDIA	2020
PHARMACY	STEAM GENERATOR	KOREA UNITED PHARM.	CHINA	2020
SEPARATOR PROCESS	SEPARATOR	SAMSUNG BIO	GERMANY	2020
CHEMICAL PROCESS	EVAPORATOR	SAMYANG INNOCHEM	GERMANY	2020
FOOD PROCESS	UHT	SAMYOOK FOOD	ITALY	2020
SCORPION PROJECT	VESSEL / REACTOR	UJL INC.	KOREA	2020

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
DEEP-SEA WIRE TEST	AUTO CLAVE	LS CABLE & SYSTEM LTD.	KOREA	2020
HIGH-PRESSURE & TEMP-PROJECT	VESSEL	KNT	KOREA	2020
CHEMICAL PRODUCT SYSTEM	REACTOR / VESSEL / H/EX	CCCE	KOREA	2020
CHEMICAL LINE SYSTEM	CONDENSER	DS CHEMSOL	KOREA	2020
BATTERY MATERIALS	VESSEL	UMICORE	KOREA	2020
LSP PROJECT	LSP REACTOR	HUVIS	KOREA	2020
MAINTENANCE SYSTEM	H/EX / VESSEL / PIPING	SUWON ENVIRONMENT AGENCY	KOREA	2020
FACTORY EQUIPMENT SYSTEM	REACTOR / RETORT	PEPTRON	KOREA	2020
PROCESS SYSTEM	VESSEL	SUNGEEL HITECH	KOREA	2020
NEW PROCESS PROJECT	C.R.T. / VESSEL	JEVSCO	KOREA	2020
EDISON-3 PROJECT	BIO-TANK / REACTOR	SAMSUNG BIOLOGICS	KOREA	2020
FERMENTER LINE PROJECT	FERMENTOR	CJ CHEILJEDANG CORP	KOREA	2020
POLYMERIZATION PROJECT	SILO	HUVIS	KOREA	2020
TEST EQUIPMENT	VESSEL	KIER	KOREA	2020
CEMENT PROJECT	AIR HEADER	HANIL CEMENT	KOREA	2020
PI 사업부 FACTORY CONSTRUCTION PROJECT	VESSEL / REFLUX TANK	DL E&C	KOREA	2021
GL PROJECT	REACTOR	SUNGIL	CHINA	2021
RO-COMP PROJECT	VESSEL	SAMSUNG ELECTRONICS	KOREA	2021
SLUDGE DRYING FACILITY INSTALLATION PROJECT	DRYER / VESSEL	SEOUL CITY	KOREA	2021
BRP PROJECT	AGING TANK / H/EX	ECOPRO	KOREA	2021
CHEMICAL SYSTEM	REACTOR / TANK	SAKURANOMIYA CHEMICAL	KOREA	2021
DOUST COLLECTOR PROJECT	VESSEL / COLLECTOR	HYUNDAI SAMHO HEAVY INDUSTRIES	KOREA	2021
CHAMBER SYSTEM	HEAT EXCHANGER	BINEX	ITALY	2021
FERMENTER SYSTEM	FERMENTER VESSEL	NOROO HOLDINGS	INDIA	2021
SMT VESSEL PROJECT	REACTOR / VESSEL	PI ADVANCED MATERIALS	KOREA	2021
N-PROJECT	FEED GAS PRE-COOLER	TEMCO	KOREA	2021
SK PROJECT	MIXER TANK	ECELL	KOREA	2021
HELIUM SYSTEM	VESSEL	JH ENG	KOREA	2021
FILTER SYSTEM	VESSEL	TOPS	KOREA	2021
DISTILLATION SYSTEM	HEAT EXCHANGER	YOOUNG PHARM	GERMANY	2021

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
GCM BAG FILTER PROJECT	AIR HEADER	SAMPYO CEMENT	KOREA	2021
ASPHALT RUBBER SYSTEM	HEAT EXCHANGER	POINIX	USA	2021
