



# ACO Marine

Advanced wastewater solutions  
for the marine and offshore market



# ACO Marine

## Advanced Wastewater Solutions

### Environmental solutions for the marine and offshore market

ACO Marine is a member of the international ACO Group with a sales and service network world-wide. Their unique environmental solutions are used primarily in wastewater technology, wastewater management and drainage systems.

The wide range of products includes advanced membrane bioreactor systems, conventional extended aeration with 'bio-sword' filtration sewage treatment plants, vacuum technology products, push-fit pipe systems in both stainless and galvanised steel and fully automated high capacity grease separators.

ACO Marine develops in-house solutions from its ISO 9001 accredited production facilities, all of which are located entirely within the EU.

The main features of the ACO Marine product range are:

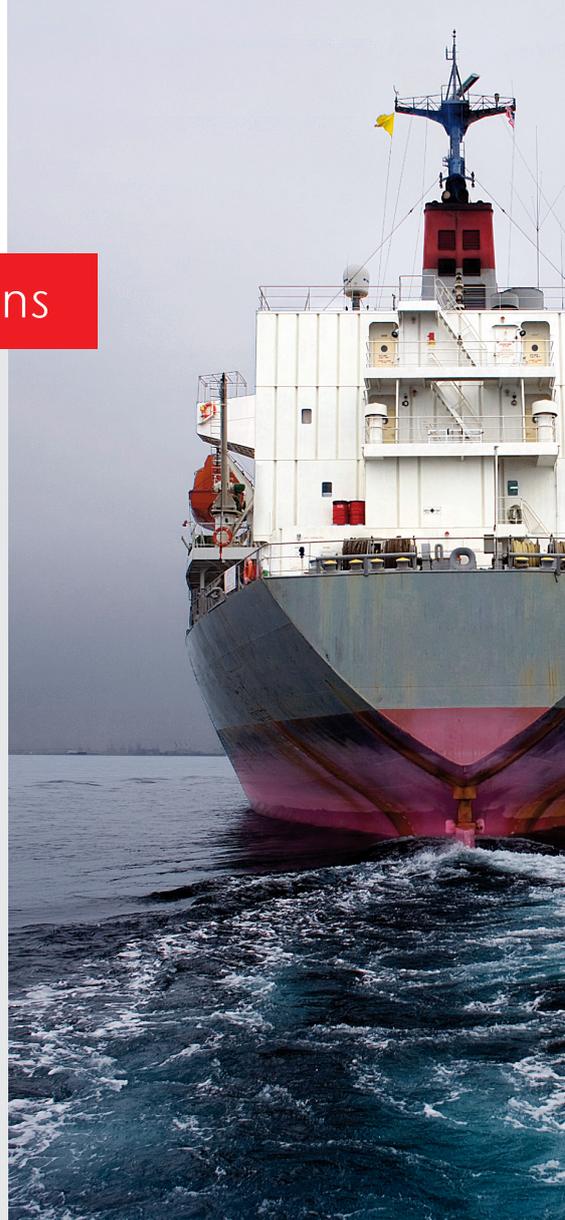
- Environmental system concepts
- High performance standard according to the very latest standards and legislation
- Reliability
- Quality Management is certified according to ISO 9001:2015 & EC MED Module D
- Innovative technologies
- Flexible and adaptive approach to bespoke solutions
- Recognised technologies, certified and installed worldwide on all vessel types

As a reliable partner, ACO Marine provides competence, quality and a high level of effectiveness in environmental shipbuilding worldwide - from initial design through to final handover and through-life support of the product.

#### **Not all our products are as eye-catching as our luxury yacht polished scuppers.**

ACO products are developed and designed to function reliably, year after year, even though their presence goes largely unnoticed.

At ACO Marine, we strive for perfection in every detail. After all, even products of the highest quality can always be improved. Our engineers operate ongoing research and development programmes striving for innovation and enhancements to all aspects of projects - no matter how large or small.





**5.000**

Employees in 40 countries  
(Europe, America, Asia,  
Australia)

**1.1 Billion**

USD sales in 2023

**30**

Production sites  
in 15 countries

# ACO Marine products

## Advanced wastewater solutions



ACO Maripur NF

Membrane Bio Reactor (MBR)

