Low Pressure LNG Tank and Bunker Storage Solutions

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Feasibility Study: LPT for Ferry for short sea voyages

A ferry with limited depth: case shipping company Norden Frisia.

The aims are:

- Cost reduction of the tank with a minimum of 50% compared to the conventional Type C-tank;
- Reduction of the weight and the volume;
- Flexibel shape;
- Integration of the tank in the ferry;
- Approval in principal (AIP)

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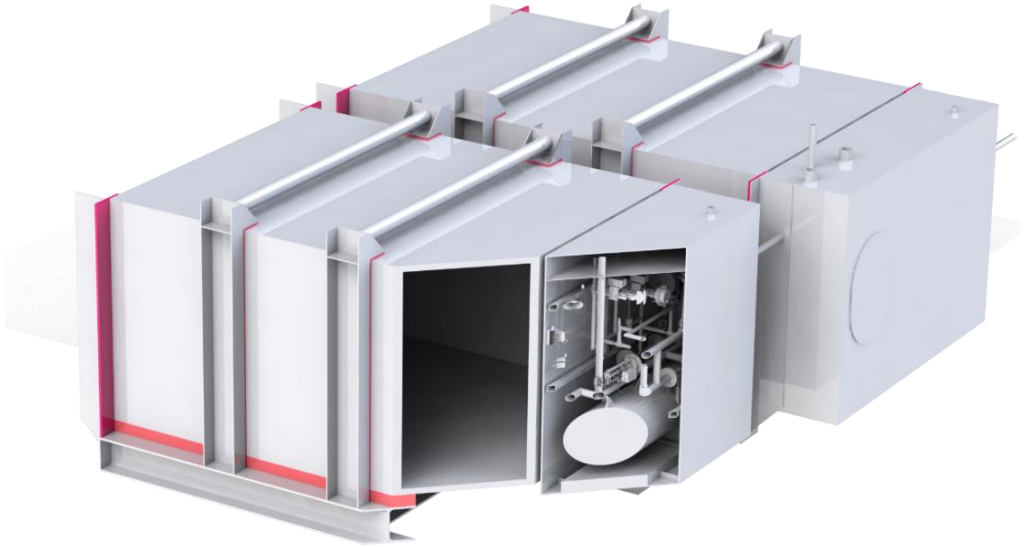

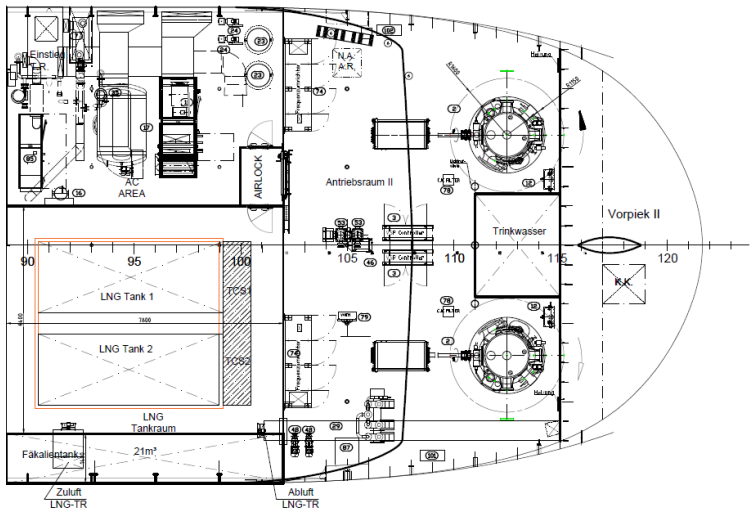

-For a case study the Wadden ferry “FRISIA III” of Reederei Norden-Frisia has been chosen to analyze the possibility to integrate the LNG as fuel by adopting the “Low Pressure LNG Tank” (LPT) for the storage of the LNG on board the ferry.

