

INSULO Corporation



Company Outline

- ▶ **INSULO Corporation**
- ▶ **CEO: Park SungKoo**
- ▶ **Established in 1994**
- ▶ **Address: 26-12 ,526 Beongil, Jillye-myeon, Gimhae-si, Gyongsangsam-do, S.Korea**
- ▶ **TEL: (055)-346-0090**
- ▶ **FAX: (055)346-0186**

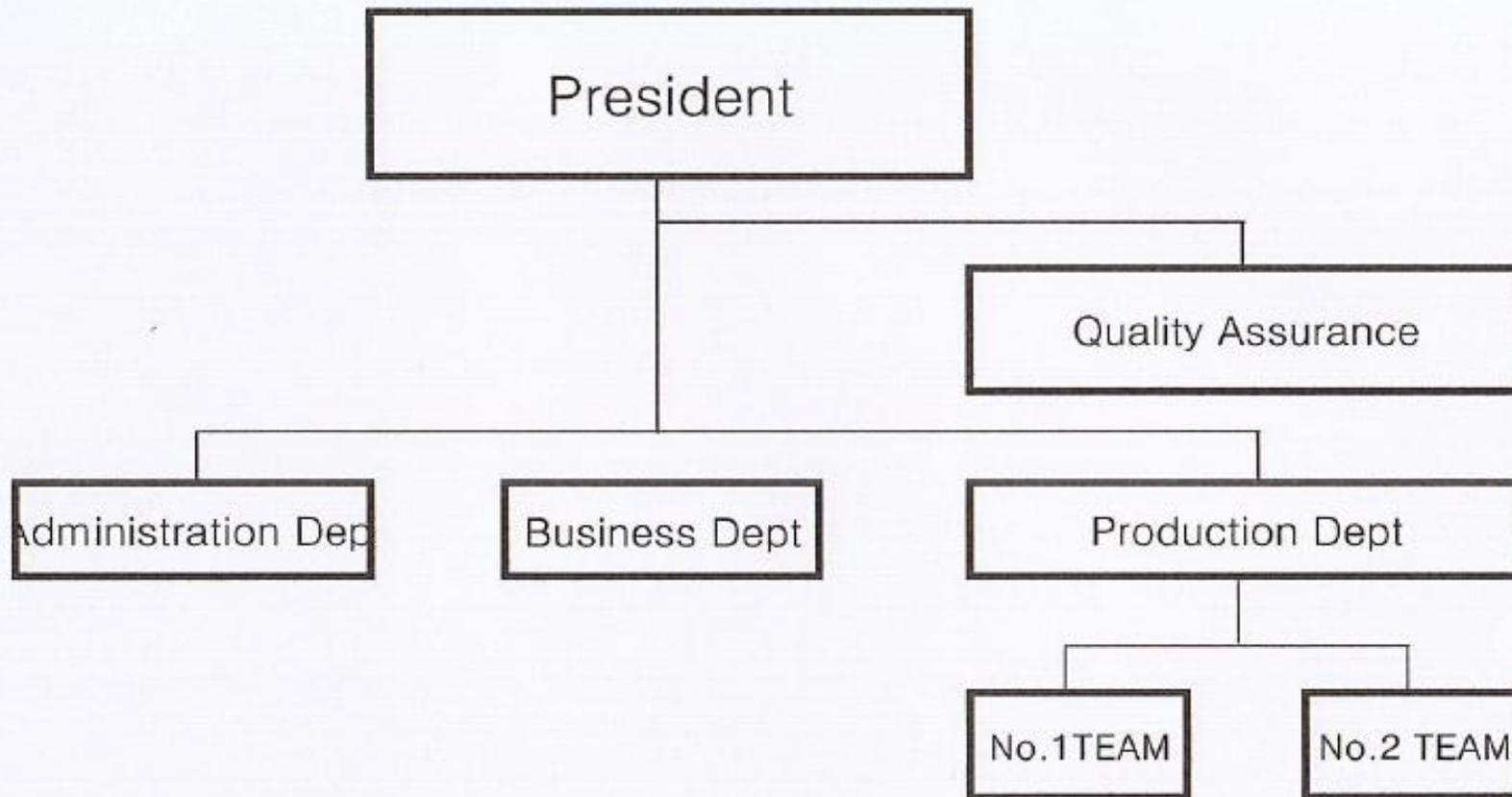
Brief History

- ▶ 1994. 07 SungKoo Park as a CEO started a business
- ▶ 1996. 04 Transferred as incorporated company
- ▶ 2003. 10 Obtained ISO 9001
- ▶ 2005. 12 Started to supply insulation products to Seongdong Shipbuilding Co., Ltd
- ▶ 2006. 10 Obtained a certificate of Quality Management System ISO 9001:2001
- ▶ 2012. 05 Obtained a certificate of ISO 14001:2004
- ▶ 2013. 03 Obtained a certificate of Design Assessment for Removable Jacket from ABS
- ▶ 2013. 04 Obtained a Certificate of Manufacturing Assessment for Flooring Covering/ Non Combustible Material from ABS
- ▶ 2013. 12 Obtained a certificate of Fire Approval for Removable Jacket from Lloyd