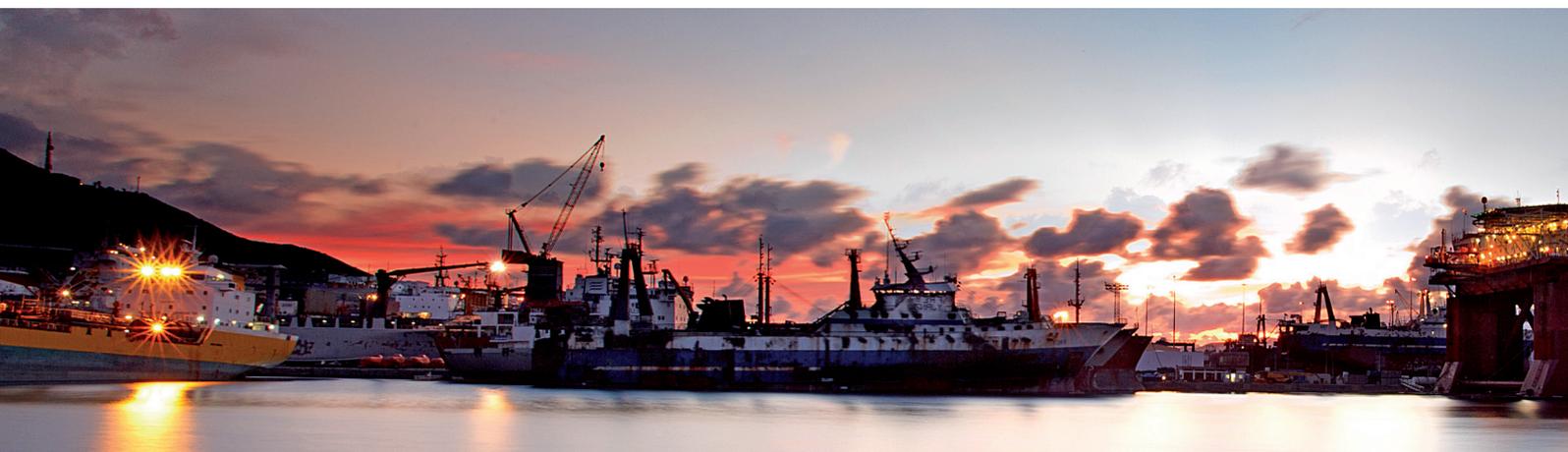
- Type Approved to IMO MEPC 227 (64) and MED Module B
- Bespoke solutions with complete ship system integration
- Compact process enabling limited space on ships and other marine structures to be used more efficiently
- AISI 316L stainless steel construction throughout
- Extremely simple automated operation compared to 'conventional' MBR solutions
- Compatible with both gravity and vacuum collection systems
- Modularisation - wastewater transfer pumps and vacuum collecting systems can be shelf mounted onto ACO Maripur NF to reduce installation complexity and footprint size
- Designed to treat all wastewaters (black and grey water) in one reactor reducing the need for more costly, heavier and larger alternative solutions
- Retrofit options. ACO Maripur NF is available, on a project-by-project basis, in modular sections to allow easier access



ACO Clarimar MF

An Advanced Treatment System

- Type Approved to IMO MEPC 227 (64) – excluding §4.2 - with EC MED Module B
- High performance ACO PP-B GREY tank material with a life-time guarantee against corrosion
- Designed to treat all waste water streams (black and grey water) in a single unit
- Compatible with both gravity and vacuum collection systems
- Flat-Pack solution for unique retrofit installation
- UV sterilisation – no chlorination and de-chlorination dosing
- Manufactured in the EU entirely from high performance materials which, unlike coated black steel, are completely corrosion resistant and light weight
- Modular design concept for simple installation requiring only one power connection, even when a vacuum system is directly mounted
- Lowest running costs of any sewage treatment plant on the market with minimal operator intervention





## ACO Lipator

Grease Separation System

- Galley water treatment unaffected by vessel movement and vibration
- The ACO patented internal design ensures effective separation of grease and sediments even during peak load periods
- Grease and sediment removal can be either fully automated, semi-automated or manual as required by the specification
- Grease and sediment removal occurs without interrupting separator operation
- The separation technology ensures the greases and sediments are highly concentrated, only grease and sediments are disposed of with minimum surplus water
- Heating and short residence time ensures grease is not deposited on the chamber walls
- Internal maintenance and cleaning is therefore reduced to an annual inspection only
- Available in stainless steel 316L grade



## ACO Vacuum System

Vacuum Generation Unit

- The ACO PowerVAC vacuum pump station for centralised vacuum collection and transfer systems
- The ACO PowerVAC improved design allows a transfer of wastewater directly to a wastewater treatment plant or holding tank without the need for a temporary collection reservoir
- The compact, close-coupled pump design provides a small footprint which makes the unit ideal where space is limited
- The ACO PowerVAC unit is simple to install and service thanks to its compact and well thought-out easy-to-maintain design



