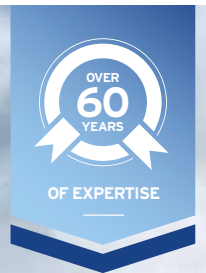


# BioFicient



## BIOFICIENT COMMERCIAL

ADVANCED SEWAGE TREATMENT SYSTEMS FOR RESIDENTIAL,  
BUSINESS & LEISURE APPLICATIONS

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# KINGSPAN KLARGESTER, WASTEWATER MANAGEMENT EXPERTS

## Kingspan Klargester

With over 60 years' experience in trusted wastewater treatment solutions worldwide, Kingspan Klargester are here to help you make the correct wastewater system choice for your project with a fully integrated, no hassle wastewater treatment package tailored to your project's individual needs.

Our Technical Support Team provide focused customer service from initial design assistance through to project specific installation guidance. We give you the confidence of support over the lifetime of the product and beyond.

Our dedicated external area sales managers offer a free site visit to discuss the project specific requirements and provide a detailed written report and specification for the best solution for your project. They can also provide on-site installation assistance when required and help you with formal discussions with Building Control, Local Planning departments, The Environment Agency/SEPA, architects and consultants.

Kingspan Klargester offer a nationwide accredited installer network. These specialist installers have been professionally trained in all aspects of the skills required to fully install our products. With years of experience, our installers are well placed to provide first class installation and commissioning of your wastewater systems. Kingspan Klargester accredited installers have the expertise to survey and evaluate the specific requirements of any site plan - from a small domestic house to a large commercial scheme.





BioFicient  
Commercial

### Introducing BioFicient

BioFicient is designed for large domestic and commercial applications such as camp sites, hotels or industrial units. Its design incorporates flow management in order to both stabilise influent volume variations and to minimise hydraulic impact on the final settlement process. Such control ensures that final effluent remains at a consistently high quality.

The BioFicient commercial plant range is shipped as a single piece tank up to 300PE with modular systems available for up to 1000 PE. The BioFicient commercial range is designed in accordance with BS EN 12255.

### Effluent Quality

In a standard configuration, the BioFicient Commercial will deliver BOD levels of less than 20mg/l, 30mg/l Suspended Solids, and Ammonia levels lower than 5mg/l. This means it will outperform most of the packaged systems currently on the market for nitrogen reduction.

### Product Benefits

- GRP inspection covers for increased corrosion protection.
- Vent pipes added to every neck to allow better ventilation and air-flow.
- Necks on each side of the primary settlement tank to allow for better inspection and easier de-sludging.
- Biozones are now very similar in volume to aid performance.
- Inlet pipe has a rodding point inside the neck for easier access.
- A more efficient blower means less power consumption.
- More airflow to diffusers to improve process.
- Stainless-steel diffusers to avoid corrosion.
- Minimal footprint area.
- Alarm protected.
- Variable invert options.
- Other Made To Order / bespoke options are available.
- BioFicient comes fully supplied with control panel, externally sited air blower and loss of pressure alarms as standard

### Applications

The BioFicient commercial range is suitable for use across the following applications:

- Residential
- Leisure
- Public sector
- Hospitality
- Transport
- Offices
- Campsites

## EXPERTISE

- › Kingspan Klargester provide you with the confidence that comes from a world leading wastewater brand. We offer expert guidance on choosing the correct wastewater treatment solution, right through to aftersales service and maintenance.

## RELIABILITY

- › Our wastewater solutions use tried and tested technologies. Our reliable performance products are hassle free for ultimate peace of mind.

## TRUST

- › With over 60 years' experience delivering high performance and reliable wastewater treatment systems worldwide, you can trust Kingspan Klargester.

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# BioFicient

## HOW IT WORKS



BioFicient employs a plug flow combination of aerobic and anoxic processes in a fluidised bed arrangement. This operates in conjunction with an advanced system of air diffusers and selected media to deliver optimum levels of purification. As well as catering for large commercial developments we also offer a bespoke BioFicient solution for up to 1000 PE.

### 1 - 2 Primary Settlement

This is the initial stage of treatment and simply involves the retention of coarse solids present in raw sewage and wastewater for subsequent gradual breakdown. BioFicient features two chambers to ensure efficient operation with a flow balancing facility.

### 3 - 5 Biological Treatment

Substantial BOD reduction takes place here, where the carbonaceous pollutants are removed by presenting the sewage to the micro-organisms in the presence of oxygen. The treatment is achieved by high efficiency air diffusers continually pumping oxygen through the biological media and fluidised effluent.

### 6 Settlement

A natural by-product of biological treatment is humus sludge and this is separated for further treatment. The treated effluent is discharged via the outlet.