EDISON-PROJECT	BIO REACTOR / VESSEL	SAMSUNG BIOLOGICS	KOREA	2021
SPECIAL-PROJECT	HEAT EXCHANGER / COOLER	TY PFAUDLER	GERMANY	2021
SK PROJECT	MIXER TANK	ECELL	KOREA	2021
FOOD STERILIZER SYSTEM	AUTO CLAVE	HARIM	GERMANY	2021
SUI-PLANT FILTER HOUSING PROJECT	FILTER HOUSING	AEKYUNG CHEMICAL	KOREA	2021
KOLMAR PROJECT	MIXER TANK	ECELL	KOREA	2021
WASTE WATER BOILER SYSTEM	BOILER PKG	SAMPYO CEMENT	CHINA	2021
DONGIN CHEMICAL BUYEO PLANT PROJECT	REACTOR / H/EX / RECEIVER TANK	DONGIN CHEMICAL	KOREA	2021
H2 SYSTEM	ACCUMULATOR	DOOSAN FUELCELL	CANADA	2021
150HP DISSOLVER PROJECT	BUCKET STRAINER	DAEKWANG HIGHPOLYMER	KOREA	2021
DISTILLATION SYSTEM	HEAT EXCHANGER	EYON PHARM.	GERMANY	2021
H2 COLUMN SYSTEM	COLUMN / TANK	DAEJOO ELECTRONIC MATERIALS	KOREA	2021
NA50 PROJECT	REACTOR	ANP CORP.	KOREA	2021
DISTILLATION SYSTEM	HEAT EXCHANGER	BMI	GERMANY	2021
EVAPORATOR SYSTEM	VESSEL	THE O FOUR	ITALY	2021
BIO PROJECT	WATER TANK	SAMSUNG BIO	GERMANY	2021
FILTER HOUSING PROJECT	FILTER HOUSING	ECOPRO INNOVATION	KOREA	2021
ASPHALT RUBBER SYSTEM	BOILER	POINIX	USA	2021
DISTILLATION SYSTEM	HEAT EXCHANGER	HUONS	GERMANY	2021
N2 CHEMICAL TANK	TANK	KUMHO PETROCHEMICAL	KOREA	2021
SB01 PROJECT	JACKET VESSEL	CELLTRION	KOREA	2021
DISTILLATION SYSTEM	HEAT EXCHANGER	DONG-A	GERMANY	2021
AHF SYSTEM	VESSEL	ENF TECHNOLOGY	CHINA	2021
100ML PROJECT	VESSEL	KUMHO PETROCHEMICAL	KOREA	2021
STEAM CONCRET SYSTEM	DRAIN TANK	GIANT	CHINA	2021
C-2 PROJECT	REACTOR / VESSEL	HYOSUNG	KOREA	2021
P-PROJECT	BIO REACTOR / TANK	DAEWON HEALTHCARE	KOREA	2021
BIO PROJECT	WATER TANK	SAMSUNG BIO	GERMANY	2021
QR01 PROJECT	VESSEL	HANMI	KOREA	2021

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
SEMI-CONDUCTOR SYSTEM	REACTOR	NCK	JAPAN	2021
N2 PKG SYSTEM	VESSEL	CARTOOLS	CHINA	2021
HIGH PRESSURE REACTOR 200L PROJECT	REACTOR	CHEMTROS	KOREA	2021
AIR COMPRESSOR PKG	AIR RECEIVER TANK	BINGGRAE	KOREA	2021
SMELTING PROCESS PROJECT	TOTAL SYSTEM	KIGAM	KOREA	2021
QR02 PROJECT	BIO VESSEL	CELLTRION	KOREA	2021
FORM SPONGE SYSTEM	REACTOR	KM&I	GERMANY	2021
N-PROJECT	BUFFER TANK	TEMC	KOREA	2021
DISTILLATION SYSTEM	HEAT EXCHANGER	HONEX	CHINA	2021
SK PROJECT	MIXER TANK	SK BIO	KOREA	2021
NMP PURIFICATION SYSTEM	TOWER / VESSEL / H/EX	KOKAM	KOREA	2021
