



S-Tank Engineering Co., Ltd.



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□ Introduction

S-Tank Engineering Co., Ltd. (STE),

a spun-off company from Samsung Heavy Industries Co., Ltd., Korea (SHI), was founded in 2002, by a group of specialists in the field of Storage Tank Business who had been in charge of Tank Business division in SHI. In addition, SHI grants to S-Tank Engineering the good will, rights to use patents, records of performance and data of referenced projects and rights of possession and use of other relevant materials of Tank Business.

STE is a major player in the turnkey with design, engineering, procurement, construction and commissioning of atmospheric storage tanks, cryogenic storage tanks, high pressure spheres, refinery tank farms, tank terminals with associated piping, electrical & instrumentation for process plants for the refinery, petrochemical, fertilizer, power and steel industries as well as other infrastructure projects.

We are capable of performing all kinds of tank projects without any difficulty as we have the specialists as well as patented software and technologies, which are granted to us officially from SHI.

STE, an ISO 9001, ISO 14001, ISO 45001 certified company, focuses on spirit of contributing to the development of Oil and Gas plants globally and commitment to our customer's interests providing advanced technology and high quality services.



Company Name and Address

Company Name : S-Tank Engineering Co., Ltd. [www.s-tank.com]

Establishment Date : January 01, 2002

fice 12th floor, Nex Zone, Changwon SK Technopark, 50, Wanam-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Korea 51573

Tel: +82-55-239-9300 / Fax: +82-55-239-9400

Seoul Office 10th floor, Ilsin Bldg., 38, Mapo-daero, Mapo-gu, Seoul, Korea 04174

Tel: +82-2-780-1249 / Fax: +82-2-780-1243

Haman Factory 318, Beopsu-ro, Beopsu-myeon, Haman-gun,

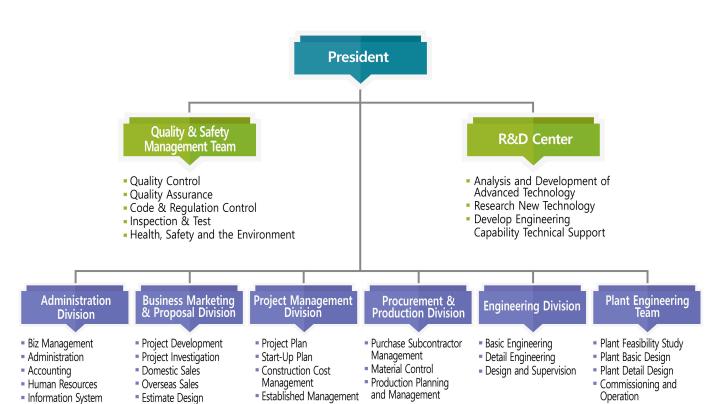
Gyeongsangnam-do, Korea 52056

Tel: +82-55-584-9340 / Fax: +82-55-583-2400

☑ CEO & President : Mr. Nak-Jong Kim

Organization

Education



Construction Planning

Construction Technology

Construction Estimation

and Operation

Site SupervisionConstruction ManagementConstruction Contract

Technical Proposal

Contract Control

Proposal Management

Customer Management

www.s-tank.com 05

■ Business Field

We design our products in accordance with major international codes like ASME, API 620/625 & 650, 653, EN14620, EN14015, ANSI, JIS, KS, BS, ISO, AWWA, NACE, NFPA, UBC, IBC, AWS, ASCE, etc. and we cover a wide range of materials.

Storage Tank & System

- Refinery Tank Farm
- Storage Tank Terminal
- Cryogenic Tank Terminal
- Gas Plant
- LNG Terminal

Atmospheric Storage Tank

- CRT/CFRT
- DRT/DFRT
- Floating Roof Tank
- Aluminum Dome Tank
- Welded Steel Tank

Pressurized Tank

- Spherical Tank
- Double Spherical Tank
- LPG Mounded Vessel

Cryogenic Storage Facility

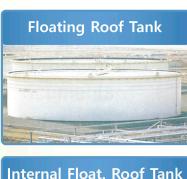
- Propane & Butane
- NH3 & Propylene
- Ethylene, Methanol
- LO2, LN2, LAr
- LNG



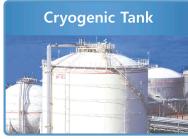
Cone, Dome Roof Tank













Business Activity

Engineering

■ Basic Engineering

- Feasibility Study
- Material/Heat Balance
- PFD & PID
- Process Data Sheet
- Equipment Data Sheet
- First End Engineering Design
- E & I Data Sheet
- Control System
- Plot Plan & Piping Arrangement

