

Sealift2 Waste Water Treatment System – Rev - 01/09/13



Sealift2/SD floating dry dock is the most advanced eco friendly hull cleaning platform available today. All waste water from hull cleaning operations is collected and pumped into a settlement tank for the removal of heavy solids such as barnacles and seaweed. Waste water then passes through a fully automatic on board waste water treatment plant which removes all of the typical contaminants in marina waste water including metals, COD, BOD, oil and suspended solids, enabling the treated water to be discharged back into the sea in full compliance with EU Regulations on Urban Waste Water Treatment – Directive 9/271/EEC.

The water treatment plant is a Chemical-Physical Depuration system with an integrated Plate Coalescing Oil Separator (PCOS). In the first stage of treatment, waste water passes through the CPOS where non emulsified oil and hydrocarbons are automatically skimmed into a separate drum for disposal.

The waste water then passes through three separate processes:

- The chemical precipitation stage where caustic soda is added to reduce the solubility of the dissolved metals
- The coagulation/flocculation stage where polyelectrolyte is added in a slow mix compartment which causes the solids to be agglomerated into sturdy, fast-settling particles.
- Clarification where the heavy solids settle out of suspension and clean water is extracted.

The clarified water is then passed through an activated carbon/natural zeolite filter to remove any remaining trace metals before the clean water is discharged back into the sea. The solid material which is collected during the Clarification process is trapped in filter bags for later disposal using a registered waste disposal contractor. Any water which drains through the filter bags is returned to the water treatment plant for processing.

The entire plant is fully automatic and electronically controlled to ensure that the discharge of clarified water is immediately stopped in the event of any part of the various stages of the process failing. For example if the chemical dosing stations run out of chemicals, an alarm is given and the entire plant is automatically stopped.

BOD levels mentioned in the EU regulation do not apply to the Sealift2 plant as BOD (Biological Oxygen Demand) is a measure of organic pollution found in civil waste waters.

Sealift2 waste water plant is dealing with industrial waste waters and the parameters that are relevant to industrial waste waters are:

- COD (Chemical Oxygen Demand)
- Heavy Metals (in carenage water this is iron, copper, aluminium and zinc)
- Suspended Solids
- Detergents
- Oils and fats

The Sealift2 water treatment plant is designed to meet the following output limits:

- COD < 350 ppm
- Suspended Solids < 80 ppm
- Detergents < 4 ppm
- Oils and fats < 20 ppm
- Iron < 2 ppm
- Zinc < 0.5 ppm
- Copper < 0.1 ppm
- Aluminium < 1 ppm

The CT10/PL model processes up to 1.0 cubic metres of waste water per hour

| Dimensions | Weight | Power Supply |
|------------------|-----------------------|-----------------------------------|
| Length = 2,400mm | Weight Empty = 750kg | Power Supply = 3 Phase, 400V/50Hz |
| Width = 2,500mm | Weight Full = 2,500kg | |
| Height = 2,700mm | | |