



Quick-Lock® adhesive-bonded Joint



Complete seawater systems for TransAtlantic special RoRo using Bondstrand® GRE pipe

TransAtlantic mainly transports large rolls of paper from Finland to Sweden and other European harbours. These rolls of paper are transported in so called SECU containers. These containers are higher, wider and longer than standard 40 ft containers. Each SECU container can carry up to 90 tons of cargo. The TransPaper is a RoRo vessel specially designed to carry this type of containers. As these vessels operate on a tight time schedule, system reliability is a must and Bondstrand pipe systems have proven to be an extremely reliable solution. Based on this, together with positive experiences with other vessels, TransAtlantic decided to use GRE for critical systems wherever possible. Furthermore, it results in a weight saving that reduces the ship's own dead weight.

The ship was built at the Aker Finnyard in Rauma. The design of the ship puts the engine room in the fore ship. Because of this, the vessel is equipped with a 125 meter long propeller shaft running through a pipe duct. There are a number of pipe systems next to the shaft such as the ballast lines and cooling water systems. The cooling water and ballast water pump room are located in the midship. To allow a modular construction of the vessel, the pipe systems in the duct were completely prefabricated ashore as ready skids.

YIT installed the partly prefabricated spools (by NOV Fiber Glass Systems) in the skids. As a number of skids were to be lined up in the pipe duct, it was decided to use a mechanical joint to interconnect the GRE pipe. NOV Fiber Glass Systems was a partner for the yard in finding the correct solutions and also obtained the required Case Approval from the Class society.

Part of the spools were made in the south of Spain and a part in the Czech Republic under strict NOV Fiber Glass Systems Quality Control. NOV Fiber Glass Systems dedicated project engineers enabled successful completion of this project by acting as a central hub between the companies involved located in the far south, far north and east of Europe.

Project

Transpaper (NB 348), TransPulp (NB 349) and TransTimber (NB 350)

Shipyard

Aker Yards Oy, Rauma – Finland

Owner

Rederi AB Transatlantic, Skärhamn – Sweden

Pipe system

Bondstrand 2000M with Quick-Lock® adhesive-bonded joint. Bondstrand (GRE) expansion couplings with Key-Lock mechanical connection.

Various diameters ranging from 2-18 inch (50-450 mm). Total quantity: 440 metre per vessel plus prefabrication of several systems.

Service Conditions

Operating pressure:	maximum 6 bar
Operating temperature:	ambient to 70°C
Design pressure:	10 - 16 bar
Design temperature:	90°C
Test pressure:	5 - 9 bar

Installation date

2005 - 2007

Scope of Supply

All seawater piping:

- Main engine cooling;
- Ballast water system;
- Deck-wash;
- Vent piping.

Design

Aker Finnyards were responsible for the design. Spool drawings, headloss calculations and (part of the) stress analyses for the Engine Room were provided by NOV Fiber Glass Systems.

Installation

Some of the prefabrication and installation was supplied by the Scandinavian installation company YIT. The prefabricated GRE pipe spools were produced by NOV Fiber Glass Systems representatives PipeSpain (Spain) and Zefyr (Czech Republic).

Approval

All Bondstrand Glassfiber Reinforced Epoxy (GRE) pipework was Type Approved and witnessed by DNV during the entire process of manufacturing and installation.

Standard

IMO A.753(18) L3 Fire Endurance

Custom Fabrication

To facilitate easy removal of the valve and suction head, the ballast line branch is mounted on a type of manhole cover. Dimensionally, the suction bell was designed in such a way that it fits through the manhole opening.



Ballast pump room



Seawater cooling system



Ballast system



Seawater cooling pump room