Organization



Organization



Field of Business

- ▶ Shipbuilding Scope
- ▶ Offshore Plant Scope
- ▶ Battleship (Special ship) Scope



Field of Business



- ▶ Shipbuilding Scope

- For more than 30 years, we have been contributing to supply insulation products for shipbuilding business to DSME where is one of the best shipbuilding companies in the world.

Main products

- ▶ Mineral Wool Mold & Board for A60 Area
- ▶ Mineral Wool Lamella MAT for Gas pipe
- ▶ Mineral Wool Pipe Cover & Elbow Cover for Hot pipe line
- ▶ Cellular Plastic Segment Pipe Cove & Elow Cover for Cold pipe line



Main products



M/W Board



M/W Pipe Cover



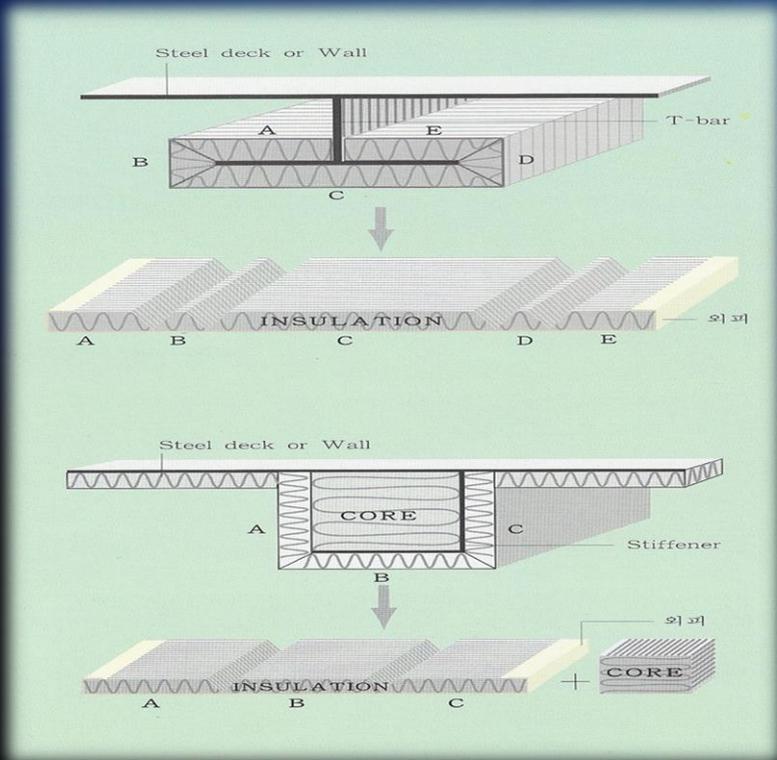
M/W Lamella MAT



Main products

M/W MOLD Drawing

M/W MOLD



Main products



Celluar Plastic Segment Pipe Cover



스펀지 카바류



스펀지 카바류



루버 스펀지 카바



루버 스펀지 매트 & 카바

Main products

Celluar Plastic Segment Elbow Cover



루버 스펀지 엘보



스펀지 엘보



엘보류



엘보류

Field of Business

An aerial view of a large offshore oil rig ship, likely a supply vessel or platform, floating on the deep blue ocean. The ship has a red hull and a white superstructure. It is equipped with various pieces of machinery, including a helicopter deck on the upper deck and a tall derrick structure. The ship is positioned in the upper right quadrant of the image.

▶ Offshore Plant Scope

- We have been completed several offshore projects with DSME successfully ordered by major oil companies including Chevron and Exxonmobil.

