



Accessible power with new innovation

Future of the Fjords, one of the latest vessels from the renowned Norwegian boat builders Brødrene Aa, is built using lightweight carbon-fiber composite materials. Unlike its sister ship, the hybrid ferry Vision of the Fjords, the new catamaran is powered by batteries only. To be able to charge it in an efficient way, Brødrene Aa had to invent an entire new way to re-charge the batteries.

A power issue

Although built using the latest lightweight construction technology, Future of the Fjords will need more stored power than its sister ship since it will travel a longer distance using only batteries. Aurland Energi, which delivers 1.2 MW to charge Vision of the Fjords, was not able to supply enough power direct from the network for quick charging. Brødrene Aa, the project partners and the energy company discussed the issue and realized that an amplification of the network would become too expensive and time-consuming. In addition, new power poles would have had to be erected, making a mark on the pristine nature in the area. A suggested power cable in the sea would be even more expensive and would not be ready on time. Larger battery packs could be placed at each dock, but neither Flåm nor Gudvangen, the two villages between which the ferry operates, had enough quay space.

Coming up with the solution

Technical Manager Anstein Aa came up with the idea of building a battery pack into a floating dock. With the help of Anstein's son Torstein, Brødrene Aa are currently designing the dock in glass fiber composite. Made to handle larger vessels, it will be 40 meters long and five meters wide with an estimated height of three meters. Featuring a battery pack of 2.4 MWh and a 40 m³ diesel tank, as well as a 20m³ tank into which waste water can be

emptied, it can serve both of Aa's tourist catamarans.

Designed using lightweight Divinycell H100

The dock is being built using 1000m² of *Divinycell H100*. With excellent strength-to-weight, *Divinycell H* has a proven track record in virtually every application area where sandwich composites are employed. It is compatible with most wet resin systems and its low thermal conductivity and high thermal stability makes it especially suitable as insulation at very low temperatures.

Power Dock – A product in its own right

According to Brødrene Aa, the feedback has been beyond expectations. The dock is not just a solution for Future of the Fjords, but a product in itself. The solution, which is currently called Power Dock, is ideal for smaller quays with limited space where it can quickly be put into place without much preparation work.

Innovations that go hand in hand

If you are interested in more information on Brødrene Aa's new ferry Future of the Fjords, click [here](#).