#### Features

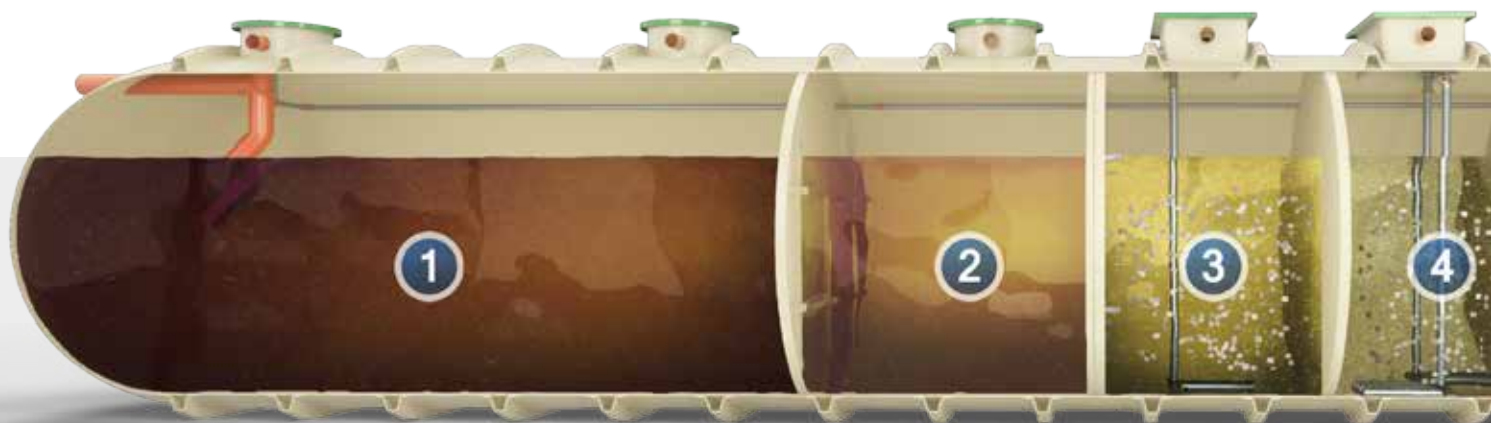
- Choice of inverts (from 0.5 to 2.0m)
- Duty and Standby blowers (as required)
- Alarm Systems
- Sample chambers
- Pumping stations

#### Additional products

The commercial applications with a catering function require a grease separator installed in addition to the sewage treatment plant to prevent the oils, fats and grease from entering the unit. Kingspan Klargester offer a range of grease separators designed in accordance with BS EN 1825-1.

For applications where drainage levels on site will not support a gravity fall in to or out of the BioFicient, we offer a full range of Foul or Effluent Pump Stations to facilitate any drainage requirement.

Kingspan Klargester product experts are here to help you with the right solution to improve the performance of your system and reduce risk of breakdown.



1 Primary Settlement Tank 1

2 Primary Settlement Tank 2

3 Biozone 1

4 Biozone 2



**KINGSPAN KLARGESTER**  
EXPERTISE, RELIABILITY  
AND TRUST

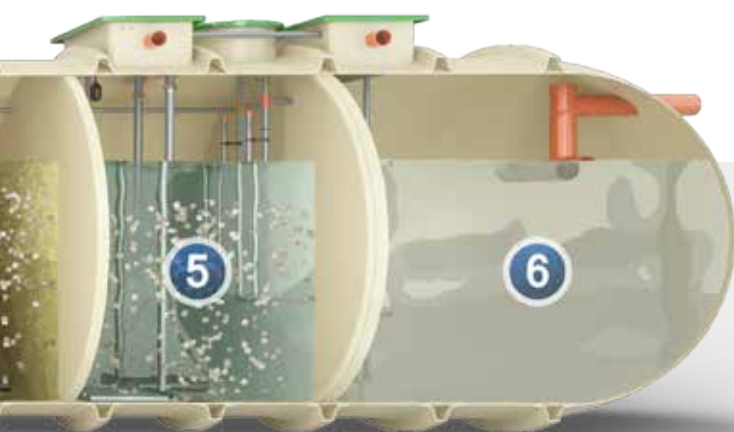
Model Reference	BioFicient 17	BioFicient 23	BioFicient 34	BioFicient 38	BioFicient 42	BioFicient 47	BioFicient 55	BioFicient 67	BioFicient 80
Max Flow (m³/day)	8	11	15	20	25	30	40	50	60
Overall Length (m)	7.4	9.3	7.4	8.1	8.9	9.7	11.2	13.5	15.8
Height (mm)									
500mm inlet/650mm outlet invert	-	-	2960	2960	2960	2960	2960	2960	2960
500mm inlet/600mm outlet invert	2275	2275	-	-	-	-	-	-	-
800mm inlet/950mm outlet invert	-	-	3260	3260	3260	3260	3260	3260	3260
1000mm inlet/1100mm outlet invert	2775	2775	-	-	-	-	-	-	-
1500mm inlet/1650mm outlet invert	-	-	3960	3960	3960	3960	3960	3960	3960
1500mm inlet/1600mm outlet invert	3275	3275	-	-	-	-	-	-	-
2000mm inlet/2150mm outlet invert	-	-	4460	4460	4460	4460	4460	4460	4460
2000mm inlet/2100mm outlet invert	3775	3775	-	-	-	-	-	-	-
Volume (m³)	17	23	34	38	42	47	55	67	80
Weight approx (kg)	1200	1450	3000	3200	3400	3800	4200	4700	5400
Inlet/Outlet Diameter (mm)	160								