Main products

▶ Pipe Insulation

- Straight pipe Insulation
- Elbow Insulation
- Flange/Valve Insulation
- Personal Protection Insulation

▶ Available products made by overseas

- ROCKWOOL
- AEROGEL



Straight Pipe Cover Insulation



- Mineral Wool
- Rock Wool
- Aerogel
- Armaflex
- SUS/Metal/Aluminum Jacketing

Elbow Cover Insulation

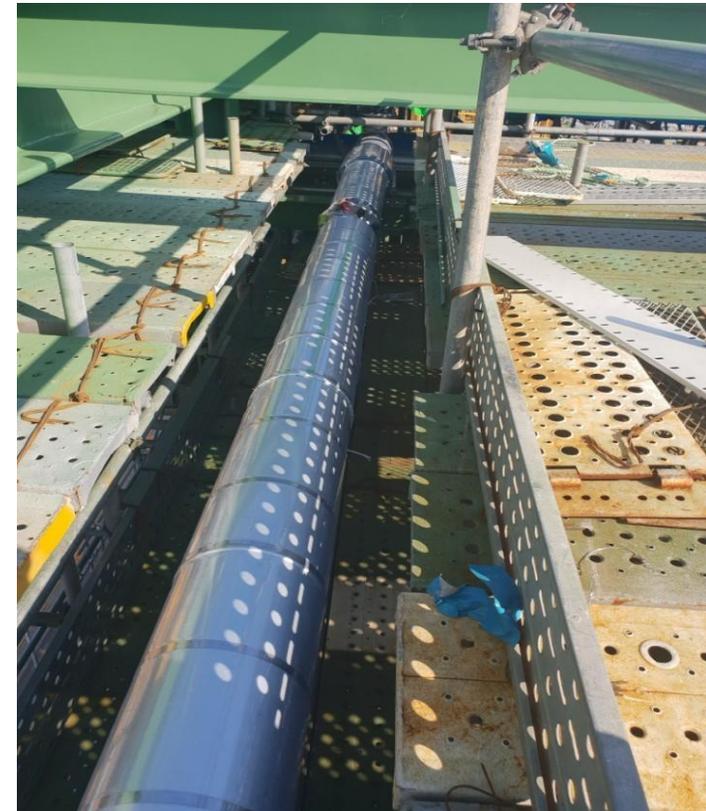


- Mineral Wool
- Rock Wool
- Aerogel
- Armaflex
- SUS/Metal/Aluminum Jacketing

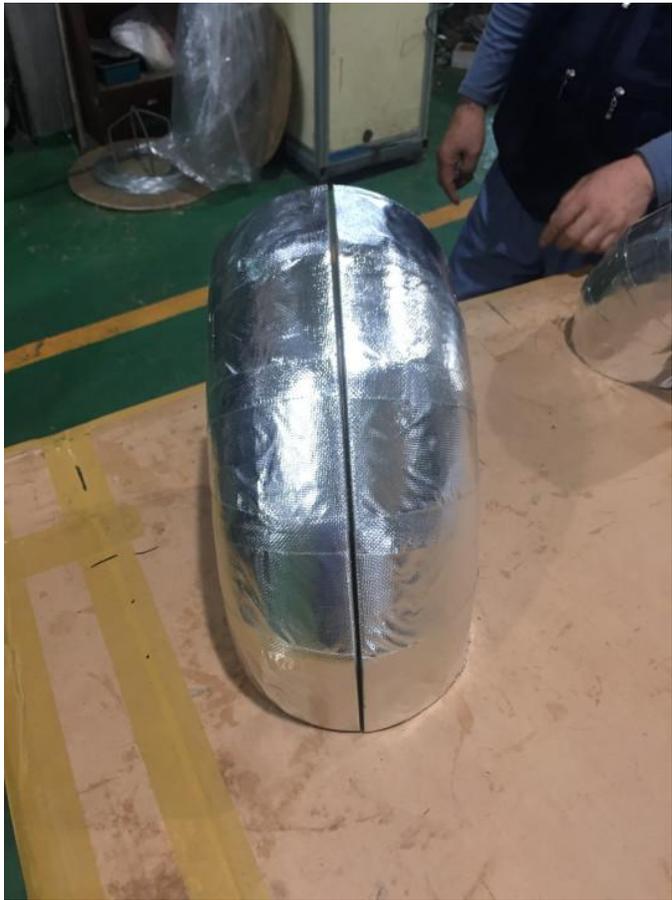
TCO Project_DSME



TCO Project_DSME



TCO Project_DSME



Flange/ Valve Removable Insulation Cover



- ▶ INSULO Corporation specializes in the fabrication and installation of removable, reusable insulation jackets.
- ▶ Measuring – Our field engineers who have experienced in variety fields including shipyards, plants and offshore visit your equipment onsite to ensure a precise measurement.
- ▶ Production – Your exact measurement and materials specifications are provided to our design engineers and fabrication is completed in our facility.
- ▶ Installation – If needed, our field–engineers return to your site to custom–fit your removable insulation jackets to ensure accurate fit.

