

WASTEWATER TREATMENT

PhosClear

Phosphorus and E. coli Removal in Packaged Wastewater Treatment

Ensuring Compliance and Peace of Mind

GB



Representation of a Tricel PhosClear unit with a Tricel Novo sewage treatment plant.



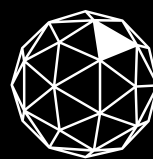
**Plug-In &
Play System**



**Eco-Friendly,
Sustainable
Materials**



**GB Tailored
Design**



TRICEL
GENERATIONS OF INNOVATION

What is PhosClear?

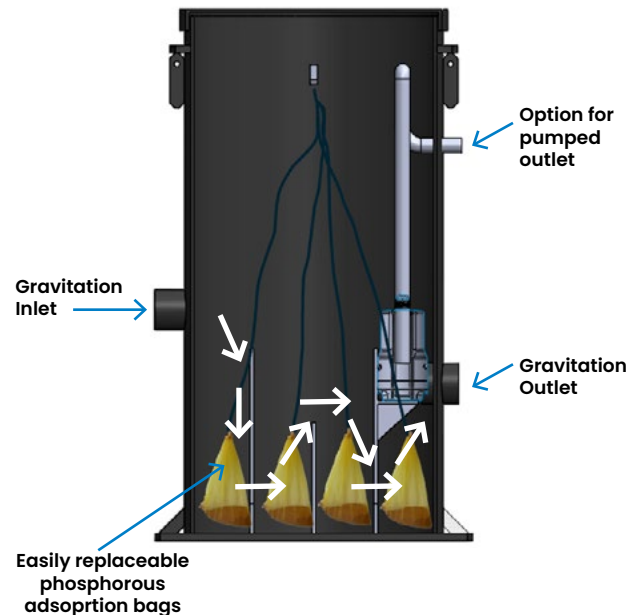
PhosClear is a turn-key, packaged system dedicated to **reducing Phosphorus and E. coli**.

Designed to slot seamlessly into both **new builds and retrofits**, PhosClear addresses the toughest consent conditions without the complexity of chemical dosing or onerous maintenance regimes.

How does it work?

The process of Phosphorus and E. coli

- 1** The treated water from the wastewater treatment plant (such as Tricel Novo) enters the PhosClear treatment unit with gravitation through the inlet.
- 2** Four bags with Polonite are placed in each of the four treatment chambers, and the water passes through the chamber alternately from top to bottom, and bottom to top.
- 3** For a house with a nominal load, each year the four bags in the first chamber are removed, and the bags in the other chambers, are moved one chamber forward.
- 4** The bags remove phosphorous through adsorption and will also disinfect the treated water removing remaining E. coli bacteria.
- 5** In the final chamber the treated water gravitates out of the system to a suitably designed discharge area as required by the relevant local authority. If required to pump the water out of the system, an optional outlet pump can be installed.



Key Advantages of PhosClear



0.8mg/l Treatment Level

Bringing effluent concentrations well below the most challenging sites.



No Chemical Dosing Required

PhosClear's proprietary media bed leverages sustainable natural materials that bind phosphorus in situ.



Easy Installation and Maintenance

Factory-assembled and tested, PhosClear arrives ready for "plug and play." A single pumped outlet connection is all that's needed. Routine service visits take under an hour, with no specialist tools or complex chemical handling.



Nationwide Accredited Partners

Tricel's network of certified installers and service engineers covers all regions of Great Britain, ensuring local expertise and rapid response for commissioning and maintenance.

Stand-Out Features



Plug-In & Play System

Delivered as a single integrated unit pre-plumbed inlet and pumped outlet, PhosClear requires only electrical and wastewater connections.



Eco-Friendly, Sustainable Materials

The media bed is composed of natural material, harvested and processed with minimal environmental impact. All polyethylene and composite elements are fully recyclable at end-of-life.



UK Tailored Design

Every aspect of PhosClear, from structural dimensions to hydraulic profiles, has been optimised for the GB market.

