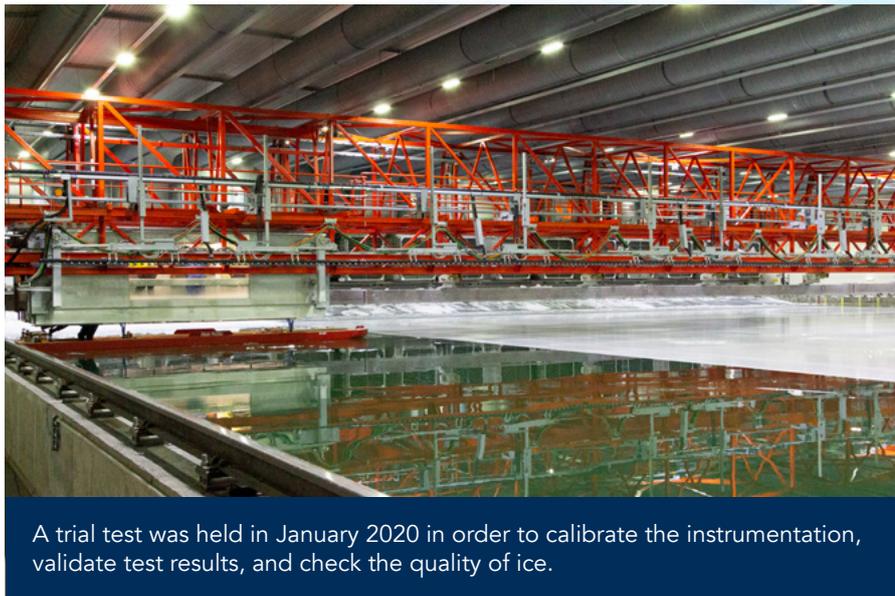


Aalto Ice Tank opens



A trial test was held in January 2020 in order to calibrate the instrumentation, validate test results, and check the quality of ice.

The square-shaped ice tank at Aalto University has been revamped and upgraded with new modern equipment. Aker Arctic carried out the first tests at the Aalto Ice Tank in January 2020.

The Aalto Ice Tank is a multipurpose basin: while mainly used for ice model tests, it can also be employed for other tests. The unique 40 x 40 m square shape allows for different testing than Aker Arctic's 75-metre-long and 8-metre-wide basin. The two test facilities are a perfect combination and their best characteristics can be used to complement each other.

Benefits for customers

"There is plenty of space available around the test model, making the Aalto Ice Tank especially well-suited for turning and manoeuvring tests where it is necessary to check a wider turning circle of a new vessel design," explains Topi Leiviskä.

In ice management tests, a large basin is practical as interaction between multiple ships can be studied. In situations where ice drift and changes in the ice drift directions are important, such tests can be carried out in the wide basin. It is additionally possible to model

ice pressure conditions in the basin, and therefore provide valuable information on these conditions.

"For projects where fixed or moored structures are planned, ice loads and ice piling behaviour can be determined," Leiviskä adds. "For example, some years ago an island was built in the middle of the basin to research how ice piles up against the shoreline."

New machinery

The ice tank was originally built in the 1980s and has been used mainly for research at Aalto University (Helsinki University of Technology until 2010) which is prominent for

investigating natural ice behaviour through various modelling methods.

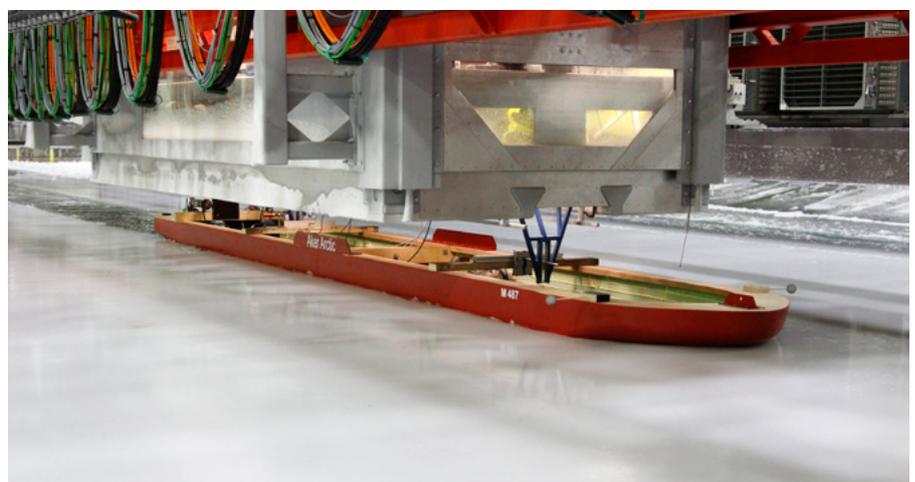
The cooling machinery has now been upgraded with modern technology for preparing model ice and a new towing carriage has been installed beneath the rail-bound bridge spanning over the entire basin. The basin additionally features a 40-metre-wide segmented wedge-type wave maker which can generate both regular and irregular waves.

Comprehensive testing services

Aker Arctic and Aalto University already had a long history of close cooperation before a formal co-operation agreement was signed in 2017.

"The university focuses on research while we can rent their basin for commercial projects," Leiviskä says. "Now that the Aalto Ice Tank is ready, our cooperation work can formally begin."

"Apart from complementing tests in a different sized basin, in some development projects it is valuable to run tests in a basin other than our own just to get a second result. We can now offer this option to our clients." ■



The cooling machinery has been upgraded and a new towing carriage installed