

LSUNG-HISCO

The promising partner to your success!





We, as a company with human respect and safety as priorities, are committed to become the best partner.

CONTENTS

CEO Message	03
HSE	04
History	06
Our Company	08
Shell & Tube Heat Exchanger	10
Reactor	12
Pressure Vessel	14
Tower (Column)	15
Module	16
Construction & Maintenance	19
Main Fabrication Shop	20
Manufacturing	22
Design & Certificates	24
Quality	25
Major Clients	26
Delivery	27

Message from the CEO



First and foremost, I would like to offer sincere thanks to our Clients, who continued to work with us and helped us to come through the Court Protection Period of the last 4 years (Chapter 11 equivalent in USA). Due to such support we have been able to emerge as a stronger partner for your future work.

We are also announcing that from now on our company will be known as ILSUNG HISCO (Heavy Industries Solutions Co., Ltd.), which has been created to better reflect our strengths. Although we have added to our name, the support that our clients have come to expect from us has not changed. ILSUNG was established in 1984, and has been, and still is, providing engineering, fabrication, and on-time delivery of high quality products all over the world, mainly through the ability of our company to participate in many heavy industrial projects, particularly in the International world of the Oil, Gas and Power industries. Our efforts continue to be rewarded by our world-wide clients, who continue to support and believe in ILSUNG HISCO's strengths and capabilities as a world-class player in manufacturing and fabrication.

As we go forward we continue to focus our efforts on maintaining the highest of safety codes in order to protect our employees and their families as well as all visitors to our facilities. We are also highly motivated to protect our environment and meet the quality requirements and on time deliveries of products and services demanded by our Clients. Only by continuing to meet these standards can we offer and commit ourselves to becoming a strategic partner to our customers and suppliers. As always as it has been, our ultimate goal is that our clients' success is our success with true win-win strategy.

Therefore, together, collectively, we are all entering into a new and exciting phase of ILSUNG HISCO's future. A new journey has begun for our partners (existing and new), and I invite you all to join with us as we strive towards continued success and prosperity.

We look forward to new business opportunities at ILSUNG HISCO and again thank you for your continued support.

Jae H. Chang
CEO
ILSUNG HISCO



Build with spirit!

Health, Safety & Environment

In the companies' motto of 'Less use and more saving but maximizing efficiency,' ILSUNG HISCO constantly endeavors to be the promising partner for every project and contributes to protect and make a better clean environment.

ILSUNG HISCO constantly puts its utmost effort to make every manufacturing system under control and to keep the national standard of environment through having its own environment management systems and rules.

In recognition to the importance of Health, Safety, and Environment among the whole global companies, ILSUNG HISCO has its own HSE department to manage them efficiently. ILSUNG HISCO's employees always keep in mind that safety is the responsibility of everyone. We care for all workers' health through providing and maintaining a safe working environment by equipping the workforce with proper training and necessary tools. As a part of efforts to protect us and natural environment, ILSUNG HISCO has acquired ISO 9001, ISO 14001, and OHSAS 18001.



FABRICATION FACILITIES

- » Main Fabrication Shop
- » Stainless Steel Shop
- » Nozzle Shop
- » Material Storage
- » Forming Shop
- » Titanium Shop
- » Machining Shop
- » PWHT Furnace
- » Prefabrication & Assembly Shop
- » Module Shop
- » Blasting Shop
- » Painting Shop

COMPANY HISTORY

- 1984 JAN. Established and Named "ILSUNG Engineering & Construction Co., Ltd."
- 1985 DEC. Acquired a License of Thermal Equipment Manufacturing.
- 1989 NOV. Acquired ASME Stamps for 3 categories "U", "S", and "PP".
- 1994 FEB. Acquired ISO 9001 Certificate issued by TUV.
- 1994 JUL. Awarded the Production Improvement Excellence Prize by Korean Government.
- 1998 DEC. Acquired ASME "U2" Stamp.
- 2003 JUN. Contracted for SRA with Fluor
- 2004 NOV. Acquired ISO 14001 Certificate issued by Korea Gas Safety Corporation.
- 2006 APR. Quality Management System (QMS) approved for 9COM (6000002528) by Saudi Aramco.
- DEC. Acquired OHSAS 18001 Certificate issued by Korea Gas Safety Corporation
- 2007 JAN. Changed Company Name to "ILSUNG Corporation".
- 2008 JAN. Acquired ASME "R" Stamp.
- 2010 DEC. Acquired ASME "U3" Stamp.
- 2012 FEB. Contracted for EFA with Shell.
- 2016 DEC. Changed Company Name to ILSUNG HISCO
- 2017 SEP. Renewal for EFA with Shell

