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To ensure the smallest possible environmental footprint, Color Line has actively chosen products and suppliers who can help them meet their stringent demands regarding green house gas emissions. Photo: Color Line

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**Color Line's new hybrid ship is beginning to take shape at Ulstein Shipyard. M/S Color Hybrid will serve the Sandefjord – Strømstad route with high capacity and minimal emissions.**

We have focused on saving weight at all stages of the project.  
*Robin Tomren, Project director for M/S Color Hybrid*

The world's largest plug-in hybrid vessel is 160 metres long and capable of carrying 2000 passengers or about 500 cars. M/S Color Hybrid will run on batteries in and out of the Sandefjord fjord and will thus not emit greenhouses gases or nitrogen and sulfur compounds. The noise level of the vessel is low and energy recovery high. But perhaps most importantly for those who want to take a trip over the water – the ship promises a first class experience and comfort.



GLAVA has provided fire resistant, sound and thermal insulation for the vessel

### Up to 40 percent reduction in weight

The insulation for the vessel was not only chosen for its quality. It also contributes to overall weight reduction.

«Saving weight through the insulation is important because this is placed high up in the ship. Weight reduction higher up improves stability. This increases the loading capacity even more than the weight reduction would indicate. It also saves on fuel. But there are so many factors involved that it's difficult to give a concrete figure of how much is saved,» says Tomren.

GLAVA® has provided its entire range of insulation to the vessel, both fire resistant, sound and thermal insulation. In total, the weight reduction, as compared with traditional mineral wool insulation, is between 40 and 55 percent.

[Read more about the benefits of lightweight](#)

### Good thermal insulation provides a huge heat surplus

To ensure the smallest possible environmental footprint, Color Line has actively chosen products and suppliers who can help them meet their stringent demands regarding green house gas emissions. Correct insulation and good heat recycling makes a valuable contribution to cutting these emissions.

«In comparison with our existing vessel, M/S Color Hybrid has a three times better thermal insulation capability between the inside of the ship and the outer air. In addition, the ship has a heat reservoir of 5 MWh by means of which we use heat from both the cooling water and the exhaust for heating 24 hours a day,» says Tomren.

Fosen Ulstein Design and Engineering (FUDE) designed the ship on behalf of Fosen Yard. They have put major emphasis on saving energy.



M/S Color Hybrid marks the start of a new epoch in the fjord, with environmentally-friendly solutions and a low noise level. Illustration: Color Line

«The whole ship is designed with solutions for saving and recycling energy. For example, by using the vessel's heeling-tanks, which are the ballast tanks that hold the ship stable and regulate the water line, to make hot water. This is a unique solution made possible by the ship's environmentally-friendly design,» says department manager, Elias Grønning in the project department at FUDE.

[Read about what our collaboration partner Weber delivered to the vessel](#)

### Simpler and more environmentally-friendly logistics

The ship's hull was built in Poland and then transported to Ulstein Shipyard in Sunnmøre. While it is being completed at the yard, there is a lot of moving in and out. Materials and products are transported to the yard and further manufactured into what will eventually be put on board. These are maneuvered around in the small building area inside the ship and worked on there for a while before being fitted.

«GLAVA® insulation can be compressed to such an extent that we can carry three times more on a pallet compared with traditional wool solutions. With the volume we are talking about, this amounts to 25 to 30 fewer trailer trips. With 22 pallets to a trailer, this makes transport to the building area easier,» says Kjetil Bjørgen, Key Account Manager Marine/Offshore at GLAVA®.

**Video: Lars Fillip shows the solutions**

## FACTS

- Project: World's biggest plug-in hybrid vessel M/S Color Hybrid
- Project years: 2018-2019
- Builders: Color Line
- Entrepreneur: Ulstein Shipyard
- Products: GLAVA® has delivered products from U seaprotect

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## GLAVA® lightweight



## U SeaProtect Minimize weight



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