

Insulation Repair and Maintenance for Gas Carriers

Insulation Service



INSULATION SERVICE

Gas carriers with a well maintained insulation system operates environmentally friendly and save operational cost. Fuel oil cost and the risk for unscheduled maintenance and repair are considerably reduced.

TI Marine Contracting AS offers a range of products to assist in keeping insulation system well maintained and effective. With more than 40 years experience in the marine low temperature insulation business, we have the experience, tools and facilities to offer competitive and effective insulation systems. All our insulation systems are fire retardant to DIN 4102 class B2 or similar and meet ISO14001 standard requirements.

Our product range within insulation service is flexible and covers a wide range from consulting, material supply and supervision to turnkey supply in dry-dock or during voyage. Being a part of Unitor's worldwide service network gives us access to valuable resources in all major ports and yards worldwide.

TI Marine Contracting has been ISO 9001 certified since 1995. An experienced pool of project managers, project engineers and supervisors forms part of the organisation. Our state of the art design and engineering tools are used to develop cost effective insulation solutions.

PRODUCTS AND SERVICES

- Inspection and status report
- Repair program and cost estimates
- Feasibility study (economical / technical analysis to reduce cost)
- Engineering and design solutions
- Documentation and class approval
- Material supply
- Supervision and installation manpower
- Repair procedures
- Training and instructions to ship's crew
- Turnkey supply comprising all or part of the above



INSULATION SERVICE



We offer sprayed on jacketing systems as coating to protect insulation surface. This can be mastic, modified silane, polymeric coatings or other suitable material.



Our newly developed spray system for LPG may be applied directly on the tank, a very cost effective solution.

LPG CARGO TANK

With high competence on polyurethane foam technology and experience from application on LPG and LEG cargo tanks since 1961, our insulation system for repairs and newbuilding is based on polyurethane foaming.

Spray Foam

Fast application and good properties make polyurethane spray foam a very efficient insulation material for LPG and LEG cargo tanks. The foam can be applied in narrow areas like underneath cargo tanks. The new generation polyurethane foam is environmentally friendly and has improved properties.

In-Situ Foam

In-Situ Foaming, i.e. injection of polyurethane foam between tank surface and metal cladding is an efficient insulation with excellent mechanical and fire properties. Application systems are developed for repair on prismatic and cylindrical LPG and LEG cargo tanks. In-situ foam can be applied on all areas of the tank.

LNG CARGO TANK

Working with insulation of spherical LNG tanks since 1972, involving production application of panel insulation, give us the experience and know-how to solve most insulation problems.

Reinforced Spray Foam

Polyurethane spray foam insulation applied outside existing insulation or as replacement in damaged areas. The spray foam will be reinforced with glass fibre mesh and surface protected with appropriate coating.

Panel Insulation

Prefabricated panel solutions for repair or replacement of existing LNG tank insulation. In-house production secures fast delivery of tailor made panels and insulation logs.



Sprayed insulation systems applied as additional insulation or replacement in defect areas. The insulation is polyurethane reinforced with glass fibre mesh



We can offer prefabricated panel solutions for repair or replacement of insulation on LNG and LPG vessels

INSULATION SERVICE

LNG & LPG PIPE

Pre-fabricated insulation sections are the key to a successful pipe repair job. Based on a thorough survey, we manufacture sections in our in-house workshop. Insulation materials are polyurethane or polystyrene in one or more layers. Jacket material is supplied according to customer specification.

Before



Areas of defect insulation, ready for upgrading

After



After maintenance and replacement of pipe insulation

PREFABRICATION

Prefabricated insulation elements and panels reduce the application time in larger maintenance projects. The application is simple and can easily be executed by the ship's crew using detailed repair procedures with or without supervision from TI Marine Contracting AS.

Special panels may be required in particular areas. We manufacture different design and sizes in various materials in our in-house factory in Shanghai, China. Time from design to delivery is kept short due to a small effective organisation and up to date production equipment including a computer controlled contour cutting machine.