OUR COMPANY

Since established in 1984, we keep pushing ourselves to seek new ways to modernize our company to become a global leader in the Oil & Gas industry. With our continuous efforts, we could have accumulated exceptional 34 years experience and have built the single largest shop in Korea. We have been providing all required fabrication services to our clients from a design phase up to delivery for various projects in the world. From a single processing unit to mega size modules for big projects, we have produced the best quality products which meet all the clients' needs and expectations. Our advanced fabrication systems give us advantages not only to deal with various customers' needs promptly, but also to manage our production lines efficiently for making the best quality products every single time. In this regard, we have been selected as one of Shell EFA vendors among the other competitors in the world. We also have been qualified and registered with many international clients and these prove that our overall processes are met with the highest level of fabrication. With these extraordinary features we promise that we are committed to provide constant support and encouragement in serving you and your company.



Major Products

SHELL & TUBE
HEAT EXCHANGER



- » Project : LPG Train-4 At MAA Refinery / Kuwait
- » Client : KNPC / Daelim
- » Material : SB265-2 / SB338-2 (Titanium)
- » Size(mm) : 1,473 (ID) x 5,216 (L)
- » Total Weight(ton) : 78



- » Project : Hamaca Crude Upgrader / Venezuela
- » Client : Petrolera Ameriven S.A / Fluor
- » Material : SA542-D, CL4a (2.25Cr+1Mo+0.25V)
- » Size(mm) : 940 (ID) x 6,757 (L)
- » Total Weight(ton) : 36



- » Project : Pearl GTL / Qatar
- » Client : Shell / Chiyoda
- » Material : SA516-65 / SA334-6
- » Size(mm) : 4,700 (ID) x 23,607 (L)
- » Total Weight(ton) : 252

- » Project : Shell ScotfordM-001 Project / Canada
- » Client : Shell
- » Material : SA266-2N
- » Size(mm) : 1,200 (ID) X 8,897 (L)
- » Total Weight(ton) : 57.95

S & T Heat
Exchanger
Fabrication
Capacity

Maximum
Weight
1,000 ton/unit

Maximum
Pressure
700 kg/cm²

Maximum
ID(OTL)
6,000 mm

S & T Heat
Exchanger
Experience

- » EM Baffle Heat Exchanger
- » Rod Baffle Heat Exchanger
- » Special D Type Heat Exchanger
- » Special Materials
(Alloy, Titanium, etc.)

Major Products

REACTOR



- » Project : IFBA-2/ Iran
- » Client : National Petrochemical Company / Toyo Engineering
- » Material : SA387-11 CL2
- » Size(mm) : 113 (T) x 5,600 (ID) x 23,220 (L)
- » Total Weight(ton) : 247

- » Project : CITGO Tier-2 / USA
- » Client : CITGO Petroleum / Mustang E & C
- » Material : SA387-22 CL2 + 347SS CLAD
- » Size(mm) : 56+3.2 (T) x 4,572 (ID) x 6,147 (L)
- » Total Weight(ton) : 87



Pressure Vessel
Fabrication
Capacity

Maximum Weight 1,500 ton/unit

Maximum Pressure 700 kg/cm²

Maximum ID(OTL) 15,000 mm

Reactor
Capability

- » Hydrocracker Reactor
- » Hydrotreater Reactor
- » CCR Reactor
- » SRU Reactor



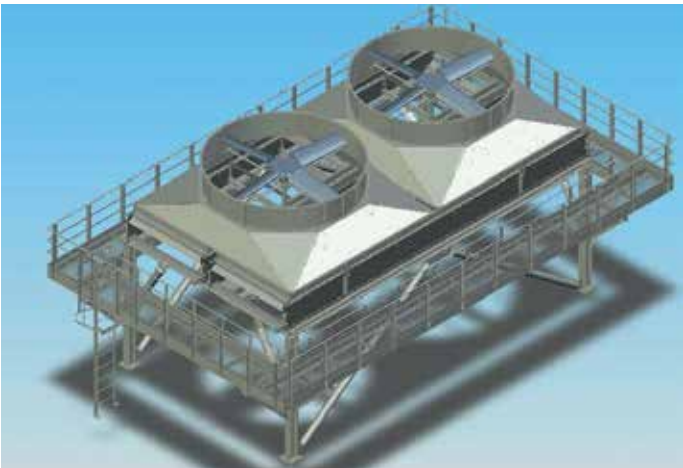
- » Project : LVN ISOM & GOTH NO.3 / Philippines
- » Client : Petron Bataan / Stone & Webster
- » Material : SA387-11 CL2 + 347SS CLAD
- » Size(mm) : 62+3 (T) x 3,000 (ID) x 31,650 (L)
- » Total Weight(ton) : 197

