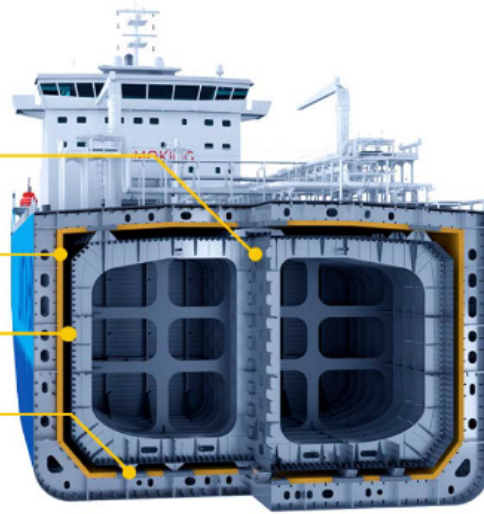


**Primary barrier:**  
Self supporting IMO independent tank type A.  
Material stainless steel or 9% nickel steel.

**Secondary barrier:**  
Liquid tight thermal insulation.  
Based on polyurethane foam panels.

**Interbarrier space:**  
Accessible space between tank and insulation.

**Cargo tank support:**  
conventional cargo tank support system.



ISchematic showing LNT Marine's LNT A-Box cargo tank design (source: LNT Marine)

## LNT type A tank system gets green light for ammonia carriage

30 Sep 2022 by John Snyder

LNT Marine's type A tank system has been granted approval in principle (AiP) from ABS for carrying liquified ammonia (NH<sub>3</sub>)



The system has been reviewed and approved in accordance with the IMO IGC and IGF code, which includes both the LNT A-Box cargo containment system and the Fuel-Box tank system for vessels to run on LNG or ammonia as fuel. The LNT A-Box containment system for carrying LNG is already installed on a 45,000-m<sup>3</sup> LNG carrier classed by ABS.

The AiP means the solution proposed by LNT Marine is feasible and is in principle in compliance with the requirements of the relevant ABS Rules and Guides and statutory codes insofar as the requirements for classifications are concerned.

The technology has previously been thoroughly assessed and approved for LNG applications and is now complemented with special considerations related to ammonia applications. The approval process has covered new aspects, particularly related to the IMO IGF code and relevant guidelines, and laboratory tests to verify material compatibility issues.

When made with renewable energy, ammonia, NH<sub>3</sub>, is seen as a potential future fuel because it does not contain carbon. Using ammonia as a hydrogen carrier has also been documented as the most economical way to ship hydrogen over long distances in a recent study by Oxford Institute for Energy Studies.

Earlier in September, LNT Marine signed a framework agreement with Keppel FELS (part of Keppel Offshore & Marine of Singapore) to work together on tank solutions designed to hold LNG and/or ammonia either as cargo or as fuel using LNT's proprietary LNT A-Box technology. The fuel tank solutions under development are suitable both for retrofitting and for newbuilds. To complement the fuel tank development, the companies are also working on bunkering barges and floating storage units to support the bunkering services.

LNT chief executive Kjetil Sjølle Strand said the AiP "has taken our tank system across a new frontier in our drive to make green ship fuel solutions. With this, a shipowner can now consider installing a flexible LNT Fuel-Box tank solution that can carry LNG today and use ammonia when this is available."

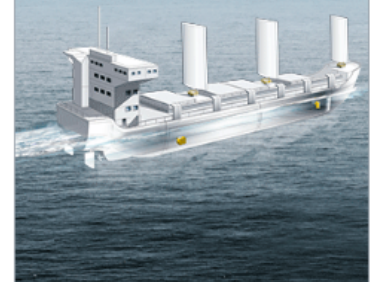
Mooring Simulation      Ship-Shore Compatibility Process



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