DANGJIN THERMAL POWER 1-4 PROJECT	REACTOR / H/EX	KOREA EAST-WEST POWER	KOREA	2021
WASTE WATER BOILER SYSTEM	BOILER	NONGSHIM	CHINA	2021
EC05 PROJECT	BIO VESSEL	CELLTRION	KOREA	2021
FOOD STERILIZER SYSTEM	AUTO CLAVE	LOTTE FOOD	FRANCE	2021
REACTOR SYSTEM	REACTOR / H/EX	DS CHEMSOL	KOREA	2021
FERMENTER SYSTEM	FERMENTER VESSEL	INTRON	GERMANY	2021
EC010 PROJECT	BIO VESSEL	CELLTRION	KOREA	2021
PLASTIC PRODUCTION SYSTEM	HEAT EXCHANGER	INEOS	GERMANY	2021
PG-4 PROJECT	REACTOR / VARNISH TANK	PI ADVANCED MATERIALS	KOREA	2021
DISTILLATION SYSTEM	HEAT EXCHANGER	JANSSSEN	GERMANY	2021
EDISON IV PROJECT	BIO REACTOR	SAMSUNG BIOLOGICS	KOREA	2021
WASTE INCINERATION FACILITY PROJECT	AIR PREHEATER	JEJU PROVINCE DEVELOPMENT	KOREA	2021
CMDL PLANT EXPANSION CONSTRUCTION PROJECT	REACTOR / H/EX / RECEIVER TANK	CMDL	KOREA	2021
DISTILLATION SYSTEM	VESSEL	KOREA UNITED PHARM	CHINA	2022
MACHINING SPOT	P.C.I FEED HOPPER CONE	POSCO	KOREA	2022
SHIPPING PIPING PROJECT	PIPING / TANK	POINIX INC.	KOREA	2022
FERMENTER SYSTEM	VESSEL	KNBS	USA	2022
CHEMICAL SYSTEM	VESSEL / TANK	DONG-A PHARM	KOREA	2022
T-PROJECT	CONDENSER / SEPARATOR	DONGSUNG CHEMICAL	KOREA	2022
REACTOR SYSTEM	VESSEL	MI PHARM	CHINA	2022

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
FOOD STERILIZER SYSTEM	VESSEL	CJ FOOD	USA	2022
V-PROJECT	STORAGE TANK	KTL	KOREA	2022
H2 PSA SYSTEM PROJECT	ADSORBER COLUMN / TANK	EN2CORE TECH	KOREA	2022
UHT PKG SYSTEM	VESSEL	SAMYANG HOLDINGS	GERMANY	2022
VACUUM SYSTEM	VESSEL	KOREA LOST WAX	USA	2022
BIO SYSTEM	FILTER HOUSING / VESSEL	KUKDO CHEMICAL	KOREA	2022
OIL PURIFICATION SYSTEM	TUBE CLUSTER	S-OIL	TAIWAN	2022
WASTE WATER FILTERING SYSTEM	HEAT EXCHANGER	THE O FOUR	ITALY	2022
SOLBRAIN PROJECT	VESSEL / RECOVERY TANK	SOLBRAIN	KOREA	2022
BIO PROJECT	BIO REACTOR	CELLTRION	KOREA	2022
STEAM PJG SYSTEM	VESSEL	FROM BIO	GERMANY	2022
UHT PJG SYSTEM	HEAT EXCHANGER	SAMYANG HOLDINGS	GERMANY	2022
H1 PROJECT	HEAT EXCHANGER	TEMC	KOREA	2022
H/EX MANUFACTURE PROJECT	HEAT EXCHANGER	WELCRON HANTEC	KOREA	2022
VACUUM COOLING SYSTEM	AUTO CLAVE	SHIMADZU	CHINA	2022
E4-PROJECT	C.R.T.	HYOSUNG CHEMICAL	KOREA	2022
STS316L REACTOR SYSTEM	REACTOR / H/EX / RECEIVER TANK	CHEMTROS	KOREA	2022
CMDL PLANT EXPANSION CONSTRUCTION	REACTOR / H/EX	CMDL	KOREA	2022
