



USON MARINE

global environmental issues

Global warming and water pollution are among the great challenges of our time. Tighter environmental regulations and environmental standards such as ISO 14000 are central to the environmental challenges we are facing today.

ISO 14001 certified organizations are committed to protecting the environment and improving their environmental performance. Although IMO Marpol 73/78 covers a wide range of environmental aspects, ISO 14001 goes far beyond it by including all possible interactions between the vessel and environment.

Vessel design and onboard waste handling are of great importance in an environmental management system.

Effective waste management demonstrates environmental responsibility!

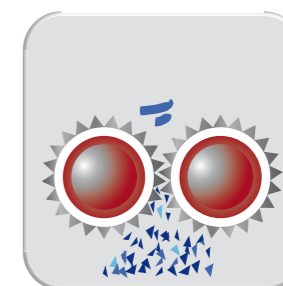
General philosophy waste management



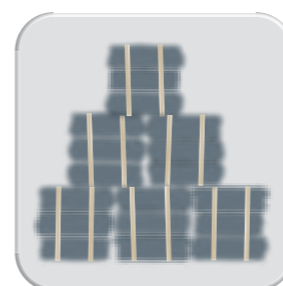
ENVIRONMENTAL POLICY
– ensures compliance with mandatory regulations and shows awareness of the need to protect the environment. Also aims to prevent generation of waste onboard.



COLLECTING
– waste handling stations for sorting different waste fractions should be strategically located. From these waste is delivered to an indoor garbage handling room for processing.



ONBOARD PROCESSING
– compactors, shredders and crushers reduce the volume of the waste which then requires less space requirements for storing. Food waste is treated in a separate food waste handling system.



ONBOARD STORAGE
– garbage should be stored in a manner which avoids health and safety hazards. Food waste and dangerous waste should be kept separate from the other garbage.



RECYCLING/DISPOSAL
– recycling is the preferred option to disposal as recycled waste is a valuable resource. All disposal of waste is regulated by IMO regulations and local regulations.



AUDIT & EDUCATION
– demonstrates that the environmental management system is operating effectively and in conformity legal requirements. Increases environmental awareness onboard.



food waste system

The Usen One-way macerator system is designed for hygienic transportation and treatment of food waste in compliance IMO Marpol 73/78 Annex V, U.S. Coast Guard, etc.

Food waste is ground by local macerator(s) in the galley and transported by vacuum to a special holding tank, which is designed for food waste. This makes it possible to run the system when the vessel is operating within an area where discharge is prohibited.

The system safely handles food waste and is easy to install, with low water consumption, small pipe diameter and flexible pipe routing.

Suitable for retrofit on board existing vessels or new builds, the macerator is guaranteed to avoid any blockage of food waste in the piping system.

Food waste is not defined as 'sewage' and should not be mixed with either black water or grey water. Food waste discharged to a sewage treatment plant will contribute to increased levels of BOD (biochemical oxygen demand), TSS (total suspended solids), grease & oil, etc.

All galley grey water from the scuppers and sinks should pass a grease separator before it is discharged to the grey water tank. The separated grease is pumped to the sludge oil tank or to a grease holding tank.



1. LOCAL MACERATOR STATION
2. HOLDING TANK
3. DOUBLE-ACTION PUMP UNIT
4. USON GREASE SEPARATOR

dry waste system

Our systems for dry shipboard solid waste include marine compactors & baling presses, glass crushers and shredders. These can reduce the volume of ship-generated waste by approx 80% (depending on the fraction). All our units are designed for demanding marine conditions and fulfil marine & offshore standards.

Waste handling stations for sorting different waste fractions should be strategically located. From these waste should be delivered to an indoor garbage handling room for processing.

The complete system will assist the crew in collecting, sorting, treating and storing the waste onboard and help them to comply with regulations worldwide. The treated waste is transported onshore for recycling.

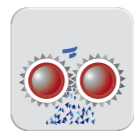
Waste recycling

A strategy of waste recycling should be adopted and documented. Recyclable wastes are: (1) plastic, (2) metal such as aluminium, (3) glass, (4) cardboard & paper.

NOTICE! The garbage handling room should be located in the area where most of the waste is being generated – close to the galley and the accommodation area.



COMPACTION



SHREDDING



CRUSHING





SEPARATE CHUTES
FOR DIFFERENT WASTE
FRACTIONS FOR
EASY SORTING AND
TRANSPORT.



transportation **Chute**_{systems}

Uson's Chute system is designed in accordance with IMO SOLAS for (a) general dry waste, (b) glass, (c) tins and (d) laundry. It is a cost effective and efficient means of transporting waste to collection sites below and minimizes the risk for cross contamination.

Space saving options such as shredder compactor or glass crusher installed under the chute minimize waste volume and also ensures saving on expenses in port.

The chute segments are delivered in pre-fabricated, ready-cabled, insulated modular segments for quick and easy installation. Minimum welding work is required due to the push-fit design.



after **sales**

service & support

Uson Marine has 25 years of experience of waste management in the maritime industry. We tailormake services and systems for different waste handling applications and can provide worldwide service through our network of representatives.

- **Continuous improvement**
 - System upgrades
 - Engineering support
- **Rental and leasing**
- **Garbage Management Plan**
- **Service agreements**
 - Commissioning
 - Preventative maintenance
 - Training
 - Survey
- **Service support**
 - Technical documentation
 - Spare parts

Uson Marine is a leading provider of waste management systems for the maritime industry. Through increased waste recycling we assist our customers and their clients to reduce the environmental impact of their operations.

We can assist in each stage of the process from design to installation, surveys, commissioning and training of the crew. By using our wide knowledge and experience we assist our clients in complying with current and future regulations, whilst at the same time improving their environmental image and reducing their cost for handling of ship-generated waste.

USON MARINE

Tel: +46 8 556 717 00 · Fax: +46 8 556 717 01 · www.usonmarine.se

Postal address:
P.O. Box 6037, SE-164 06 Kista, Sweden