# ACO Marine products

## Conventional wastewater solutions



ACO Marine Drainage

Hygienic Channel & Scupper

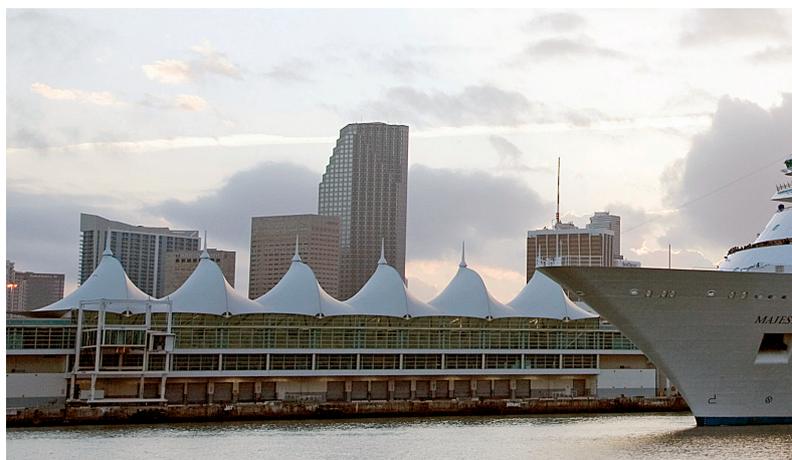
- The ACO Marine EG150 range of scuppers is designed to provide hygienic, quick, simple and economic trapped drainage solutions for washrooms, toilets, 'wet' bathrooms, changing rooms, galleys, swimming pools, etc.
- Manufactured from austenitic 304 and 316L grade stainless steel as standard; excellent corrosion resistance is guaranteed
- Additional features include compact design, removable in-line foul air trap is fitted as standard, with a choice of vertical or horizontal spigot outlets, telescopic height adjustment and full rotational adjustment for tiles, wall or equipment alignment
- ACO Marine provides a wide range of stainless steel hygienic channels and scuppers for food processing areas and galleys



ACO Push-Fit Pipe Systems

Stainless Steel & GM-X

- The ACO Pipe system has a proven high resistance to aggressive media. A comprehensive catalogue of fittings offers, in connection with ACO drainage technologies (scuppers and channels), a truly versatile complete system solution
- Simple assembly and installation provide a high level of savings for the installer when compared to conventional pipe systems. Excellent corrosion resistance makes the stainless steel ACO Pipe push-fit pipe system a much more cost efficient solution
- Available with external epoxy coating
- The ACO Marine GM-X push-fit pipe system is made from Galvanised steel and meets all the requirements of both the ship building and offshore industries and as such is recognised and approved by all leading maritime registers worldwide





ACO Biological Grease Traps

- ACO Marine offers Biological grease trap working on simple principle: a biological activator is periodically injected into the connecting drainage pipe upstream of the trap. The mixture of contaminated water and activator flows into the trap and through a sediment basket. The sediment basket removes any large particles that may be present in the drain water. It is important to note that the sediment basket volume is limited, therefore any significant amounts of debris should be removed before entering the grease trap
- The physical capacity of the trap provides a separation area where relative density differences allow finer solids to settle to the trap bottom and less dense FOGs to rise to the surface
- Separation occurs relatively quickly, thereby allowing less contaminated water to flow to the outlet drain during periods of intense use
- Manufactured from Austenitic steel 316L or from PE HD



ACO Transfer and Lifting Stations

- ACO Marine offers an extensive range of transfer and lifting stations for a variety of technical applications
- Sewage transfer stations are available to transfer the wastewater from Holding Tank into STP
- Equipped with monobloc centrifugal self-priming horizontal pump
- Capacity of transfer station is optimized to feed STP with small volumes of wastewater based on signals from STP
- Condensate lifting stations are available to transfer highly acidic condensate water from HVAC systems
- Galley water lifting stations are available to transfer water from Grease separator to Holding Tank



# ACO Marine products

## Conventional wastewater solutions



ACO Aeration Stations

- WasteWater Holding Tank(s) and Sewage Sludge Holding Tank(s) are to be equipped with aeration blowers and aeration elements to prevent sedimentation and possible anaerobic conditions within the holding tanks
- In the WasteWater Holding Tank(s) this will also serve to encourage the biological process beginning within the WasteWater Holding Tank(s) itself prior to transfer to the STP
- Specification of blowers along with the design of the aeration element arrangement is based on the specific volume and height of each tank



ACO Lint Filter

- ACO Marine offers a range of lint filters for lints removal from laundry water
- Available in stainless steel 316L grade
- Three nominal capacities are available for optimized fit into ship's grey water collecting system
- Three level of sensing for the best fit into ship's wastewater management system