LG PROJECT	MIXING TANK / VESSEL	LG ENERGY SOLUTION	GERMANY	2022
CHEMICAL SYSTEM	VESSEL	KUMHO MITSUI CHEMICALS, INC.	KOREA	2022
AIR FILTER PROJECT	FILTER HOUSING	SAMSUNG DISPLAY	KOREA	2022
DISTILLATION SYSTEM	HEAT EXCHANGER	STGEN BIO	GERMANY	2022
REACTOR SYSTEM	REACTOR	LG CHEM	SWITZERLAND	2022
STS304 PROJECT	HOT OIL TANK / RECEIVER TANK	CHEMTROS	KOREA	2022
BIO PROJECT	BUFFER PREP TANK / BIOREACTOR	CELLTRION	KOREA	2022
KIA MOTORS HARDENER TANK PROJECT	STORAGE TANK	KIA CORP	KOREA	2022
DISTILLATION SYSTEM	HEAT EXCHANGER	DM BIO	GERMANY	2022
SINGLE USE MIXER SYSTEM	DOUBLE JACKET VESSEL	DONG-A PHARM	KOREA	2022
REACTOR PROJECT	VESSEL / TANK / DRUM / SEPARATOR	META BIOMED	KOREA	2022
DISTILLATION SYSTEM	HEAT EXCHANGER	RF BIO	GERMANY	2022
DAEJEON PLANT CONSTRUCTION PROJECT	REACTOR / H/EX / RECEIVER TANK	DONGYANG	KOREA	2022

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
PG5 PROJECT	REACTOR	PI ADVANCED MATERIALS	KOREA	2022
DISTILLATION SYSTEM	STERILIZER	BINEX	AUSTRIA	2022
MDI PLANT PROJECT	VESSEL	KUMHO MITSUI CHEMICALS CORP	KOREA	2022
HEAT EXCHANGER SYSTEM	HEAT EXCHANGER	METHISON GAS	USA	2022
CO2 PSA SYSTEM PROJECT	STRUCTURE / PIPING / VESSEL	HYUNDAI ROTEM	KOREA	2022
LITHIUM SYSTEM	VESSEL	POSCO HOLDINGS	GERMANY	2022
BIO PROJECT	BIO REACTOR / STORAGE TANK	CELLTRION	KOREA	2022
LGESOC2 1P PROJECT	COOLER / REBOILER / H/EX	LG ENERGY SOLUTION	KOREA	2022
HSPG PROJECT	REACTOR / VESSEL	P&O CHEMICAL	KOREA	2022
MH-PROJECT	C.R.T.	KUKDO CHEMICAL	KOREA	2022
EPOXY PILOT INSTALLATION PROJECT	VESSEL	KUMHO P&B CHEMICALS	KOREA	2022
POSCO CONTINENTAL	VESSEL	POSCO HOLDINGS	GERMANY	2022
WASTEWATER TREATMENT FACILITY PROJECT	VESSEL	HYUNDAI STEEL	KOREA	2022
PITK PROJECT	REACTOR / VESSEL	DAEWON PHARMACEUTICAL	KOREA	2022
NORTHVOLT D.S-3	BINDER MIXER / STORAGE TANK	NORTHVOLT	KOREA	2022
POLY-E PROJECT	VESSEL / FILTER HOUSING	SOLBRAIN	KOREA	2022
OXO RTO-PROJECT	RTO / STACK	LG CHEMICAL	KOREA	2022
BIO PROJECT	BIO VESSEL	SAMSUNG BIOLOGICS	KOREA	2022
DRYER PKG SYSTEM	VESSEL	TAEKWANG	JAPAN	2022
POSCO LITHIUM SOLUTION	HEAT EXCHANGER	POSCO HOLDINGS	GERMANY	2022
T20 PROJECT	REACTOR	LG CHEM.	KOREA	2022
NH3 VPSA PROJECT	TOTAL EQUIPMENT	KIER	KOREA	2022
