

S-Tank Engineering
Company Profile



S-Tank Engineering Co., Ltd.



Contents

Introduction	04
Company Name and Address	05
Organization	05
Business Field	06
Business Activity	07
Global S-Tank Engineering	08
Developed Technologies	09
Factory & Facilities	10
Tank View	12
Attachments	13

■ 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, OHSAS 18001 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

Company Address Head Office

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: +82-2-780-1242 & 1249 / Fax: +82-2-780-1243

318, Beopsu-ro, Beopsu-myeon, Haman-gun, Gyeongsangnam-do, Korea 52056

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

Factory 2

1314 Daesa-ri, Daesan-myeon, Haman-gun,

Gyeongsangnam-do, Korea 52010

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

108-318, Sapyeong-ro, Nam-gu, Ulsan, Korea 44785 Tel: +82-52-258-6334 / Fax: +82-52-256-6337

CEO & President : Mr. Nung-Do Heo

Organization

President

Quality & Safety Management Team

- Quality Control
- Quality Assurance
- Code & Regulation Control
- Inspection & Test
- Health, Safety and the Environment

R&D Center

- Analysis and Development of Advanced Technology
- Research New Technology
- Develop Engineering Capability Technical Support

Administration Division

- Biz Management
- Administration
- Accounting
- Human Resources
- Information System
- Education

Business Marketing & Proposal Division

- Project Development
- Project Investigation
- Domestic Sales
- Overseas Sales
- Estimate Design
- Technical Proposal
- Proposal Management
- Contract Control
- Customer Management

Project Management Division

- Project Plan
- Start-Up Plan
- Construction Cost Management
- Established Management and Management
- Construction Planning and Operation
- Construction Technology
- Construction Estimation
- Site Supervision
- Construction Management
- Construction Contract

Procurement & Production Division **Engineering Division**

- Purchase Subcontractor Management
- Material Control
- Production Planning
- Basic Engineering Detail Engineering
- Design and Supervision
- Plant Feasibility Study
 - Plant Basic Design
 - Plant Detail Design

Plant Engineering

- Commissioning and Operation

■ 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

Spherical Tank

- Gas Plant
- LNG Terminal

Atmospheric Storage Tank

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

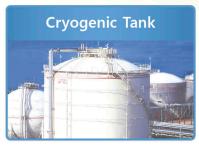
Pressurized Tank

- Spherical Tank
- Double Spherical Tank
- LPG Mounded Vessel

Cryogenic Storage Facility

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

Refinery Tank Farm Cone, Dome Roof Tank **Floating Roof Tank** Storage **Tank System** Internal Float. 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 S-Tank Engineering



- Thailand (S-Tank Thailand)
- Malaysia (S-Tank Malaysia Sdn Bhd)
- Singapore (S-Tank Singapore Pte. Ltd)
- Indonesia (PT S-Tank Indonesia)
- Philippines (S-Tank Philippines)
- UAE (S-Tank Engineering Co., Ltd.)

Vietnam (Project Office)

Oman (S-Tank Al Alamia LLC)

Bangladesh

Taiwan

China

Iran

Iraq

Poland

Middle East

CIS & Other Countries

- Kuwait
- Yemen
- Qatar
- Egypt
- Saudi Arabia

- Uzbekistan
- Bolivia

- Turkmenistan
- Chile

- Kazakhstan - Azerbaijan

- **Africa**
 - Algeria
- Nigeria
- Ghana

■ Developed Technologies

→ 1. Patented Technologies

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

→ 2. Other Technologies

N0	Description	Application	Remark
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	Electrode Consumable Calculation Program	All Tanks Type	
5	Cutting Plan Program	Tank Design & Fabrication	for Material Purchasing & Fabrication
6	Auto - Nesting Program	Tank Design & Fabrication	for Material Purchasing & Fabrication
7	Tank Roof Air Raising with Sealing Device	Tank Construction	
8	Tank Stability Analysis	Tank Design	
9	Automatic Welding Machine for Tank	Tank Construction	