GRP jacketing is applied automatically on pipe segments with high production rate in a controlled environment



Prefabricated sections replacing defect bend insulation



Prefabricated pipe insulation sections ready for installation



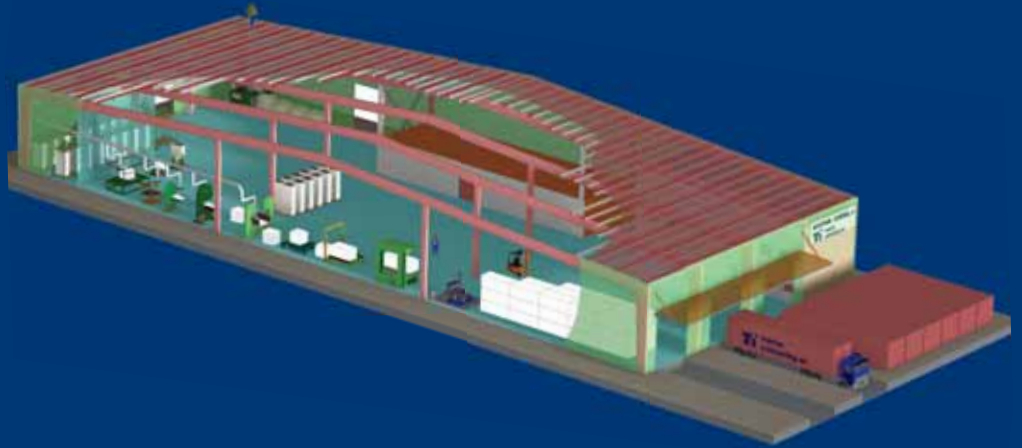
Supervision and training of ship's crew for onboard installation

INSULATION SERVICE

PANEL FACTORY

Our 3000 m2 manufacturing facility in Shanghai is specialised for manufacturing LNG and LPG insulation panels and pipe insulation elements.

This strategically located facility comprises cutting, milling, sizing and lamination equipment. DNV, LR and NK have certified the plant for production of LNG panels



Milling station for grooves and joints



Band saw station for edge trimming

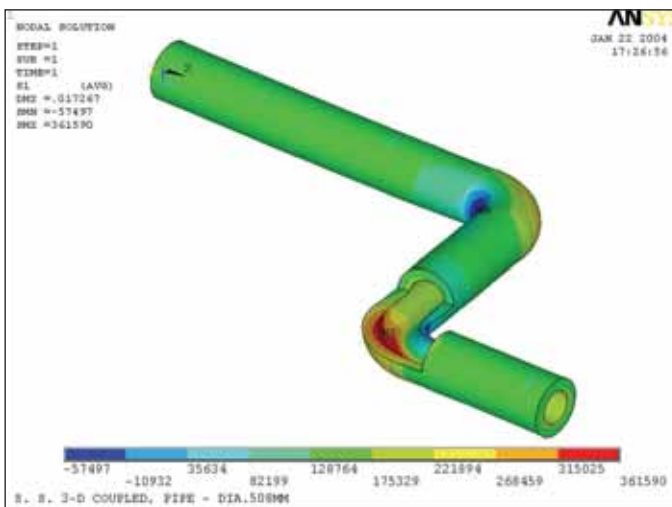


Laminate press station

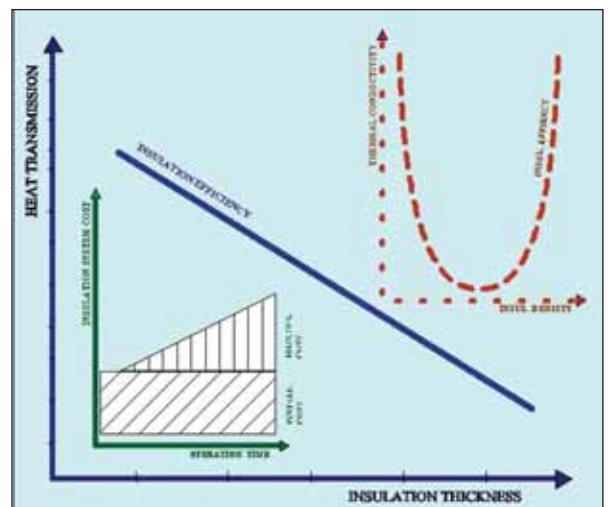


Double bandsaw trimming station

ENGINEERING AND ANALYSIS



Technical analysis (FEM) and evaluations can be offered. These are useful particularly in connection with larger upgrading projects.



We can also work out technical / economical models which may be useful before taking the decision to go ahead with a maintenance program

A matter of confidence

The real work starts when the contract is negotiated. Work must commence on time and be carried out as planned. With the size and complexity of many projects, there is no substitute for experience and know-how. Choosing the right contractor is a matter of confidence.



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