J-PROJECT	VESSEL	KIER	KOREA	2022
LINE-PROJECT	AIR FLOTATION	LOTTE CHEMICAL	KOREA	2022
OCI STC PROJECT	REACTOR / H/EX	OCI	KOREA	2022
POLYMER PROJECT	STORAGE TANK	LG CHEMICAL	KOREA	2022
V.E. PROJECT	WATER COOLER	LOTTE CHEMICAL	KOREA	2022
DUST PNEUMATIC CONVEYING SYSTEM	TANK / VESSEL	POSCO	KOREA	2022
VAPOR BOILER SYSTEM	BOILER	SAMSHIN	USA	2022
DISTILLATION SYSTEM	HEAT EXCHANGER	DONG-A PHARM.	GERMANY	2022
PISTON PRESSURE VESSEL	VESSEL	SK GEO CENTRIC	KOREA	2022
POLY-E PROJECT	STORAGE TANK	SOLBRAIN	KOREA	2022

NAME OF PROJECT	DESCRIPTION	CLIENT	SITE	YEAR
EDISON PROJECT	BIO REACTOR	SAMSUNG BIOLOGICS	KOREA	2023
AU PROJECT	AUTOCLAVE / H/EX	CIS CHEMICAL	KOREA	2023
STEAM COOKER SYSTEM	VESSEL	KAJIWARA	JAPAN	2023
STEAM BOILER PKG	STEAM BOILER	KBR	USA	2023
T1 PROJECT	EVAPORATOR	LG CHEM	KOREA	2023
GWANGJU SAMSUNG PROJECT	AIR HEADER	SAMSUNG ELECTRONICS	KOREA	2023
REACTOR SYSTEM	REACTOR	CMDL	KOREA	2023
BIO PROJECT	HOLD VESSEL	SAMSUNG BIOLOGICS	KOREA	2023
UHT SYSTEM	HEAT EXCHANGER	GEA TDS	GERMANY	2023
CHEMICAL SYSTEM	VESSEL	MIWON CHEM	USA	2023
BPA POWDER PROJECT	TRANSPORTER	KUMHO P&B CHEMICALS	KOREA	2023
QL-PROJECT	C.R.T.	CHEMTRONICS	KOREA	2023
CHEMICAL PROCESS	DRYER	CIS CHEMICAL	GERMANY	2023
VESSEL PROJECT	H/EX / AUTOCLAVE / REACTOR	HUMEDIX	KOREA	2023
LITHIUM SYSTEM	VESSEL	POSCO	ITALY	2023
LITHIUM SYSTEM	VESSEL	SUNGIL HITEK	CHINA	2023
DISTILLATION SYSTEM	HEAT EXCHANGER	STGEN BIO	GERMANY	2023
DS-1 PROJECT	REACTOR / BUFFER TANK	NORTHVOLT	KOREA	2023
SEJONG PLANT PROJECT	VESSEL	KCC GLASS CORP	KOREA	2023
CHEMICAL SYSTEM	HEAT EXCHANGER	HOSOKAWA	JAPAN	2023
CHEMICAL SYSTEM	EVAPORATOR	WUXI LIMA	CHINA	2023
LITHIUM SYSTEM	VESSEL	POSCO	TURKIYE	2023
BIO PROJECT	BIO VESSEL	DAEWON PHARMACEUTICAL	KOREA	2023
GLASS FIBER NO.2 PROJECT	VESSEL	KCC GLASS CORP	KOREA	2023
INSTALLATION OF USER TANK PROJECT	C.R.T.	KUMHO MITSUI CHEMICALS	KOREA	2023
BOILER SYSTEM	BOILER	ENDORFF	USA	2023
HF PH2 PROJECT	TOWER / REACTOR / STEAM HEADER	ENF TECHNOLOGY	KOREA	2023
BIO SYSTEM	VESSEL	TDS	GERMANY	2023
CHEMICAL PROCESS	STEAM HEADER	CIS CHEMICAL	KOREA	2023
REACTOR SYSTEM	REACTOR	CHEMTROS	KOREA	2023
A-PROJECT	VESSEL / MIXER / DRUM	SAMSUNG SDI	KOREA	2023

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