Major Products

AIR COOLED HEAT EXCHANGER /
AIR FIN COOLER



» Forced Draft Type Cooler



» Induced Draft Type Cooler

Major Products

PRESSURE VESSEL



- » **Project** : Rag & Flare Mitigation INT. / Qatar
- » **Client** : Qatar Petroleum
- » **Product** : Stainless Steel Vessel (PED CODE)
- » **Material** : BS1501-316-S11-LT196
- » **Size(mm)** : 60 (T) X 4,500 (ID) X 3,650 (L)
- » **Total Weight(ton)** : 250

- » **Project** : Hamaca Crude Upgrader / Venezuela
- » **Client** : Petrolera Ameriven S.A / Fluor
- » **Product** : ASME U2 Vessel
- » **Material** : SA516-70
- » **Size(mm)** : 107 (T) x 2,590 (ID) x 7,696 (L)
- » **Total Weight(ton)** : 179

- » **Project** : Habshan IGD5 / U.A.E
- » **Client** : GASCO / Hyundai
- » **Product** : Heavy Wall Vessel
- » **Material** : SA516-65N+S5+HIC
- » **Size(mm)** : 180 (T) x 6,200 (ID) x 35,000 (L)
- » **Total Weight(ton)** : 976



- » **Project** : PT Pertamina (Persero) / Indonesia
- » **Client** : Pertamina / Toyo Engineering
- » **Material** : SA516-70
- » **Size(mm)** : 5,600 (ID) x 100,500 (L)
- » **Total Weight(ton)** : 600



Major Products

TOWER(COLUMN)

- » **Project** : Aromatic Project / Netherlands
- » **Client** : Shell Nederland Raffinaderij B.V. / Jacobs Nederland B.V.
- » **Material** : SA516-70N
- » **Size(mm)** : 3,700 (ID) X 68,400 (L)
- » **Total Weight(ton)** : 329

- » **Project** : Cartagena Refinery Expansion / Colombia
- » **Client** : Reficar / CB & I
- » **Material** : SA387-11 + 410SS CLAD
- » **Size(mm)** : 6,352 (ID) x 51,740 (L)
- » **Total Weight(ton)** : 230

Major Products

MODULE

Sulphur Recovery Unit

- » Project : GS Caltex No.3 HOU / Korea
- » Client : GS Caltex / CB & I
- » Size(m) : 16.5 (W) x 16 (H) x 53 (L)
- » Total Weight(ton) : 1,248



FPSO CO2 Separex Unit

- » Project : Modec FPSO Membrane Skid / Brazil
- » Client : Modec / UOP Honeywell
- » Size(m) : 10.8 (W) X 16.6(H) X 15.5 (L)
- » Total Weight(ton) : 375



Module Fabrication Capacity

Maximum Size [W x H x L] **20m x 18m x 45m**

Maximum Weight **2,000 ton/unit**

- » Project : P76 & P77 FPSO Onerosa Separex Membrane Module / Brazil
- » Client : Petrobras / UOP Honeywell
- » Size(m) : 18(W) X 20(H) X 20(L)
- » Total Weight(ton) : 750

Module Experience

- » CCR Module
- » Dehydration-Glycol Regeneration Skid
- » FPSO Membrane Module
- » OPF Expansion Skid
- » Polyseb Membrane Skid
- » PSA Valve Skid
- » SRU Module
- » Steam Reformer Unit



Major Products

MODULE

CCR Module

- » **Project** : Taneco CCR Module 2000 pph / Russia
- » **Client** : Taneco / UOP Honeywell
- » **Size(m)** : 17.6 (W) x 7.6 (H) x 87 (L)
- » **Total Weight(ton)** : 793

CCR Module

- » **Project** : Motiva Modular CCR / USA
- » **Client** : Shell / UOP Honeywell
- » **Size(m)** : 17.6 (W) x 11 (H) x 106 (L)
- » **Total Weight(ton)** : 1,634



CONSTRUCTION & MAINTENANCE

Construction

ILSUNG HISCO is proud to offer its services in the construction of various structures in different types of plants for which the quality and reliability is unequaled. ILSUNG HISCO with the accumulated experience insures the quality of its service.