■ Factory and Facilities

→ 1. Haman Factory











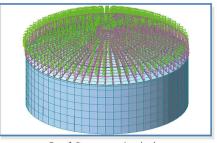


■ Factory and Facilities

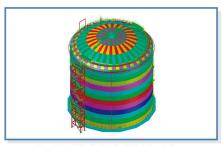
→ 2. Engineering Infrastructure







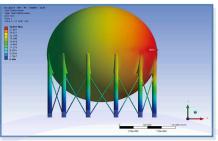
Roof Structure Analysis



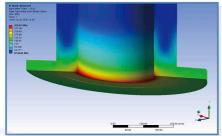
Double Wall Tank 3D Modeling



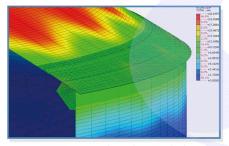
Spherical Tank 3D Modeling



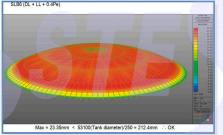
Spherical Tank Seismic Analysis



Nozzle Strength Analysis



DRT Compression Ring Analysis



Roof Structure Analysis



Aspen Hysys Modeling

3. Automatic Welding Facilities



Horizontal Automatic Welding



Bottom Automatic Welding



Vertical Automatic Welding



Corner Automatic Welding

■ Tank View

Fluid	Contents	Tank type
Gas	Cokes Oven Gas Blast Furnace Gas LPG LNG Nitrogen Oxygen	
Liquefied Gas	Ammonia Propylene Propane Butadiene Butane	
	LNG	
	Ethylene Oxygen Nitrogen Hydrogen Argon	
Liquid	Gasoline Diesel	
	Crude Oil Heavy Oil	
	Water	
Legend		



Vacuum Tank



Double Wall Dome Roof Tank



Gas Holder



Under Ground Tank



Spherical Tank









Cone Roof Tank Elevated Water Tank

■ Attachments

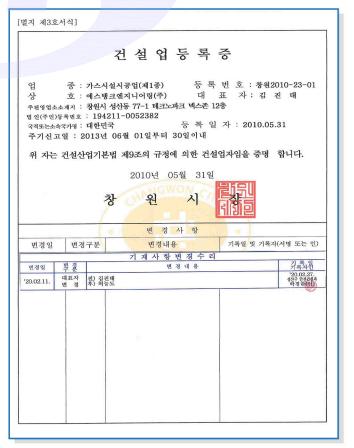
- 1 Company registration certificate issued by the Korean Government
- 2 Factory registration certificate issued by the Korean Government
- 3 Certificate for the construction of industrial equipment issued by the Korean Government
- 4 Construction certificate for gas facilities
- 5 Construction certificate for machinery facilities
- 6 Construction certificate for steel structure
- 7 Construction certificate for industrial & environmental facilities
- 8 Certificate of Korea Engineering & Consulting Association
- Ocertificate of ISO 9001:2015 / ISO 9001:2015
- 10 Certificate of ISO 14001:2015 / ISO 14001:2015
- 11 Certificate of OHSAS 18001:2007
- 12 Certificate of ASME (U & U2) issued by American Society of Mechanical Engineering.
- Certificate of Authorization by National Board
- 14 Membership of the American Petroleum Institute
- 15 Certificate of research and development center issued by the Korean Government
- 16 Certification of International Contractor
- 17 Patent No. 10-1798442 : Automatic welding technologies and devices for the erection issued by the Korean Intellectual Property Office
- Patent No. 10-1295629 : Support device for ball tank transportation issued by the Korean Intellectual Property Office
- 19 Patent No. 10-1563571 : Stacking apparatus for transporting piece of spherical tank issued by the Korean Intellectual Property Office
- Patent No. 10-1933124 : Static jig for welding and welding device of the shell issued by the Korean Intellectual Property Office

■ Attachments #1 ~ #4



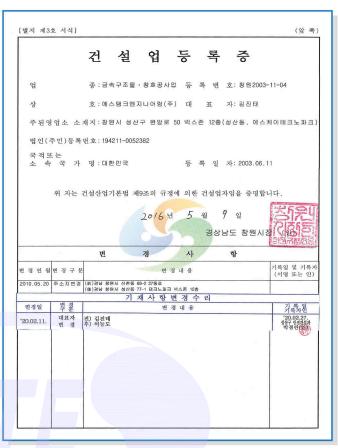
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「산업집적 청합니다. 청부서류 신청서작성 신청인 「산업집적	07 활성화 및 공장실 한국산업단 없음 → 접수 체리기: 활성화 및 공장실	설립에 관한 단지공단 	선청 S	최 J 제 기 제 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기	결제 처리기관 제1항·	비민우 →	인 공장 같이 공장 20 20 20 20 20 20 20 20 20 20	상등록 중 20년 (서 수수료 비 →	동명서를 신 04월 10명 명 또는 인 동보 최리기관