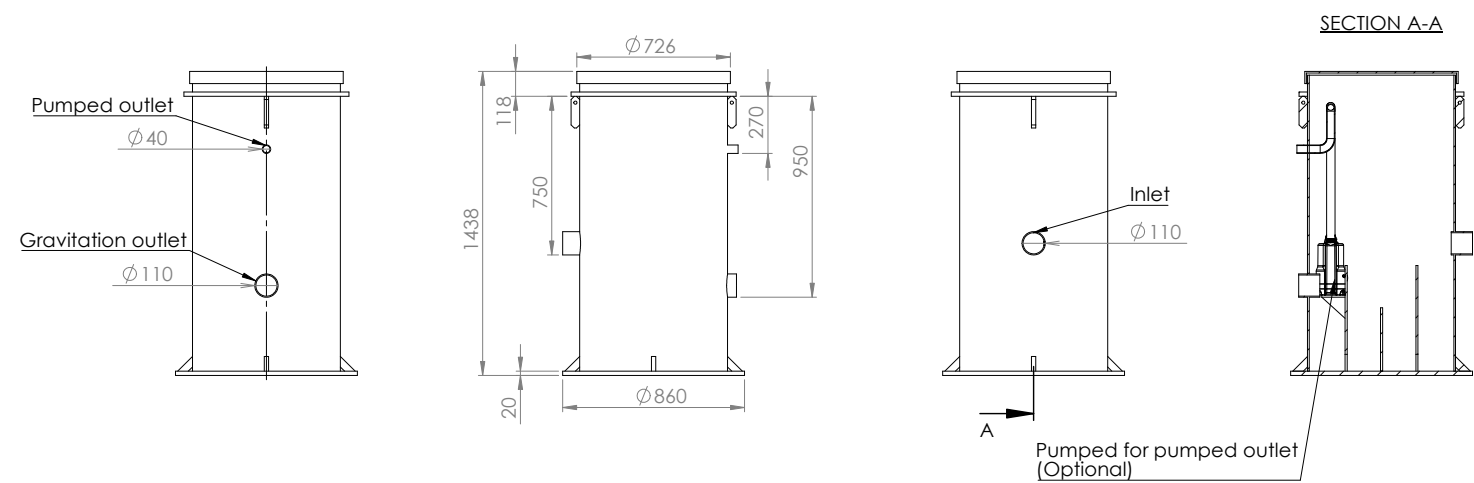
Technical characteristics and dimensions

The PhosClear range supports capacities from 1 to 12 PE, with options for both gravity and pumped outlets. It allows for a maximum of one riser, up to 250mm in height.

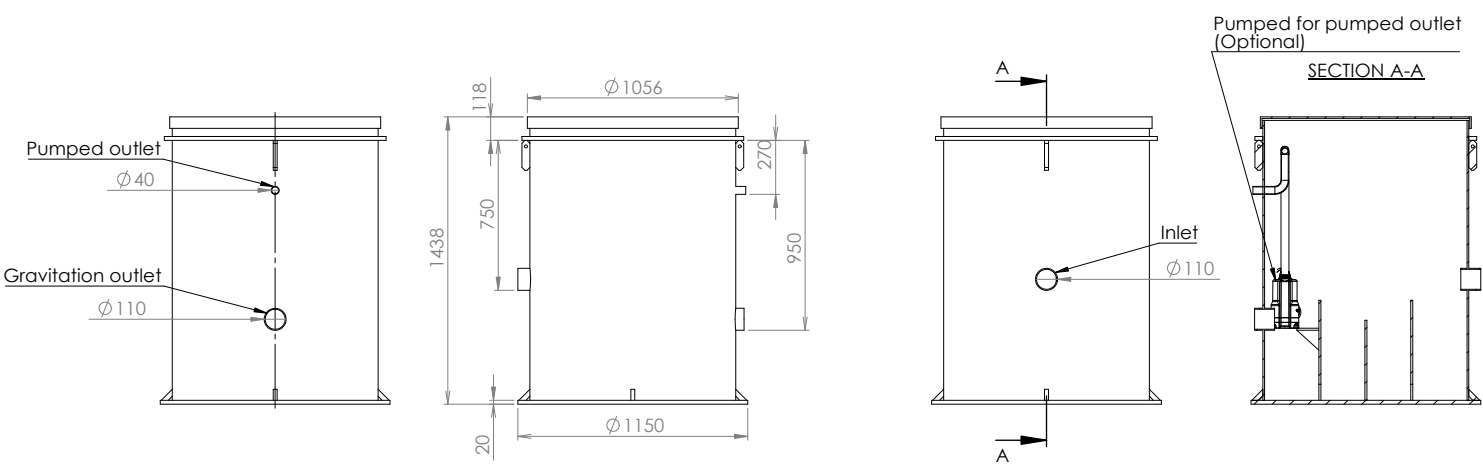
PE	Gravity or Pumped outlet	Dia of unit (mm)	Height (mm)	Inlet Height (mm)	Inlet Dia* (mm)	Outlet Height (mm)	Outlet Dia (mm)
1-8	Gravity	860	1438	750	110	950	110
1-8	Pumped	860	1438	750	110	270	40
9-12	Gravity	1150	1438	750	110	950	110
9-12	Pumped	1150	1438	750	110	270	40

**Inlet invert depends on outlet of preceding tank.*

PhosClear 6-8



PhosClear 10-12





Meeting Nutrient Neutrality with Tricel's PhosClear

As pressures on the UK's waterways mount, nutrient neutrality has emerged as a cornerstone of sustainable development. Natural England's current guidelines require new developments to avoid adding phosphorus and nitrogen to sensitive catchment areas. In practice, this means that many discharges from a housing estate, commercial site or rural development must not worsen existing nutrient loads, often necessitating on site treatment systems capable of precise, reliable nutrient removal.