Case of installation

<DSME – Pazflor FPSO>



시공사진



시공사진



시공사진



시공사진

Case of installation

<DSME - SNX Project>



18.10.2014 16:28

Case of installation

< Insulo engineer in Angola for SNX Project >



Case of installation

Samsung Heavy Industries
JSM Project



Case of installation

Samsung Heavy Industries – JSM Project



Case of installation

Samsung Heavy Industries
JSM Project



Case of installation

Samsung Heavy Industries – JSM Project

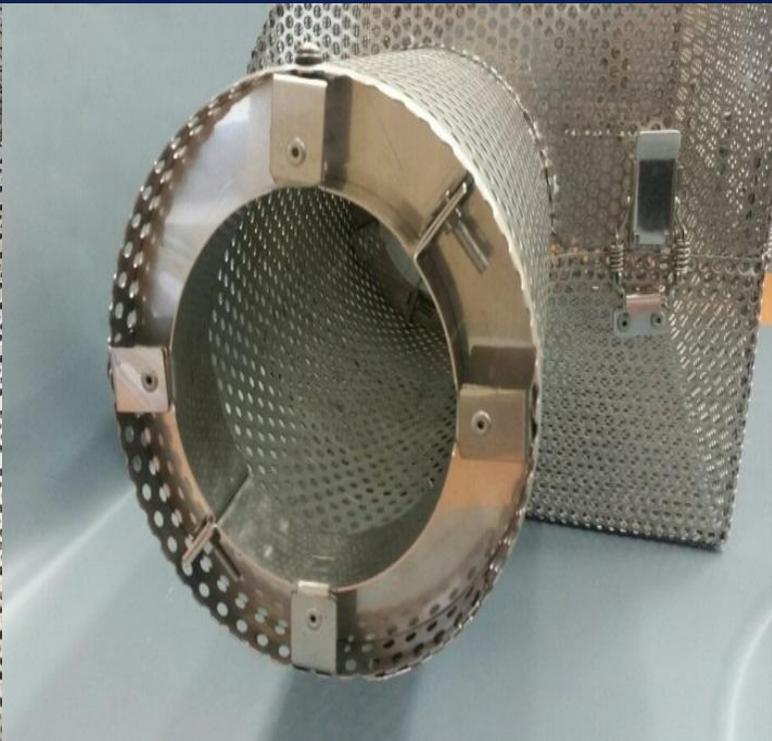


Flange/Valve Cover



Case of installation

Personal Protection



Marine projects that INSULO Corporation has contributed to DSME

Project Number	Project Name	Company
6037	SANHA CONDENSATE	Chevron
6040	Benguela Belize	Chevron
6042	Sable	ExxonMobil
6043	Agbami FPSO	Chevron
6044	Tombua Landana	Chevron
6045	Pazflor FPSO	Total
6046	Arkutun-Dagi	ExxonMobil
6049	Clov FPSO	Total
6050	Big Foot ETLP	Chevron
6051	South Nemba Auxiliary	Chevron
6052	Wheatstone	Chevron
6053	Dong Hejre	DONG E&P, Bayerngas
6054	Ichthys FPSO	INPEX
6302	Petronas LNG-FPSO	Petronas
6055	Mafumeira Sul Project	Chevron
6061	TCO Project	Chevron

Projects that INSULO Corporation has sent a engineer to offshore For Removable insulation cover

Project Number	Project Name	Offshore Location	Engineer's Name	Period
6037	SANHA CONDENSATE (Chevron)	Angola	J.Y. Choi	2004. 09 ~ 2005. 01
6040	Benguela Belize (Chevron)	Angola	J.Y. Choi	2006. 08 ~ 2006. 11
6042	Sable (ExxonMobil)	Canada	J.Y. Choi	2007. 05 ~ 2007. 06
6043	Agbami FPSO (Chevron)	Nigeria	J.W. Lee	2008. 01 ~ 2009. 02
6044	Tombua Landana (Chevron)	Angola	J.W Lee	2009. 06 ~ 2009. 11
6045	Pazflor FPSO (Total)	Angola	S.S Park	2011. 03 ~ 2011. 11
6051	South Nemba Auxiliary (Chevron)	Angola	C.B Park	2014. 08 ~ 2014. 10
6055	Mafumeira Sul Project (Chevron)	Angola	S.S Park	2015. 10 ~ 2015. 12

Field of Business



▶ Battleship (Special ship) Scope

- We have participated in building battle ship in DSME since the first Korean battle ship.