Maintenance

Maintenance has been one of ILSUNG HISCO's essential service over the years, ILSUNG HISCO's highly trained staff and engineers are eager to serve the clients' every need. ILSUNG HISCO has accumulated experience and technology in maintenance services of various equipment and plants for our clients.



Facilities

MAIN FABRICATION SHOP



Fabrication Capacity for Processing Equipment

Maximum Weight **1,500** ton/unit

Maximum Pressure **700** kg/cm²

Maximum Dimension (T x ID x L / mm)
300×15,000×140,000

Main Fabrication Shop

Width **230** m (755ft)

Length **260** m (850ft)

Total Area **60,000** m² (646,000ft²)

CRANE

Capacity (Number of Unit)

- » Gantry Crane 100 tons (2)
- » Gantry Crane 30 tons (2)
- » Gantry Crane 20 tons (9)
- » Overhead Crane 150 tons (2)
- » Overhead Crane 50 tons (8)
- » Overhead Crane 30 tons (12)
- » Overhead Crane 20 tons (16)
- » Crane less than 20 tons (35)



HEAT FURNACE

Capacity (W x H x L / mm)

- » 8,000 x 8,000 x 20,000
- » 3,500 x 2,500 x 4,000



SHOTBLASTING & PAINTING

Capacity (W x H x L / mm)

- » Paint Shop : 15,000 x 12,000 x 40,000 - Moving
- » Shotblasting Shop : 15,000 x 12,000 x 40,000



Main Shop

Nozzle Shop

PWHT Shop

Forming Shop

Machining Shop

Stainless Steel Shop

Titanium Shop

MANUFACTURING

Cutting & Machining

ILSUNG HISCO has advanced fabrication machines which have the ability to handle most of steel plate up to 300 mm (T) for cutting and 1,000 mm (T) for drilling. These machines are all CNC capable and can provide the tolerance and edge finish that any design requires.



Materials

- » Carbon Steel : HIC, Killed & Mild C/S
- » Low Alloy : Cr-Mo, Cr-Mo-V
- » Stainless Steel : - Austenitic
 - Duplex, Super Duplex
 - Ferritic
 - Martensitic
- » Clad Steel
- » Alloy & Non Ferrous Alloy :
 - Hastelloy
 - Copper
 - Nickel
 - Monel
 - Titanium
 - Inconel
 - Incoloy
 - Zirconium



Bending & Forming

ILSUNG HISCO is equipped with modern bending & forming machines with the capability to press up to 600 tons and 3,000 tons for cold and hot forming.



Welding

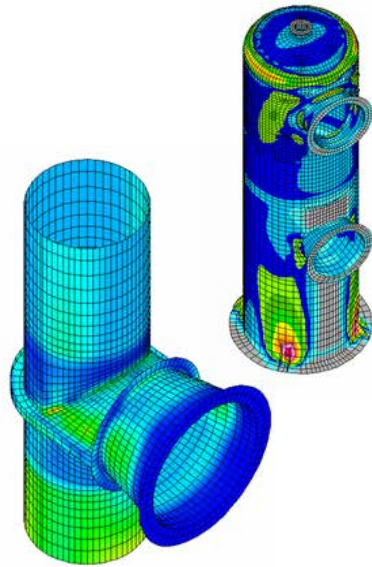
Modern welding equipment including multiple submerged arc equipment allows efficient and smooth welding of products for all sizes of plate shells. Welding capabilities, including TIG, MIG, SAW, SMAW, FCAW with a variety of wire and fluxes can be utilized to meet the most sophisticated of welding procedures. Qualified ASME welders and an extensive radiographic capability support all types of ASME Section VIII construction including lethal service requirement.