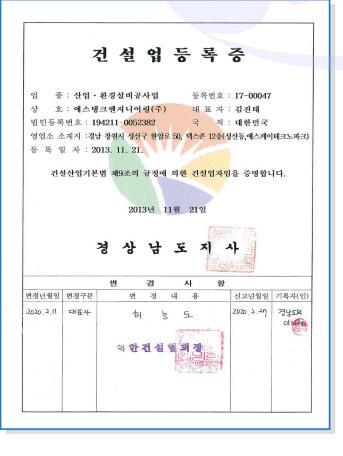


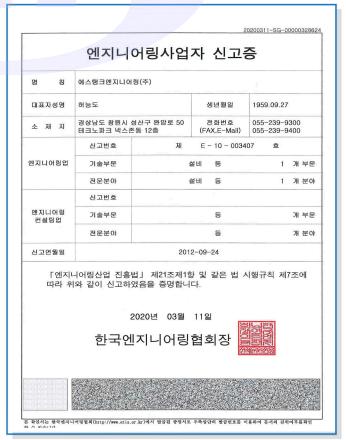


■ Attachments #5 ~ #8









■ Attachments #9 ~ #10









■ Attachments #11 ~ #12







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 Boller and Pressure Vessel Code. The use of the 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 this certification mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

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

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

AUTHORIZED: March 14, 2018 EXPIRES: May 31, 2021 CERTIFICATE NUMBER: 35,829



The American Society of Mechanical Engineers

Josep Loscados Managing Director, Conformity Assessment



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 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 this 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

AUTHORIZED: March 14, 2018 EXPIRES: May 31, 2021 CERTIFICATE NUMBER: 35.830



The American Society of Mechanical Engineers

Josep Labraces Managing Director, Conformity Assessment

■ Attachments #13 ~ #16



THE NATIONAL BOARD

OF

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:

May 21, 2015

Revision Date:

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

Red Caroner Red Cavaney
President and Chief Execut

We keep America going strong.



1. 연 구 소 명: 에스탱크엔지니어링(주)기술연구소

[소속기업명: 에스탱크엔지니어링(주)]

2. 소 재 지: 경상남도 창원시 성산구 완암로 50 넥스존 12층 (성산동, SK테크노파크)

3. 신고 연월일: 2018년 05월 (최초인정일: 2002년 11월 269

과학기술정보통신부

「기초연구진흥 및 기술개발지원에 관한 법률」제14조의 2제1항 및 같은 법 시행령 제27조제1항에 따라 위와 같이 기업부설연구소로 인정합니다.



2018년 5월 15일

한국산업기술진흥협회



■ 해외건설촉진법 시행규칙 [별지 제3호서식] <개정 2014. 2. 14>

제 81 호 No.81

해외건설업 신고확인증 (Certification of International Contractor)

에스탱크엔지니어링(주)

상 호 : (Name of Company)

(S-Tank Engineering Co., Ltd.)

대 표 자 : 허능도 (Name of Company Representative) (Heo Nung Do)

신 고 업 종 : (Type of Business)

전문건설업(금속구조물ㆍ창호ㆍ온실공사업) (Metallic Structures/Doors & Windows/Greenhouse)

주된 사무소의 소재지 : 경상남도 창원시 성산구 완암로 50, 테크노파크 (Address of Company) (12F, 50 Wanam-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Korea)

「해외건설촉진법」 제6조 제1항에 따라 해외건설업의 신고를 하였음을 증명

This is to certify that the above mentioned company is an enrolled international contractor in compliance with Clause 1 under Article 6 of Overseas Construction Promotion Act.

2008년 06월 11일

해외건설협회장

(Chairman of International Contractors Association of Korea)







■ Attachments #17 ~ #20











• 본 사 [Head Office]

경상남도 창원시 성산구 완암로 50, 12층 (성산동 테크노파크넥스존) 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

• 서울사무소 [Seoul Office]

서울특별시 마포구 마포대로 38, 10층 (도화동 일신빌딩) 10th floor, Ilsin Bldg., 38, Mapo-daero, Mapo-gu, Seoul, Korea 04174 Tel. +82-2-780-1242/9 Fax. +82-2-780-1243

● 함 안 공 장 1 [Haman Factory 1]

경상남도 함안군 법수면 법수로 318 318, Beopsu-ro, Beopsu-myeon, Haman-gun, Gyeongsangnam-do, Korea 52056 Tel. +82-55-584-9340 Fax. +82-55-583-2400

• 함안공장2 [Haman Factory 2]

경상남도 함안군 대산면 대사리 1314 1314, Daesa-ri, Daesan-myeon, Haman-gun, Gyeongsangnam-do, Korea 52010 Tel. +82-55-239-9300 Fax. +82-55-239-9400

울산제작장 [Ulsan Factory]

울산광역시 남구 사평로 108-318 (성암동) 108-318, Sapyeong-ro, Nam-gu, Ulsan, Korea 44785 Tel. +82-52-258-6334 Fax. +82-52-256-6337