■ Detail Design

- Strength Calculation & Stress Analysis
- Civil Design
- MTO & BOQ
- Fabrication Dwg
- Construction Dwg
- Purchase Specification
- Procedure & Plan
- Others

Project Management

Project Planning

- Basic Project Plan
- Master & Detail Scheduling
- Cost Estimation

■ Coordination & Control

- Progress Control
- Schedule Control
- Cost Control

Procurement

- Steel plate and other shape material
- Tank Facilities
- Process Equipments
- Control Facilities & Bulk Materials
- Procurement Expediting

Others

- Quality Plan Support
- Risk Management
- Resource Management

Fabrication & Construction

- Tank Proper & Accessories
- Piping & Rack
- Electrical & Instrumentation
- Fabrication Documents
- Construction Documents
- QA/QC Documents
- Test Procedure
- Pre-commissioning & Commissioning

Supervision & Consulting

- Fabrication & Construction
- Inspection & Test
- Quality Control
- Pre-commissioning & Commissioning Assistance
- Site Management

☐ Global Experiences of S-Tank Engineering





OVERSEAS CUSTOMERS

- ▶ PT. Pertamina (Indonesia)
- ▶ PT. Perta-Samtan Gas (Indonesia)
- ▶ PT. Wilmar (Indonesia)
- ► HESS (Indonesia)
- ► Cirebon Energi Prasarana (Indonesia)
- ▶ PT. Amman Mineral Industri (Indonesia)
- ▶ PT. Wijaya Karya (Indonesia)
- PT. Rekayasa Industri (Indonesia)
- ▶ PT. Tripatra Engineering and Construction (Indonesia)
- ▶ PT. JGC Indonesia (Indonesia)
- ▶ Petro Vietnam (Vietnam)
- ► Longson Petrochemical (Vietnam)
- ► NSRP LLC (Vietnam)
- Sarawak Petchem (Malaysia)
- ▶ Petronas (Malaysia)
- PTT (Thailand)
- ▶ PTT Global Chemical (Thailand)
- ► Sian Cement Group (Thailand)
- ▶ DOW (Thailand)
- ▶ Jurong Aromatics Corporation (JAC) (Singapore)
- ► Essar (Singapore)
- ▶ PEC LTD. (Singapore)
- ▶ Bashundhara LP Gas Limited (Bangladesh)
- ▶ United Group (Bangladesh)
- ► Energypac Power Generation (Bangladesh)

- JGC (Japan)
- ► Chiyoda Corporation (Japan)
- ▶ Mitsubishi Heavy Industries (Japan)
- ► Toyo Engineering (Japan)
- ► Petron Corporation (Philippines)
- ► San Buenaventura Power Plant (SBPL) (Philippines)
- ► Taganito TPAL Nickel Corporation (Philippines)
- ▶ JGC Pilippines, Inc. (Philippines)
- ► Sinopec (China)
- Qatar Petroleum (QP) (Qatar)
- ► SMC (Oman)
- ▶ Duqm Refinery & Petrochemical Industries Company (Oman)
- ► Sadara Chemical Company (Saudi Arabia)
- ► ADNOC (UAE)
- ► GASCO (UAE)
- ► Takreer (UAE)
- ► SCOP (Iraq)
- ► Eni Iraq B.V (Iraq)
- ► Kuwait Oil Company (KOC) (Kuwait)
- ▶ National Iranian Oil Company (NIOC) (Iran)
- ▶ Jam Petrochemical Company (JPC) (Iran)
- ► Arya Sasol Polymer (Iran)
- ► Kermanshah Petrochemical Industries Company (KPIC) (Iran)
- Namavaran Delvar Engineering and Construction (NDEC) (Iran)
- ▶ Lukoil (Russia)
- Lukoil Uzbekistan Operating Company (Uzbekistan)
- ▶ Uz-Kor Gas Chemical LLC (Uzbekistan)



- SOCAR (Azerbaijan)
- ► Turkmengaz (Turkmenistan)
- ► TechnipFMC plc (France)
- ► Air Liquied (France)
- ▶ PDH Polska (Poland)
- ▶ YPFB (Bolivia)
- ► Chevron Nigeria Limited (CNL) (Nigeria)
- ► Sonatrach (Algeria)
- ► Sonelgaz Algerian Power Company (Algeria)
- ▶ Energia Natural Dominicana (Dominican Republic)
- ▶ VTTI (Ghana)
- ► Cirrus Oil (Ghana)