Main products



- ▶ GAS PIPE INSULATION MAT
- ▶ PIPE COVER INSULATION
- ▶ HULL INSULATION
- ▶ DUCT INSULATION

Case of installation

<Gas pipe insulation MAT>



Marine Hull Blanket 시공



Marine Hull Blanket 시공

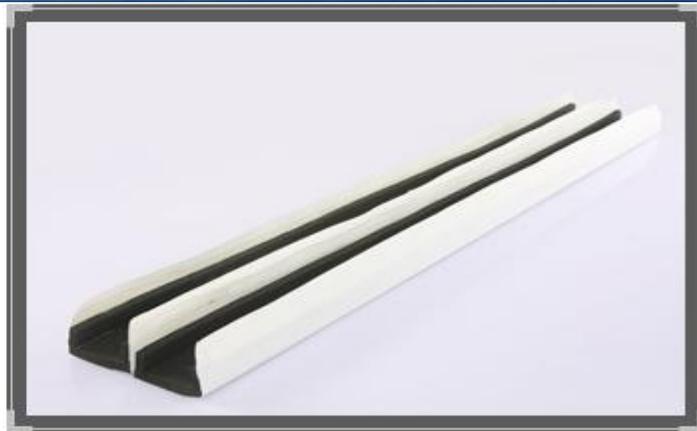


Case of installation

<DUCT Insulation>



Runner(Mold)



Runner(Mold)



덕트 시공사진



덕트 시공사진

Project Number	Project Name	Ship Owner
7026	KDX-II #2	Korea
7028	KDX-II #5	Korea
7029	KDX-III #2	Korea
7030	Korea Coast Guard 500T #1	Korea
7031	Korea Coast Guard 500T #2	Korea
7032	Korea Coast Guard 500T #3	Korea
7033	Korea Coast Guard 500T #4	Korea
7034	Korea Coast Guard 500T #5	Korea
7035	Korea Coast Guard 300T #1	Korea
7036	Korea Coast Guard 300T #2	Korea
7037	Korea Coast Guard 300T #3	Korea
7038	ATS-II	Korea
7039	Malaysia Training Vessel #1	Malaysia
7040	Malaysia Training Vessel #2	Malaysia
7044	MARS Tanker #1	U.K.
7045	MARS Tanker #2	U.K.
7046	MARS Tanker #3	U.K.
7047	MARS Tanker #4	U.K.
7048	NDMA Support Vessel	Norway
7049	Thai Frigate	Thailand
7050	FFX-II #1	Korea
7057	FFX-II #2	Korea
7509	Fast Passenger Carferry #1	Greece (Blue Star Ferries Maritime)
7510	Fast Passenger Carferry #2	Greece (Blue Star Ferries Maritime)
7511	CTN Ro-Ro Passenger ferry	Tunisia (COTUNAV)
7712	Indonesia Submarine #1	Indonesia
7713	Indonesia Submarine #2	Indonesia
7714	Indonesia Submarine #3	Indonesia
7716	Jangbogo-III Batch-1 #1	Korea

Case of installation



<Passenger ship>



설치 전 (Before)



설치 후 (After)



ORYZA-SIL-650

Oryza Aerogel Blanket is a flexible thermal insulation material made of aerogel and a variety of reinforcing fibers through a special manufacturing process.

This product is widely used in industrial pipelines, petroleum/petrochemical industry, home appliances, construction and others, because of its excellent performance in energy saving and emission reduction.

Specific advantages are as follows:

- Low dust aerogel
- Excellent thermal insulation performance
- Stable performance
- Fire resistance in grade A
- Easy to construct; increase the effectiveness of space usage
- Durable and longevity
- Safe and environmentally friendly



Tested according to ASTM C1728 - Standard Specification for Flexible Aerogel Insulation

- ASTM 1763-B Water absorption
- ASTM C165 Compression test
- ASTM C303 Classification of thickness and density
- ASTM C356 Linear shrinkage under soaking heat
- ASTM C1101 Classification of flexibility
- ASTM C1104 Water vapor sorption
- ASTM C411 Hot Surface Performance
- ASTM E84 Surface burning characteristics
- ASTM 871 and ASTM C795 Leachable Ions and pH
- ASTM D5116-15 Environmental Organic Emission
- ASTM D5116-15 Prohibited Substance

