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Excellent Treatment

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Environmental

PHORS Tank

PHOsphate Removal System



Sustainable, Reliable, Affordable



PHORS Tank

PHosphate Removal System

Treatment plants are highly effective at breaking down sewage to the extent that their effluent may be permitted to discharge directly to watercourses such as streams and rivers.

However, while they can biologically break down the main pollutants (BOD, suspended solids and ammonia) most small treatment plants do not have the ability to reduce phosphates, an element commonly found in detergents and human waste.

Why Phosphates Can Be Harmful

Phosphates are a nutrient and their presence encourages new growth, but problems can arise when too much phosphate over-enriches the water. This upsets the natural balance and leads to an accelerated growth of algae and higher forms of plant life.

In order to protect sensitive areas, local authorities and environmental agencies are increasingly stipulating the use of sewage treatment systems that produce very low levels of phosphate discharge. This has resulted in increased costs requiring the purchase of specialised treatment systems.

The PHORS Tank Solution

The Kingspan Environmental PHORS (Phosphate Removal System) tank has been specifically designed to work in series with the standard **Entec Biotec™** range of treatment plants. It is a self-contained single tank that is comprised of an internal settlement chamber and chemical dosing system.

Installed in conjunction with an **Biotec™** treatment plant it can reduce phosphate levels to 2mg/l in typical applications.

Process Description

After receiving biological treatment in the **Biotec™** plant, sewage effluent flows by gravity into the first of the PHORS Tank's two chambers. This first compartment serves as a holding chamber.

At pre-set intervals a controlled volume of effluent is pumped into the second chamber where a chemical is automatically added. The chemical becomes mixed with the transferred effluent and causes the phosphate to coagulate with the solid waste particles, ending up as sludge that must be periodically removed. The now highly clarified effluent is then allowed to discharge out of the PHORS Tank to the designated watercourse or disposal area.

System Requirements

A power supply is required at all times to ensure the controlled transfer of liquid through the internal pump and the required chemical dose.

The unit also features a control panel that allows both the chemical dose and transferred volume to be varied according to the expected daily volume and level of phosphate in the influent.

Chemical Treatment

The PHORS Tank system treats phosphate with an iron compound (liquid ferric chloride 40%).

The chemical will require storage in a separate unit in an appropriate location, sized to suit the daily dosing and supplier's container volume. Kingspan Environmental can supply a variety of secure kiosks to suit most applications, or alternatively the components can be fitted into a suitable facility/enclosure.

Installation

The PHORS Tank is installed below ground, connected in series to the outlet of the main **Biotec™** treatment plant. The unit requires a minimum fall of 50mm to permit gravity flow and consideration should be made for desludging access.

The chemical storage kiosk and control panel should be located within 3 metres of the PHORS Tank's first manhole cover and will require its own electrical supply.

Advice

The information in this sales literature is by necessity, brief. For further technical literature or assistance on sizing please contact Kingspan Environmental.

Product Ref.	Overall Height (mm)	Overall Length (mm)	Inlet Invert (mm)	Empty Weight (kg)	Population Equivalent
PHORSA1.0	2800	3200	1000	520	40 - 55
PHORSA1.5	3300	3200	1500	550	40 - 55
PHORSA2.0	3800	3200	2000	580	40 - 55
PHORSB1.1	3000	4625	1150	700	75 - 100
PHORSB1.6	3450	4625	1650	740	75 - 100
PHORSB1.9	3750	4625	1900	765	75 - 100
PHORSC1.1	2950	5400	1150	825	125 - 150
PHORSC1.6	3500	5400	1650	865	125 - 150
PHORSC1.9	3750	5400	1900	890	125 - 150



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