### Service & Maintenance

BioFicient's individual chambers have large dedicated manholes to allow quick and easy maintenance access. Servicing is also simplified as BioFicient's flow control makes it unnecessary to empty the biozones, as is the case with other designs of treatment plant. As a result, the biozones immediately resume operation following servicing, whilst the influent level is restored. As a result there is no loss of plant performance during periodic maintenance.

### Specialist Advice

Delivering high quality effluent requires careful evaluation of the various parameters affecting each scheme. Relatively minor changes may result in the loss of one or more of the required effluent qualities. Plant sizing is not only calculated on current demand but also gauged on potential future loading in order to meet the latest legislative criteria. Our technical specialists and engineers are able to assess each site's demands and tailor the specification accordingly.



**5** Biozone 3

**6** Final Settlement Tank



BioFicient biozones utilise structured plastic media. The media design gives a high surface area which stimulates the growth of bacteria and other organisms (biomass) which actively treat the wastewater.





# CUSTOMER SUPPORT



We stand by the quality and performance of Kingspan Klargester products and our support doesn't stop once your tank is installed. We're on standby 24/7 with guidance on servicing and maintenance and offer tailored warranty options. Our trained professional support team is only a phone call away.

#### Peace of mind with extended warranty options

We offer an extended and tailored warranty or bond on your sewage treatment plant to suit your needs and budget. This cost effective package offers the benefits of scheduled maintenance inspections to ensure your system performs at optimum levels at all times.

#### Customer support when you need it

Our friendly local customer service team are on hand with professional advice. Contact our sales office on 01296 633 000 or use our support email address [klargester@kingspan.com](mailto:klargester@kingspan.com)

#### Service and maintenance

Regular tank maintenance is recommended to ensure optimal performance of any system. When your tank is due to be serviced, our local engineers are on hand to help.



**Contact your expert local Kingspan Klargester team today**

Our experienced local Kingspan Klargester product experts are on hand with professional advice on all aspects of your sewage treatment system, including sizing and installation.

Book your no obligations site assessment from the global experts in wastewater treatment, Kingspan Klargester. Contact us today on **01296 633 000**.

You can also book your visit online at **[kingspanklargester.com](http://kingspanklargester.com)**



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EXPERTISE, RELIABILITY  
AND TRUST

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# CASE STUDIES

## Commercial Sewage Treatment Solution for Primark Distribution Centre

### Challenge

Primark's distribution centre had considerable topographical challenges and in some distance from services such as the main sewer. Furthermore, the disposal of sewage effluent is made more complex by environmental sensitivities surrounding the local water course.

### Solution

The main building contractors, Sir Robert McAlpine, turned to Kingspan Klargester for specialist advice. To meet the necessarily requirements, the Kingspan Klargester team determined the EnviroSAFE commercial sewage treatment plant was best suited for the installation. The EnviroSAFE\* is designed to be flexible and modular and the designers used this adaptability to create two linked tanks to achieve sufficient capacity and to effectively manage the collection, biological processing and disposal of the waste.



## Commercial Treatment Plant for Scottish Holiday Park

### Challenge

A holiday park in a beautiful part of Angus had an antiquated drainage system. The central toilet block was discharging into a old septic tank from where, the poorly filtered effluent was then passing directly into the River Isla.

### Solution

We replaced the septic tank with a top-of-the-range EnviroSAFE BOMEQ sewage treatment plant to effectively treat the effluent, removing at least 95% of the pollutants. The EnviroSAFE was fitted with two small compressors so that one can be turned off in the winter months, managing seasonal loading and reducing the carbon footprint in times of lower demand.



\*EnviroSAFE was predecessor to BioFicient.

# BioFicient



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