Other tests

- EN 12667 Thermal conductivity
- BS 476 Part 4 Fire Test on Building Material
- ISO 22899 Performance in Jet-fire
- GB/T 17393-2008 Stress Corrosion Test On Austenitic Stainless Steel
- Crystallinity Study of fibers
- GB/T 34336-2017 Nanoporous aerogel products for thermal insulation
- GB 8624-2012 Classification for burning behaviour of building material

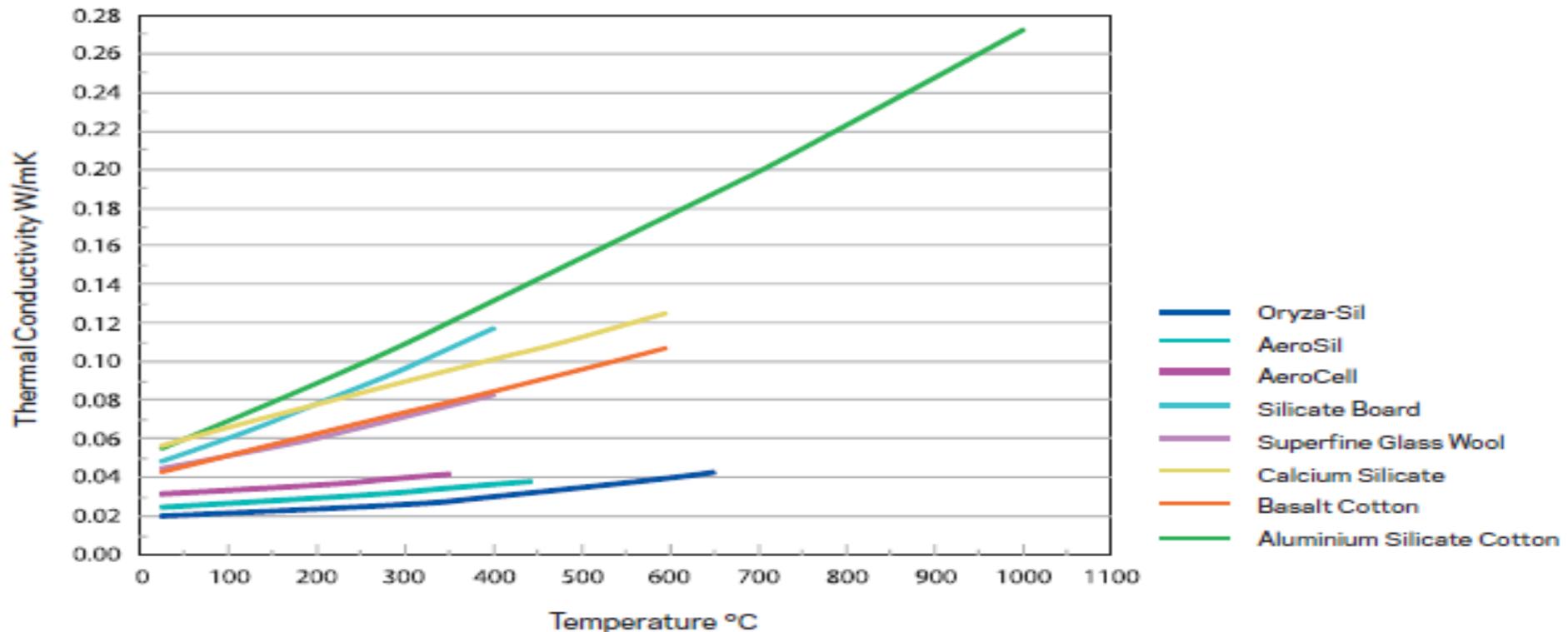
TECHNICAL PARAMETERS

ORYZA-SIL-650

Industry Applications

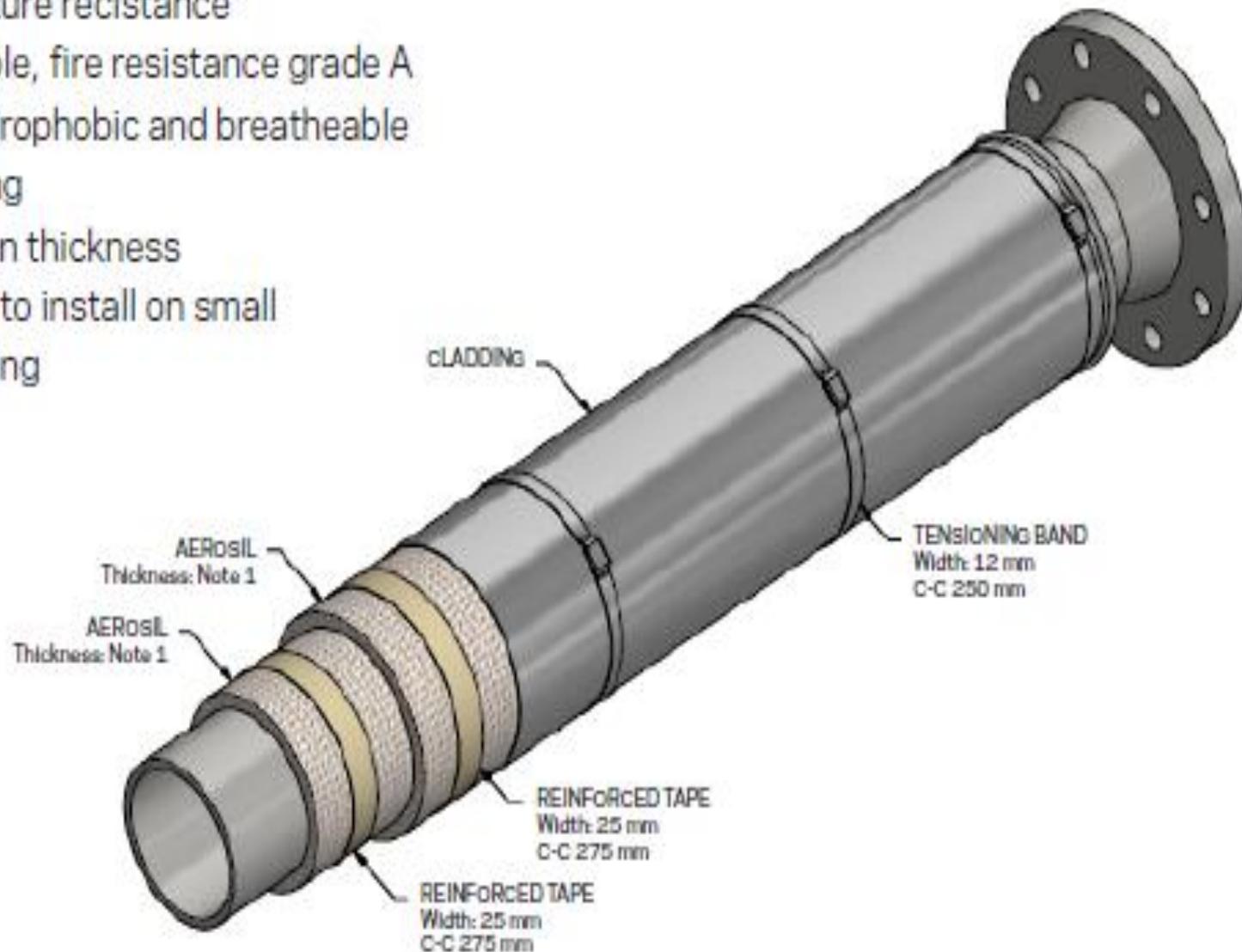
Oil & Gas - Refineries; Aerospace,
Marine Transportation;
Cryogenic Insulation

Nominal Thickness	3 mm, 6 mm, 10 mm
Density	220 kg/m ³
Operational Temperature	-160°C - 650°C
Fire Rating	A
Thermal Conductivity W/mK	0.018-0.020



Key selling points

- Low dust emission
- High thermal performance
- High temperature resistance
- Non flammable, fire resistance grade A
- Extremely hydrophobic and breathable
- CUI mitigating
- Slim insulation thickness
- Soft and easy to install on small dimension piping



Certificate



<ISO 9001:2009>

<ISO 14001:2004>



Certificate of Registration

This is to certify that the Quality Management System of

INSULO CORPORATION

#1067-5, Gomo-ri, Jillye-myeon, Gimhae-si, Gyeongsangnam-do, Korea

Has been found to conform to the Quality Management System Standard :

KS Q ISO 9001:2009 / ISO 9001:2008

This certificate is valid for the following product or service ranges:

Manufacture and Servicing of Mineral Wool and Glass Wool

Certificate NO. : QSC1475

Valid Until Date : 01-November-2015

Certificate Issue Date : 22-October-2012

Original Certificate Date : 20-October-2006

KOREA INT'L STANDARDS CERTIFICATION

*Lack of fulfillment of conditions described in the Guide for Certification Process may render this Certificate invalid.

Mark indicates that KIC is accredited by Korea Accreditation Board for Environmental Management System (No. KAB-EC-27).

Mark indicates that KIC's Accredited by the member of the International Accreditation Forum Multilateral Recognition Arrangement.