KOREAN CUSTOMERS

- ▶ SK Gas
- ▶ SK Ecoplant
- ▶ SK Engineering
- ▶ SK Innovation
- ▶ LG Chemical
- ▶ S-OIL
- ▶ LOTTE Chemical
- ▶ LOTTE Fine Chemical
- ▶ LOTTE E&C
- ▶ Hanhwa
- Hanhwa Total
- ▶ Hanhwa Corporation E&C Div.



- ▶ E1
- HYOSUNG
- ▶ GS Energy
- ▶ GS Caltex
- ▶ GS E&C
- ► HYUNDAI Oilbank
- ► HYUNDAI E&C
- ► HYUNDAI Engineering
- ► HYUNDAI Heavy Industry
- ► SAMSUNG C&T
- ► SAMSUNG E&A
- ► SAMSUNG Heavy Industry
- ▶ POSCO
- ▶ POSCO E&C
- ▶ DL E&C
- ▶ Daewoo E&C
- Byucksan Engineering
- ▶ CJ Group
- ▶ ISU E&C
- ▶ Incheon Green Energy (IGE)
- ▶ Jeongil Stolthaven Ulsan
- ► Kumho Petrochemical
- ► Korea National Oil Company (KNOC)
- ► Korea Petrochemical industry
- ▶ KCC
- ▶ Namhae Chemical
- ► Yeochun NCC (YNCC)

■ Factory and Facility

→ 1. Haman Factory









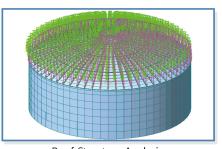




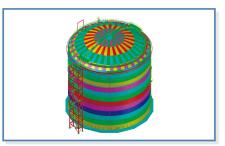
→ 2. Engineering Infrastructure



Engineering Software & Tools



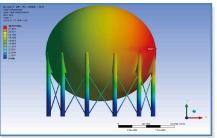
Roof Structure Analysis



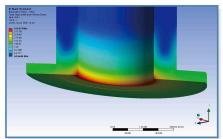
Double Wall Tank 3D Modeling



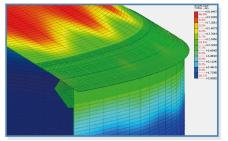
Spherical Tank 3D Modeling



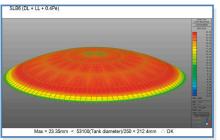
Spherical Tank Seismic Analysis



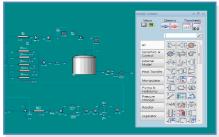
Nozzle Strength Analysis



DRT Compression Ring Analysis



Roof Structure Analysis



Aspen Hysys Modeling

→ 3. Automatic Welding



Horizontal Automatic Welding



Bottom Automatic Welding



Vertical Automatic Welding



Corner Automatic Welding

■ Developed Technology

→ 1. Patented Technology

N0	Description	Application	Year of Registration	Remarks
1	Liquefied hydrogen storage tanks (vessel saddle)	Tank Design	2023	Patent No. 10-2513985
2	Liquefied hydrogen storage tanks (spherical tank & vessel support)	Tank Design	2021	Patent No. 10-2315489
3	API 650 seismic/external design program of storage tanks	Tank Design	2015	C-2015-013493 C-2015-027530
4	Stacking apparatus for transporting piece of spherical tank	Tank Module Transportation	2015	10-1563571
5	Calculation program for venting atmospheric tanks	Tank Design	2010	Patent No. 2010-01-123-008775
6	Anchor strap calculation program for cryogenic tanks	Cryogenic Tank Design	2010	Patent No. 2010-01-123-008774
7	Optimal design program for cryogenic double wall tanks	Cryogenic Tank Design	2008	Patent No. 2008-01-123-002300
8	Calculation program for allowable external loads on tank shell openings	Tank Design	2007	Patent No. 2007-01-123-001369
9	Strength calculation program for spherical tanks	Spherical Tank Design	2004	Patent No. 2004-01-199-005151
10	Strength calculation program for large diameter floating roof tanks	Floating Roof Tank Design	2004	Patent No. 2004-01-199-005150
11	Boil-off gas calculation program for cryogenic tanks	Cryogenic Tank Design	2003	Patent No. 2003-01-12-3230
12	Program for shell plate development/cutting of spherical tanks	Spherical Tank Design	2003 2015	R2003-01-12-73 C-2015-003540
13	Support device for Ball tank transportation	Tank Module Transportation	2009	Patent Application No. 10-2009-0100129
14	Roof structure erection technologies & devices for floating roof tanks	Tank Erection	1996	Patent No. 0182843
15	Automatic welding technologies & devices for the erection of large diameter tanks	Tank Erection	1996	Patent No. 0293914

