GF Piping Systems

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COOL-FIT

Fassmer Shipyard resolves condensation issue in HVAC application

The German builder of special purpose vessels, the Fassmer Group, relies on pre-insulated thermoplastic piping systems to tackle condensation and corrosion in HVAC applications

Operational safety for a specialized high-performance vessel

Using COOL-FIT, GF Piping Systems' pre-insulated plastic piping system, Fr. Fassmer GmbH & Co. KG, a leading German shipyard for specialized high-performance vessels, addressed a condensation issue in the HVAC piping system. The solution, used in one of their latest projects, also brought several other benefits and efficiencies to the customer's operations.

Project background

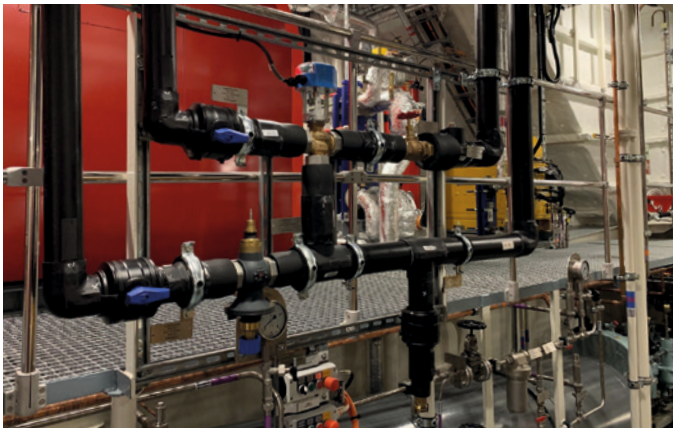
Fassmer is renowned for innovative designs, cutting-edge technologies, and high-quality standards. The shipyard has planned a series of four specialized high-performance vessels on behalf of a German owner. When designing the piping systems of special operations vessels, the reliability and operational safety of materials and components are crucial. HVAC and cooling systems are needed to ensure the safety and comfort of the crew. Selecting the right piping system can help ensure that the vessel can fulfill its mission effectively. Fassmer designed and equipped the series' first three vessels with traditional metal systems and post-installed soft rubber foam insulation and mineral wool to provide the best possible operating conditions on board the project. After being in service for some time, the ship's operators faced condensation issues with the metal solution, and parts of the insulation were damaged.

Selected technical solution

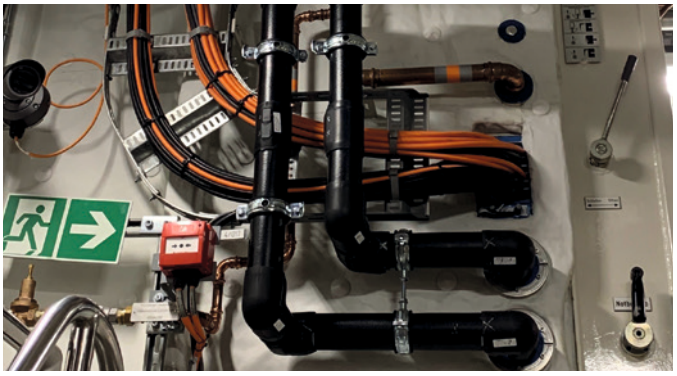
With a strong focus on the quality and sustainability of their projects, Fassmer has decided to look for an improved solution for the execution of the fourth and last one of the ships. Although the ship design was originally laid out for an HVAC piping system made of copper and steel, Fassmer decided to install the pre-insulated COOL-FIT system by GF Piping Systems. COOL-FIT pipes, fittings, valves, and tools consist of a medium-carrying PE100 pipe, a high-energy insulation foam, and a protecting HDPE pipe jacket, providing an extra layer of insulation and protection. Sealing lips ensure vapor-tight insulation and help to avoid condensation and resulting corrosion. During installation, the challenge was to adapt the system to the existing metal design. Still, thanks to the engineered components and the electrofusion technology, Fassmer could install the system without problems. The insulation step became obsolete thanks to the pre-insulated parts of the new solution.

Achieved improvements

Overall, Fassmer´s decision to install the marine-approved COOL-FIT system (ABS, BV, DNV, LR, RINA) on board their project has solved the condensation issue. It will also bring several other benefits to the owner and operators of the vessel: With the maintenance-free plastic piping system, the German owner can rely on an energy-efficient, lightweight solution for their HVAC system for the entire service life of the ship.



Pre-insulated pipes, valves, and fittings help to increase the operational safety and energy efficiency of the newly built high-performance vessel.
Source: Fassmer



Thanks to engineered components, planning support as well as customizing opportunities, the system can also be adapted to individual customer needs.
Source: Fassmer

Customer Benefits

- **The condensation- and corrosion-free plastic piping system ensures long-term reliability and energy efficiency, reducing the need for regular maintenance and improving the overall vessel performance.**
- **Damage prevention through pre-insulated components with HDPE outer jackets, eliminating the risk of insulation damage and energy loss.**
- **A fast and easy installation process with engineered components and electrofusion jointing technology saves time and effort.**

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