Why Phosphorus Matters

Excess phosphorus in freshwater fuels algal blooms, depletes oxygen, and devastates aquatic ecosystems. Traditional sewage treatment plants remove elements of phosphorus, but small, distributed sources (septic tanks, small clusters of homes, holiday parks) often lack sufficient removal. **PhosClear fills that gap, ensuring every drop of effluent meets stringent consent limits before returning to rivers and lakes.**


Targeting E. coli for Safer Waterways

In addition to nutrient removal, PhosClear also delivers robust E. coli reduction. By significantly lowering bacterial loads to below regulatory thresholds, PhosClear enhances public health protection and environmental compliance.




This dual-action performance makes PhosClear a powerful solution for sites where both nutrient neutrality and microbiological safety are critical.


Certifications and treatment levels

- **BOD: 11mg/l**
- **NH4-N: 8mg/l**
- **E. coli: <1/100ml**
- **Suspended Solids: 16mg/l**
- **PTot: 0.8mg/ltr**



Pfaff Technik GmbH
 Produktionsweg aus Profit- und Gewinnsicht
 der Anschaffungswerte auf der Pfaff-Adresse



PIA
 Institut für
 Produktentwicklung

Report on the treatment efficiency test according to EN 12566-7 of the small tertiary wastewater treatment plant

Fosforfilter Polonite®
 Biopatch AB

Test report – No PIA2015-T7-205S13.02

Aachen, November 2015, revised December 2015

Dr.-Ing. Udo-Ludwig
 PIA GmbH
 Institut für Produktentwicklung




Table 1: Treatment efficiencies under nominal loading conditions (2000)

Effizienz [%]	Max.	Minimum	Maximum	Standard deviation
CSO	28,4	0	53,1	18,2
NO ₃	68,0	0	96,2	24,8
Ph	12,7	0	98,1	26,9
SS	10,9	0	100	17,2

Table 2: Treated effluent quantities under nominal loading conditions (2000)

Effluent	Mean	Minimum	Maximum	Standard deviation
CSO	mg/l	0	<10	16
NO ₃	mg/l	0	<1	2
Ph	mg/l	0,7	0,1	2,4
SS	mg/l	0,7	6	48
Bottomline value	mg/l	<1	<1	0,2

Table 3: Bacterial results during 8 weeks consecutive sampling

Test schedule	Test sequence	
	1	5
	Loading	100 % 100 %
Date	21.05.2015 16.07.2015	
Air Temperature minima [°C]	5 / 14	17 / 24
Effluent:		
Total Coliforms	111(100cfu)	89.000 8.600
E.coli	111(100cfu)	1.000 3.100
Enterococci	111(100cfu)	1.800 311
Effluent:		
Total Coliforms	111(100cfu)	1.000 < 1
E.coli	111(100cfu)	< 1 < 1
Enterococci	111(100cfu)	320 116

[illegible]

Tricel wastewater treatment plants are fully tested and accredited to **European standards for CE certification.**

PIA (Prüfinstitut für Abwassertechnik GmbH) are the leading Test Institute in Europe for wastewater technology.

Tricel wastewater treatment plants meet with **EN12566-3** requirements which test both the quality of the components as well as the overall performance of the plant.

Tricel Group

Tricel is a world recognised global provider of high-performance solutions. Today, the company operates across multiple industries such as Environment, Construction, Water and Distribution, including both composite materials and lubricants.

We occupy a unique position in the field of reinforced plastics, combining the technical expertise of over 60 years in the press-moulding and composites industry. Tricel is proud of being one of the largest manufacturers of wastewater treatment plants in Europe, and are regarded by regulators as the standard setters within the industry.

Our company offers industry leading innovative solutions that our customers can trust, and with operations in 17 locations across Europe we supply a comprehensive range of products to over 50 countries worldwide.



Membership of governing bodies on wastewater treatment



British Water is the leading association representing suppliers, manufacturers, contractors, consultants and others in the UK water industry supply chain.

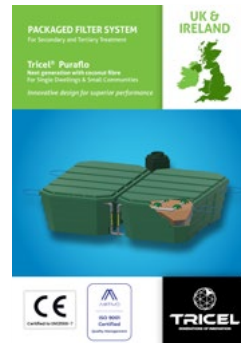
Our Full Range of Tricel® Wastewater Treatment Solutions



Tricel® Novo
Wastewater Treatment Plant



Tricel® Vento
Septic Tank



Tricel® Puraflo
Packaged Filter System



Tricel® Maxus Combi
Commercial Wastewater Treatment

Call us today for a **Free Quote** or details of your **local partner**
+44 (0) 1934 422 311
customerservice@tricelwater.co.uk

Tricel Weston, Winterstoke Road, Weston-super-Mare, BS24 9AN, United Kingdom.
Tel: +44 (0) 1934 422 311 | Email: customerservice@tricelwater.co.uk | www.tricel.co.uk

In accordance with Tricel's normal policy of product development these specifications are subject to change without notice.