→ 2. Other Technology

N0	Description	Application	Remarks
1	Automatic Drawing Program for Cylindrical Tank Proper & Nozzles	CRT/DRT/FRT	
2	Automatic Drawing Program for Spherical Tank Proper & Nozzles	Spherical Tank	
3	Strength Calculation Program for Storage Tanks	All Tanks Type	
4	Cutting Plan Program	Tank Design & Fabrication	for Material Purchasing & Fabrication
5	Tank Roof Air Raising with Sealing Device	Tank Construction	
6	Tank Stability Analysis	Tank Design	
7	Automatic Welding Machine for Tank	Tank Construction	

■ Tank View

Fluid	Content	Tank Type
Gas	Cokes Oven Gas Blast Furnace Gas LPG LNG Nitrogen Oxygen	
Liquefied Gas	Ammonia Propylene Propane Butadiene Butane Ethylene	
	LNG Oxygen Nitrogen	
	Hydrogen Argon	
Liquid	Gasoline Diesel	
	Crude Oil Heavy Oil	
	Water	
Legend		
	Adiabatic Vacuum Tank	Gas Holder Spherical Tank Cylindrical Tank Double Wall Spherical Tank
	Double Wall Dome Roof Tank	Under Ground Floating Roof Cone/Dome Roof Tank Roof Tank

Attachment

- 1 Company registration certificate issued by the Korean Government
- Pactory registration certificate issued by the Korean Government
- 3 Certificate for the construction of industrial equipment issued by the Korean Government
- 4 Construction certificate for gas facilities
- 5 Construction certificate for machinery facilities
- 6 Construction certificate for steel structure
- 7 Construction certificate for industrial & environmental facilities
- 8 Certificate of Korea Engineering & Consulting Association
- Oertification of International Contractor
- 10 Certificate of research and development center issued by the Korean Government
- 11 Certificate of ISO 9001
- Certificate of ISO 14001
- Certificate of ISO 45001
- Certificate of ASME (U & U2) issued by American Society of Mechanical Engineering.
- 15 Certificate of Authorization by National Board
- 16 Membership of the American Petroleum Institute

□ Attachment #1 ~ #4









■ Attachment #5 ~ #8

[별지 제3호 서식]

건설 업 등록 중

1. 업종 및 주력분야: 기계살비·가난광시업(주력분야기계살비공사,가난시설공사(제1종))

2. 등록번호: 창원2010-10-09

3. 상 호: 에스템크엔지니어링(주)

4. 대 표 자 : 김낙종

5. 주된 영업소 소제지 : 창원시 생산구 완압로 50 백스존 12흥(상산동, 에스케이테크노파크)

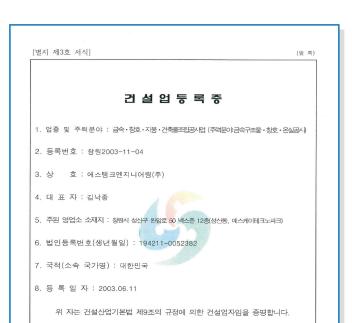
6. 법인등록번호(생년월일) : 194211-0052382

7. 국적(소속 국가명) : 대한민국

8. 등록 일 자 : 2010.05.31
위 자는 건설산업기본법 제9조의 규정에 의한 건설업자임을 증명합니다.