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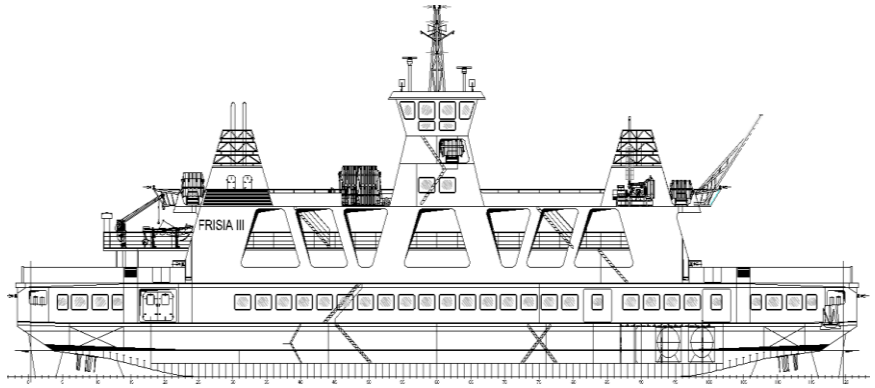
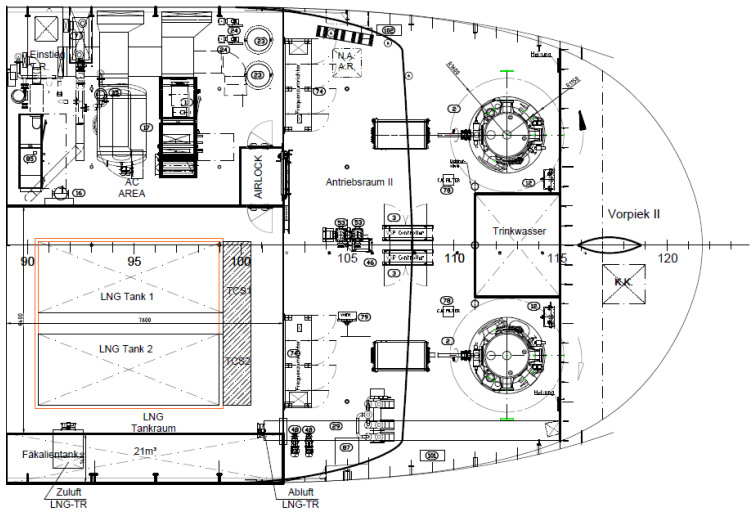
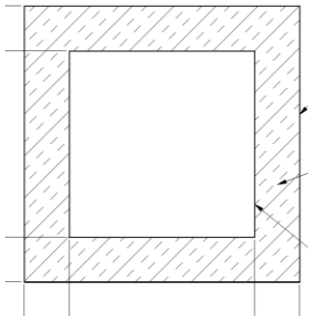




-The new LNG tank is designed as a low pressure tank based on a box-in-box principle.



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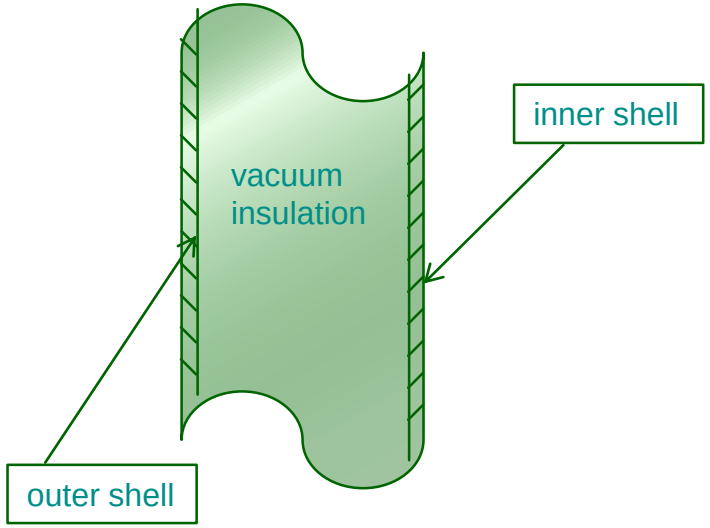
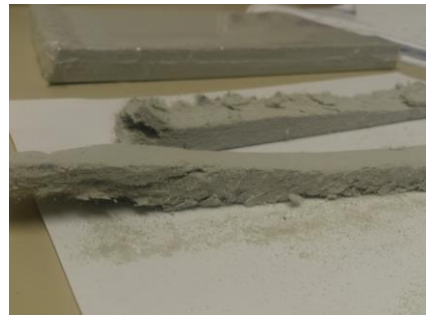


Vacupor® Insert NT is a microporos insulation material with an extremely low coefficient of thermal conductivity, i.e. with very good insulating properties. Vacupor® Insert NT consists of inorganic oxides. The main constituent is fumed silica; the other components are opacifiers for minimizing infrared radiation.



- inner and outer shell of stainless steel (inner shell: 1.3912 outer shell: 1.4301)
- wall thickness of outer and inner shell abt. 1 mm
- insulation boards withstand the external pressure of abt. 10 t/m2, caused by the evacuation

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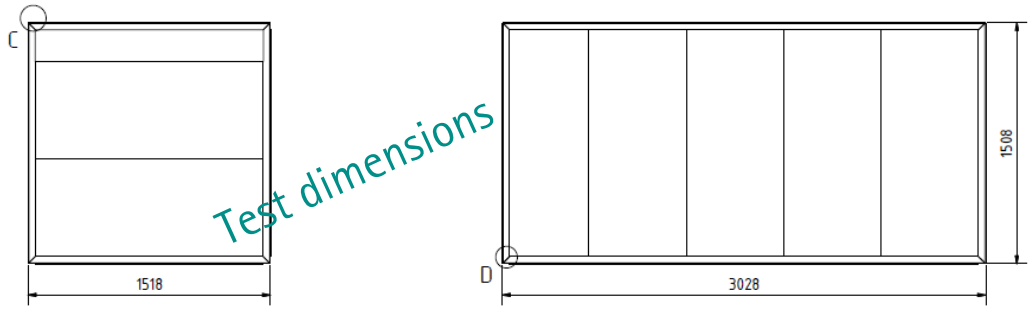

Test dimensions

-Tank capacities for the LNG consumables shall be sufficient for 3 days, at least for 2 days consumption assuming a daily sailing time of 14 hours. (Two (2) LP tanks having a 9,2 m^3 each).

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Thank you very much for your kind attention!

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