ACO Discharge Station



ACO Services

- ACO Marine offers an extensive range of discharge stations for a variety of technical applications
- Discharge stations are available to discharge wastewater from Holding Tank directly overboard
- Equipped with monobloc centrifugal self-priming horizontal pump
- Two nominal capacities are available for optimized and fast discharge overboard
- Discharge station is available in either single or dual (duty/stby) pump configuration

- Team of ACO Marine Engineers, Project Specifiers, Electricians, Biologists and Service Technicians is available to provide various range of pre- and after sales services, including surveys on board and regular maintenance visits



# ACO Marine Black and Grey Water Management



ACO Scuppers



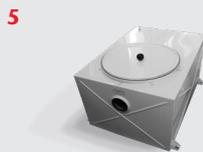
ACO Channels



ACO Push Fit Piping System



ACO Lipator  
Grease Separator



ACO Biological  
Grease Trap



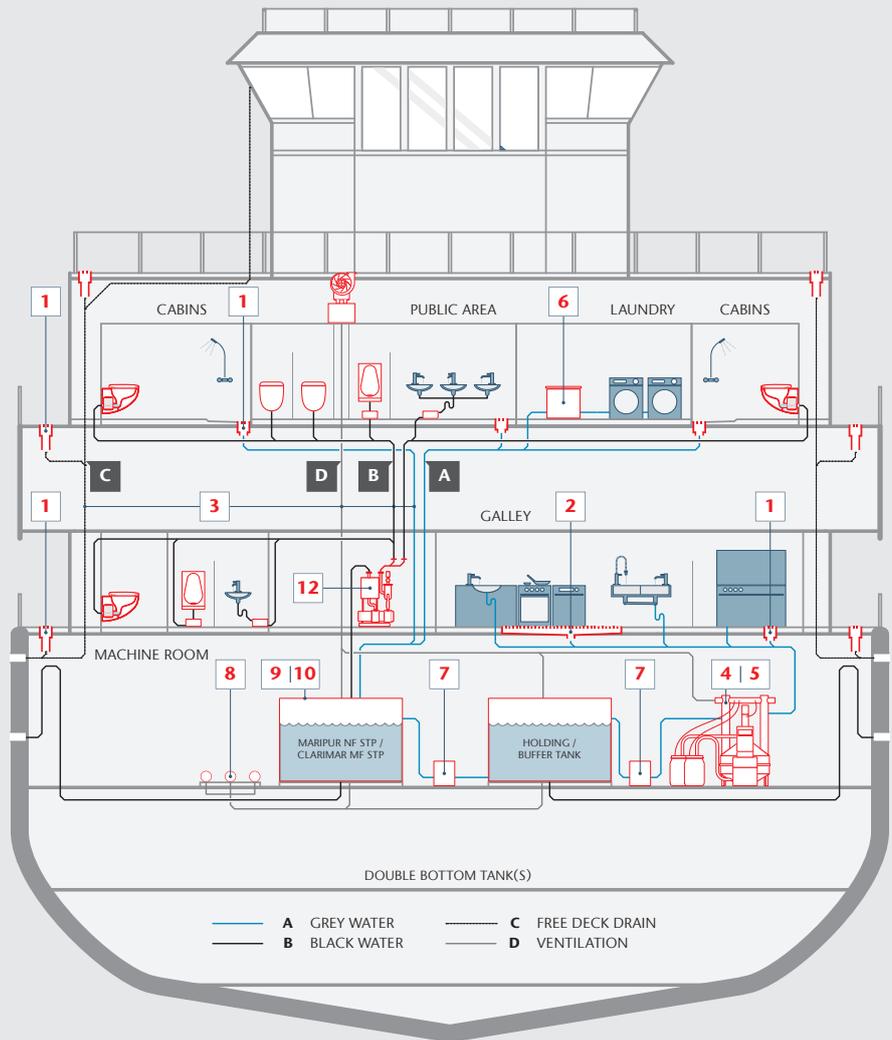
ACO Lint Filter



ACO Transfer and  
Lifting Station



ACO Tank  
Aeration Station





**ACO System chain**  
 Marine solutions  
 for tomorrow's  
 environmental  
 conditions

12



ACO Vacuum  
 Generation Unit

11



ACO Discharge Station

10



ACO Clarimar MF

9



ACO Maripur NF



**Marine Drainage**

- ACO Scuppers **1**
- ACO Channels **2**

**ACO Push Fit Pipe System **3****



**Grease Management**

- ACO Lipator Grease Separator **4**
- ACO Biological Grease Trap **5**

**ACO Lint Filter **6****

**Wastewater Treatment Plants**

- ACO Maripur NF **9**
- ACO Clarimar MF **10**



**Lifting & Transfer Stations**

- ACO Transfer and Lifting Station **7**
- ACO Tank Aeration Station **8**

Each product from ACO Marine  
supports the ACO system chain



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