

German Navy Tender (Type 404)

BIOLOGICAL STKS 110 WITH
FIXED FILM TECHNOLOGY

Task

MARTIN Systems has been contracted to review the existing wastewater treatment system and to upgrade the German Navy Tender 404 with a vacuum evacuation system for black water and a biological fixed film system to meet the Navy's updated complex wastewater management requirements.

Ship Details

The type 404 Tenders are designed for the provision of fleets with fuel, water, food, spare parts, munitions and other equipment. In addition, specialists on board can support the fleets for maintenance and services on sea. The Type 404 is also tasked with waste disposal and a flight deck permits helicopter operations.

Wastewater Management

The plant consists of an integrated buffer with an upstream installed fine screen, followed by Biolace® fixed film technology and a clarifier. There is also a new vacuum system integrated. The water from the kitchen is pre-treated by flotation. The STKS 110 operates fully automated and is integrated into the ship's central control systems.



Treatment Capacity

Population Equivalent (PE)	110
Max. throughput (m ³ /d)	17
BOD ₅ input (kg/d)	9,9
Aeration tank volume (m ³)	9,3
Clarifier (m ³)	2,5

Final Effluent Quality

The final effluent exceeds all requirements given by the IMO (International Maritime Organization), the German "Seeberufsgenossenschaft", Germanischer Lloyd and the German Navy.

