

SEISMIC VESSEL "GEOWAVE MASTER"

SHIPYARD Astander, Santander, Spain

SHIP OWNER Geo Shipping

**DESCRIPTION OF THE PROJECT**

This vessel was originally built at a shipyard in Japan as a cable layer. In 2007 the vessel was rebuilt to a seismic vessel at Astander located in Santander, Spain. The rebuilding was designed for ship owner Geo Shipping by ship designer Sawicon. All the accommodation including HVAC systems was removed and replaced.

The contract for Novenco has included functional design and engineering, delivery of equipment and on-board testing of the complete HVAC plant.

Vessel data:

Length overall:	114,3 m
Beam:	19,6 m
Crew:	60 pers.

The vessel is capable of moving from harsh winter conditions of -20°C to extreme tropic conditions of 40°C and 70% relative humidity, keeping a high comfort indoor climate for the crew.

CHALLENGES

It is a large vessel with high focus on quality, functionality and comfort.

The fact that it was a rebuilding gave as usual plenty of challenges to all parties involved.

Shipyard was a new client for Novenco and the rebuilding time was extremely short (approx. 7 months).

SOLUTIONS

The success of integrating well-functioning HVAC-systems in a ship requires a good cooperation between shipyard, ship owner, ship designer and HVAC-supplier.

The fact that it was a rebuilding, combined with the high focus on quality, functionality and comfort required Novenco to put on an experienced team of engineers. They chose quality products, designed systems according to rules and regulations, and they designed the duct systems carefully to reduce noise and pressure loss.

Environmental friendly design requires high efficiency equipment to reduce the power consumption and finally reduce the emission to air from power plant.

This vessel has installed enthalpy exchangers for the main air handling units, recovering 70% of the energy. AHU fans are capacity controlled according to system pressure. Engine room fans are of high efficiency type, improved with automatic frequency drives to adjust the airflow according to the actual need of the engine room machinery. Novenco's name on such environmental friendly design is *e Vent™*.

SCOPE OF SUPPLY:

SERVICES PROVIDED:

Project management
Engineering and functional design
Calculations
Drawings
Documentation
On-board commissioning of all HVAC-systems

EQUIPMENT:

2 Air handling units for accommodation incl. enthalpy exchangers
Cabin units
Air handling unit for Wheelhouse/defroster system
Air handling unit for Galley
10 Air handling units for cooling of technical spaces
5 Fan coils
4 Axial flow fans
1 Centrifugal flow fans
17 Smaller fans
2 Chiller units
Control panels and frequency converters
External louvers
Regulating valves for chilled water system

SYSTEMS:

We have supplied a high pressure single-pipe re-heat system, which is basically a single duct air conditioning system with re-heating coils built into the cabin units. In this system temperature and air flow can be varied independently in each room during winter conditions.