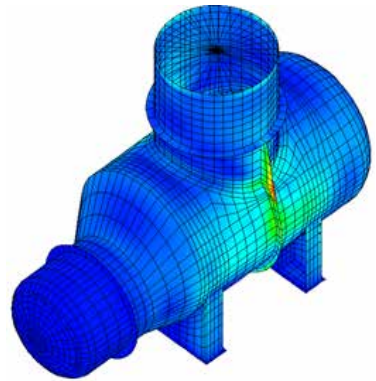
DESIGN & CERTIFICATES

Design

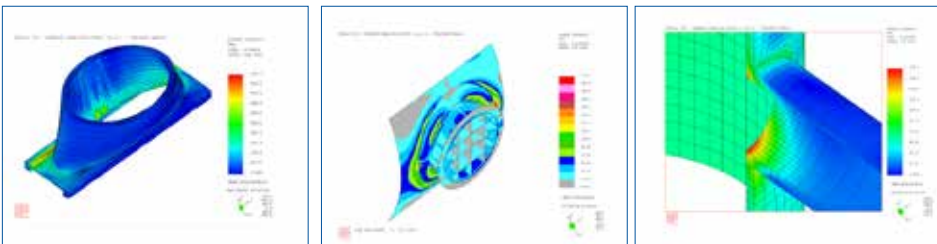
ILSUNG HISCO's trained engineers, using the latest computer design tools with complete understanding of the fundamental equipment design. We translate customers' proposal into a design that meets all the latest ASME, TEMA, and PED standards.



Design Capability



- » AUTO CAD : Basic Design
- » CATIA : 3D Modeling CAD
- » COMPRESS, PVELITE, B-JAC, and FINGLOW : Strength Calculation
- » ANSYS : Strength Calculation
- » HEATER : HP Feedwater Heater Design
- » HTRI for Thermal Design Program : Thermal Calculation and Guarantee



Certificates

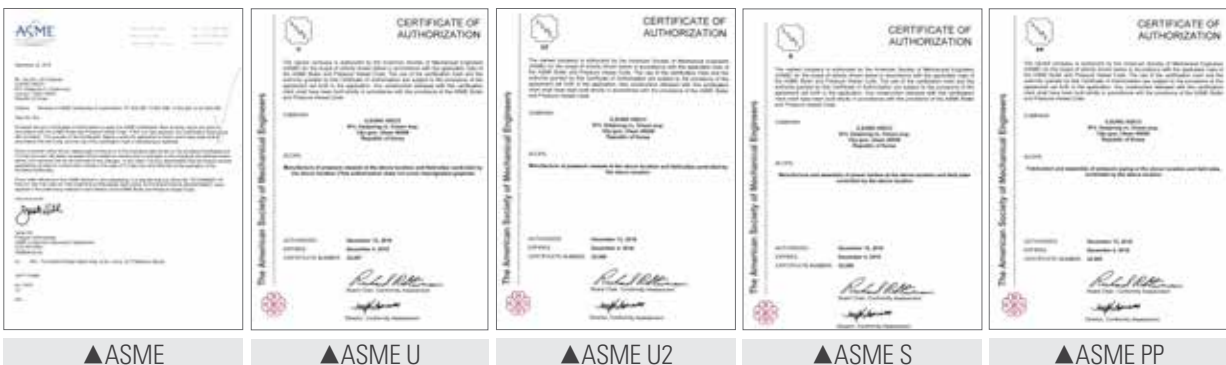


▲OHSAS 18001

▲ISO 14001

▲ISO 9001

▲NB R



▲ASME

▲ASME U

▲ASME U2

▲ASME S

▲ASME PP



QUALITY

Test

ILSUNG HISCO performs inspection with instruments calibrated to certified standards and NDE with highly qualified Level II, III.

NDE

- » Visible & Fluorescent Dye Penetrant and Magnetic Particle Test
- » Ultrasonic, Radiography Test

General

- » Helium Leak, Hydrostatic, and Universal Test
- » Charpy Impact and Hardness Test
- » Positive Material Identification Test
- » Dead Weight Gauge
- » Coating Thickness Gauge
- » Ultrasonic Thickness Gauge
- » Optical Emission Analyzer
- » Pressure Recorder
- » Ferrite Scope



MAJOR CLIENTS

End Users



EPCs



DELIVERY



Transportation

We make delivery upon order of equipments to the given point of destination with no discrepancies and damages to merchandise.

ILSUNG HISCO is geographically close to both Onsan and Ulsan ports, so we have a very strong advantage in transporting goods on time.



www.ilsunghisco.com

74, Daejeong-ro, Onsan-eup, Ulju-gun, Ulsan, Republic of Korea 45009
T. +82-52-231-7510 F. +82-52-239-0392 E-mail. isecbiz@ilsung.com

Designed by GoodDesignSave / www.designsave.co.kr