Authorized by: *Dongchun, Won*

Dong Chun Won, President



Certificate of Registration

This is to certify that :

INSULO CORPORATION

#1067-5 Gomo-ri, Jillye-myeon, Gimhae-si, Gyeongsangnam-do, Korea

Has been assessed by International Certification Registrar Ltd., in respect of their Environmental Management Systems and found to comply with

ISO 14001:2004

Approval is hereby granted for registration providing the rules and conditions relating to certification are observed at all times.

Certification Scope

Manufacture and Servicing of Mineral Wool and Glass Wool

Certificate Issue Date : 25th May 2012

Certificate No. : E184112

Expiration Date : 24th May 2015

The Seal of ICR Limited was here to affixed in the presence of:

Seok-gang Jim

President



This seal is a reference sign of ICR and is not intended for legal use and is not a guarantee of the validity of the certificate. It is valid only if it is used in accordance with the conditions of the certificate. It is valid only if it is used in accordance with the conditions of the certificate. It is valid only if it is used in accordance with the conditions of the certificate.

ICR International Certification Registrar is a certification body directly registered by ANAB and it is verified at the ANAB website (www.anab.org)

Quality Management System

Certificate

<Removable MAT – ABS>

<Removable MAT – ABS>



CERTIFICATE NUMBER
13-BKT1009888-PDA
DATE
12 March 2013
ABS TECHNICAL OFFICE
Busan Ship Engineering

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of
INSULO CORPORATION - GYMHAE

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

PRODUCT: **Non Combustible Material**

MODEL: **Removable Jacket GEN-01**

This Product Design Assessment (PDA) Certificate 13-BKT1009888-PDA, dated 12/Mar/2013 remains valid until 11/Mar/2018 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUS or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Kosaku Sano
Engineer



CERTIFICATE NUMBER: BK2043846-X
PORT OFFICE: BUSAN, KOREA

Certificate of MANUFACTURING ASSESSMENT

This is to certify that: The Undersigned did evaluate the relevant manufacturing quality procedures for the type of products of the manufacturer:

INSULO Corporation Plant at GIMHAE, KOREA

The methods of assuring and controlling quality during production as required by the ABS Rules or Guides for the product and the associated specifications or standard were verified to reflect the specific surveys, required by the Rules and Standards for the manufacture of:

Flooring Covering / Non Combustible Material

The manufacturer presented a sample or specimen of the product, representative of the "type" approved, to the undersigned, for the purpose of verifying that the "type" has been manufactured in conformance with the Manufacturer's Product Design Assessments.

This Certificate of Manufacturing Assessment is an evaluation of the manufacturer alone and is neither an approval nor a rejection of the product described above. Unless cancelled, expired or revoked, this certificate remains valid subject to annual audits

Consult the ABS Type Approval website to confirm the continued validity of this certificate and the status of the particular products being manufactured.

ISSUE DATE 19 April 2013 EXPIRATION DATE 18 April 2018

SURVEYOR

19 April 2013

18 April 2018

J. Tak Kim
JONG-TAK KIM

ABS
BUSAN

FIRST ANNUAL ENDORSEMENT
SECOND ANNUAL ENDORSEMENT
THIRD ANNUAL ENDORSEMENT
FOURTH ANNUAL ENDORSEMENT

Note

This Certificate has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping as of the date of issue. Parties are advised to review the Rules for the scope and conditions of classification and to review the survey records for a fuller description of any restrictions or limitation on the vessel's service or surveys. The validity, applicability and interpretation of this Certificate is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Certificate or in any notation made in contemplation of this Certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.

AB 257 (09-11)

Rev 5

Page 1 of 2

Certificate

<Removable MAT – Lloyd>



Lloyd's
Register

CERTIFICATE OF FIRE APPROVAL

This is to certify that

The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer Insulo Corporation

Address 1067-5, Gomo-ri
Jillye-myeon, Gimhae-si
Gyeongnam-do, 621-881
Republic of Korea

Type NON-COMBUSTIBLE MATERIAL

Description Fire Resisting Material – Type: "GEN-01 Removable Jacket"
(Density: 340 kg/m³)

Specified Standard IMO Res. MSC.307 (88)-(2010 FTP Code) Annex 1, Part 1

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Date of issue 11 December 2013 Expiry date 10 December 2018

Certificate No. SAS F130265

Signed

Sheet No 1 of 2

Name S. Abraham
Surveyor to Lloyd's Register EMEA
A Member of the Lloyd's Register Group

Note:

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.



Main Customers



DSME

stx
Shipbuilding

SPP

 **HYUNDAI**
MIPO DOCKYARD CO., LTD.



Thank you !!