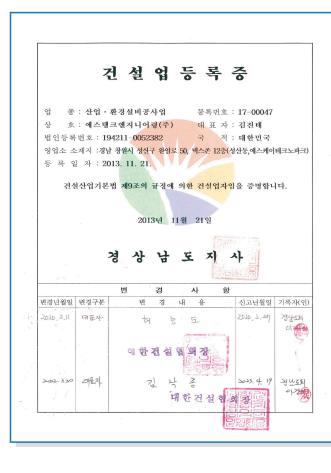
2023년 9월 5일

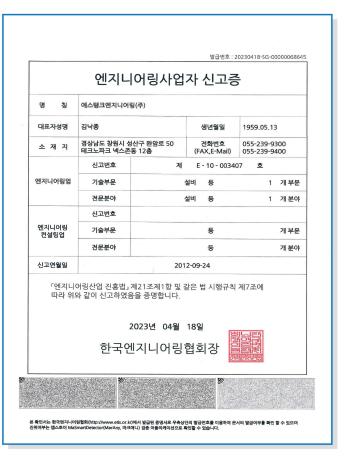
경상남도 창원시장



2023년 9월 5일

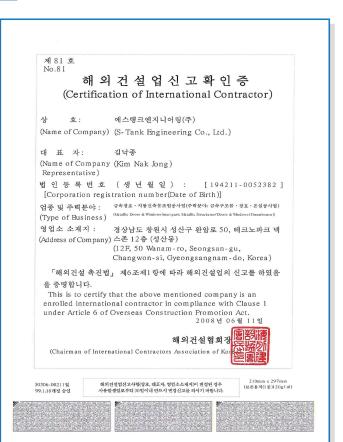
경상남도 창원시장 (인)



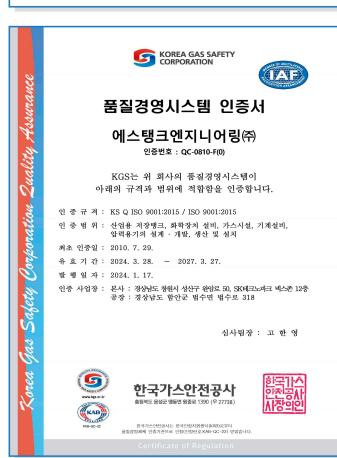


TANE

■ Attachment #9 ~ #11









■ Attachment #12 ~ #13





환경경영시스템 인증서

에스탱크엔지니어링㈜

인증번호 : EC-0141-E(0)

KGS는 위 회사의 환경경영시스템이 아래의 규격과 범위에 적합함을 인증합니다.

인 중 규 격: KS I ISO 14001:2015 / ISO 14001:2015

인 중 범 위: 산업용 저장탱크, 화학장치 설비, 가스시설, 기계설비, 압력용기의 설계·개발, 생산 및 설치

최초 인증일 : 2012. 3. 28.

유효기간: 2024. 3. 28. ~ 2027. 3. 27.

발 행 일 자 : 2024. 1. 17.

인증 사업장 : 본사 : 경상남도 창원시 성산구 완압로 50, SK테크노파크 넥스존 12층 공장 : 경상남도 합안군 법수면 법수로 318

심사팀장 : 고 한 영







한국가스안전공사는 한국인정지원센터(KAB)로부터 환경경열체제 인증기관으로 인정(인정번호:KAB-EC-15) 받았습니다.

KOREA GAS SAFETY CORPORATION



Certificate of **Environmental Management System** S-Tank Engineering Co., Ltd

Issue No : EC-0141-E(0)

KGS certifies that The Environmental Management System of the above organization has been assessed and found to be in accordance with the requirements of the standard and scope of certification detailed below

Standard: KS I ISO 14001:2015 / ISO 14001:2015

Scope: Design.Development, Manufacture, Installation of Industrial Storage Tanks, Chemical/Gas/Mechanical Equipments and Pressure Vessels

Initial certification date: 2012. 3. 28. Valid period: 2024, 3, 28, ~ 2027, 3, 27,

Issue date: 2024, 1, 17,

Site of certificate

Head office: 12th Floor, SK Techno Park Next Zone, Wanam-ro 50, Seongan-gu, Changwon-si, Gyeongsangnam-do, Korea Haman Factory: 318, Beopsu-ro, Beopsu-myeon, Haman-gun, Gyeongsangnam-do, Korea

Lead Assessor: Ko Hanyoung



KGS

TAS SAFETY CORPORATION

THOUSE THE PROPERTY CORPORATION 1390 Wonjung-ro, Maengdong-myeon, Eumseong-gun, Chungcheongbuk-do, Korea



KOREA GAS SAFETY CORPORATION



안전보건경영시스템 인증서

에스탱크엔지니어링㈜

인증번호 : SC-0087-B(0)

KGS는 위 회사의 안전보건경영시스템이 아래의 규격과 범위에 적합함을 인증합니다.

