



A passenger ferry for sustainable sightseeing

The 40 meter long and 15 meter wide vessel runs the route between Flåm and Gudvangen, with a capacity of 400 passengers. Powered by batteries while going through the vulnerable Nærøyfjord, it takes sightseeing to a new – and more sustainable – level.

Brødrene Aa constructs a hybrid-electric catamaran

Constructed in 2016 by the renowned Brødrene Aa i Hyen for the Norwegian shipping company The Fjords, the hybrid-electric catamaran Vision of the Fjords can take tourists up Norway's beautiful coast in a both silent and sustainable way. The unique design, with the brand name Seasight, allows for a premium sightseeing vessel that utilizes the very latest clean technology to preserve the ancient, natural treasure of the Norwegian fjords. Its walkways, which remind the spectator of a zig-zag path up a mountain, allow the passengers to walk around and get a good look at the scenery.

Vision of the Fjords, powered by batteries

With a top speed of 19.5 knots, Vision of the Fjords has a diesel engine, but the idea is to avoid using it as far as possible. Instead, the ship utilizes an electric hybrid propulsion system developed by ABB, and powered by Mancraft diesel or by batteries from ZEM. The idea is to only use the diesel engines for longer transit distances, but that the vessel will be powered by batteries alone during sightseeing tours in the vulnerable Nærøyfjord, a UNESCO World Heritage-listed site. The batteries can be charged either by on-shore power or by the engines on board.

Light weight is crucial

In order to reduce energy consumption and lower the battery capacities needed, the vessel needs to be as light as possible, which is why Vision of the Fjords was constructed with carbon fiber composite materials. The sleek design is not only pleasant to the eye – the light weight reduces carbon footprint and the impact on the environment. In addition, the material offers a great deal of construction freedom, allowing for a design that efficiently reduces waves and thus the impact erosion of the vulnerable shores of the Nærøyfjord.

Working together to create a winner

Diab has been working with Brødrene Aa since 1974 and has been a partner in developing the sandwich composite technology. Brødrene AA has produced several fast-going ships in Divinycell FRP reinforced panels. As an early champion of carbon-fiber sandwich constructions, Brødrene AA appreciates the reduced weight and the increased strength of the material. Compared to fiberglass sandwich and aluminium, carbon fiber provides four times the rigidity of fiberglass reinforcement, as well as two to three times the tensile strength.

Vision of the Fjords was constructed using *Divinycell H*. The material provides excellent mechanical properties and low weight. Compatible with most wet resin systems, it can be found in virtually every application area where sandwich composites are employed, including the marine, transport, wind energy and civil engineering. Its low thermal conductivity makes it especially suitable as insulation at low or cryogenic temperatures.

Vision of the Fjords is now officially a winner. Brødrene Aa received the prestigious award “Ship of the Year 2016” for Vision of the Fjords at the International Maritime Trade Fair SMM in Hamburg in September.

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