



Case Study
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Marine Sewage Treatment

Five New Class 130 Corvettes of the German Navy will be equipped with MEMROD® LT Membrane Bioreactors

The German Navy as the operator of five new ultra-modern corvettes has decided to use the MEMROD® LT membrane bioreactor for on-board sewage treatment. The new vessels with a speed of more than 26 knots will have a total length of 89 m and are built in the shipyards of ThyssenKrupp Marine Systems of Germany.

Due to the specific operating conditions at sea, wastewater treatment systems for naval vessels must not only provide optimum performance, but also need to be designed in a manner that addresses the need for low noise emission and resistance to external impact loads.

The on-board wastewater is collected via a vacuum system. In order to ensure optimal performance of the biological system, a flotation unit separates the oil and grease contained in the galley wastewater before it enters the MEMROD® LT membrane bioreactor. The effluent quality is significantly better than the specifications of the IMO-International Maritime Organization (MARPOL, Annex IV) and USCG/Alaska rules. The MEMROD®-System also already fulfills the future standards of MEPC.159(55).

The new vessels are designed for worldwide operation, also in coastal areas. The corvettes' port of registry will be the German harbour Rostock-Warnemünde.

Design data of the sewage treatment system:

Capacity:	65 persons
Hydraulic load:	10 m ³ /d
BOD load:	6 kg/d
Delivery:	2006 - 2008