인 중 규 격: KS Q ISO 45001:2018 / ISO 45001:2018

인 중 범 위 : 산업용 저장탱크, 화학장치 설비, 가스시설, 기계설비, 압력용기의 설계 · 개발, 생산 및 설치

최초 인증일 : 2021, 1, 20,

유효기간: 2024.1.20. ~ 2027.1.19.

발 행 일 자 : 2024. 1. 17.

인증 사업장 : 본사 : 경상남도 창원시 성신구 완암로 50, SK테크노파크 비스존 12층 공장 : 경상남도 함안군 법수면 법수로 318

심사팀장 : 고 한 영







한국가스만전공사는 한국인정지원센터(KAB)로부터 안전보건경영체제 인증기관으로 인정(인정번호:KAB-OC-30) 받았습니다

KOREA GAS SAFETY CORPORATION



Certificate of Health & Safety Management System S-Tank Engineering Co., Ltd

Issue No : SC-0087-B(0)

KGS certifies that The Health & Safety Management System of the above organization has been assessed and found to be in accordance with the requirements of the standard and scope of certification detailed below

Standard: KS Q ISO 45001:2018 / ISO 45001:2018

Design.Development, Manufacture, Installation of Scope: Industrial Storage Tanks, Chemical/Gas/Mechanical Equipments and Pressure Vessels

Initial certification date: 2021. 1. 20.

Valid period: 2024, 1, 20, ~ 2027, 1, 19.

Issue date: 2024, 1, 17,

Site of certificate

Head office: 12th Floor, SK Techno Park Next Zone, Wanam-ro 50, Seongan-gu, Changwon-si, Gyeongsangnam-do, Korea Haman Factory: 318, Beopsu-ro, Beopsu-myeon, Haman-gun, Gyeongsangnam-do, Korea

Lead Assessor: Ko Hanyoung









Korea Gas Safety Corporation has been designated by Korea Accreditation Board as a HSNS(Health & Safety Management System) certification body.(Licence No.:KAB-OC-30

■ Attachment #14 ~ #16



The American Society of Mechanical Engineers

CERTIFICATE OF AUTHORIZATION

The named company is authorized by The American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the ASME Single Certification Mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with the ASME Single Certification Mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY:

S-Tank Engineering Co., Ltd. 318, Beopsu-ro, Beopsu-myeon Haman-Gun, Gyeongsangnam-Do, 52056 Republic of Korea

SCOPE:

Manufacture of pressure vessels at the above location and field sites controlled by the above location (This authorization does not cover impregnated graphite)

AUTHORIZED:

May 31, 2024

EXPIRES:

May 31, 2027

CERTIFICATE NUMBER:

35829

Richal B. Cym

Board Chair, Conformity Assessment





The American Society of Mechanical Engineers

CERTIFICATE OF AUTHORIZATION

The named company is authorized by The American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the ASME Single Certification Mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with the ASME Single Certification Mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY:

S-Tank Engineering Co., Ltd. 318, Beopsu-ro, Beopsu-myeon Haman-Gun, Gyeongsangnam-Do, 52056 Republic of Korea

SCOPE:

Manufacture of Class 1 and Class 2 pressure vessels at the above location and field sites controlled by the above location

AUTHORIZED:

May 31, 2024

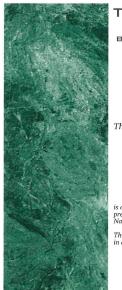
EXPIRES:

May 31, 2027 35830

CERTIFICATE NUMBER:

Richal B. Cym





THE NATIONAL BOARD

BOILER & PRESSURE VESSEL INSPECTORS

Certificate of Authorization to Register

This is to certify that

S-Tank Engineering Co., Ltd. 318, Beopsu-ro, Beopsu-myeon Haman-Gun, Gyeongsangnam-Do, 52056 Republic of Korea

is authorized to apply the "NB" mark and register boilers, pressure vessels or other pressure retaining items with the National Board.

The scope of Authorization is limited to items manufactured in accordance with:

ASME Designator(s):

Issue Date: Revision Date:

May 21, 2015

This Certificate of Authorization to Register will remain in effect as long as the manufacturing organization holds a valid Certificate of Authorization issued by the American Society of Mechanical Engineers.

Executive Director





S-Tank Engineering Co., Ltd.

is a 2008 Member of the American Petroleum Institute

We keep America **going strong** America's Oil and Natural Gas Industry



• 본 사 [Head Office]

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