



**BioTornado**

# **BIOLOGICAL DOMESTIC**

**WASTEWATER TREATMENT PLANT**



# Description

- BioTornado revolutionizes wastewater management with its advanced technology, catering to both small homes and larger complexes for up to 50 people.
- Unique in Europe, it features 8 specialized cleaning chambers, ensuring efficient and cost-effective treatment.
- With an easy-to-install design, compliance with Scandinavian regulations, and a 98% operational efficiency, BioTornado stands out for its performance, reliability, and environmental friendliness.



# Core Benefits

Top performing wastewater treatment  
Technology in the entire EU

**01**

BioTornado meets and exceeds the existing treatment requirements of EU standards.

BioTornado offers a **10-year** warranty with the highest performance, ensuring it will last for decades! It is EU certified and CE marked.

**05**

**02**

The highest category of plastic is used in production, ensuring the best quality and long term durability.

We believe in the sustainable use of resources and have successfully incorporated the concept of 100% plastic reuse in our manufacturing process.

**06**

**03**

BioTornado is suitable for all soil types. Our units B4S – B6S are ideal for areas with high groundwater levels.

We offer a wide range of BioTornado products catering to capacities from **4 to 50 residents**.

**07**

**04**

The unique mechanism of the **8-Compartment** BioTornado ensures the highest efficiency.

The payout remains the same, with no increase.

**08**

# Extra Benefits

Widely proven by certifications

01

Odorless working.  
Invisible on the site.  
Compact and easy to install.  
One day installation process.

02

Delivering fast services throughout  
European Union.  
The cover has a diameter of only  
**65 centimeters.**

03

BioTornado is made of high-quality,  
environment- and human-friendly,  
environmental-resistant materials.

04

The unique mechanism of the  
**8-Compartment** BioTornado ensures the  
highest efficiency.

05

The depth of the sewage pipe ranges from **60 to 110 centimeters.**  
Mow the lawn perfectly without worrying about protrusion.

06

Quiet working.  
**Save 50%** of electricity with specialized energy saving  
blowers and pumps.

07

Effective solution to prevent water pollution.  
Work in all weathers Conditions with same performance.  
Made in Lithuania, directly from the factory.

08

High production standards.  
Excellent solution for those who is unable to connect with  
centralized wastewater treatment system

# Comparison

	Example	Septic	Example	BioTornado
<b>Use of recycled water</b>		✗		✓
<b>Discharge to rivers/lakes</b>		✗		✓
<b>Use for lawn watering</b>		✗		✓
<b>Watering plants and flowers</b>		✗		✓

# Comparison



	Septic	Wastewater facility	BioTornado
<b>Performance</b>	25%	94%	98%
<b>Nitrogen</b>	irremovable	26.4mg/L	16.3mg/L
<b>Phosphorus</b>	irremovable	6.79mg/L	1.56mg/L
<b>Service</b>	2-6 in year	2-3 time in year	1 time in year
<b>Pollution of the environment</b>	75%	6%	2%
<b>Secondary use</b>	not allowed	allowed	allowed
<b>Cover size</b>	1m-1.5m	0.7m-1.5m	0.65m
<b>Number of working cameras</b>	1-2	2-6	8
<b>Operation of the air supply unit</b>	24h/a day	24h/a day	12h/a day

# Product Features



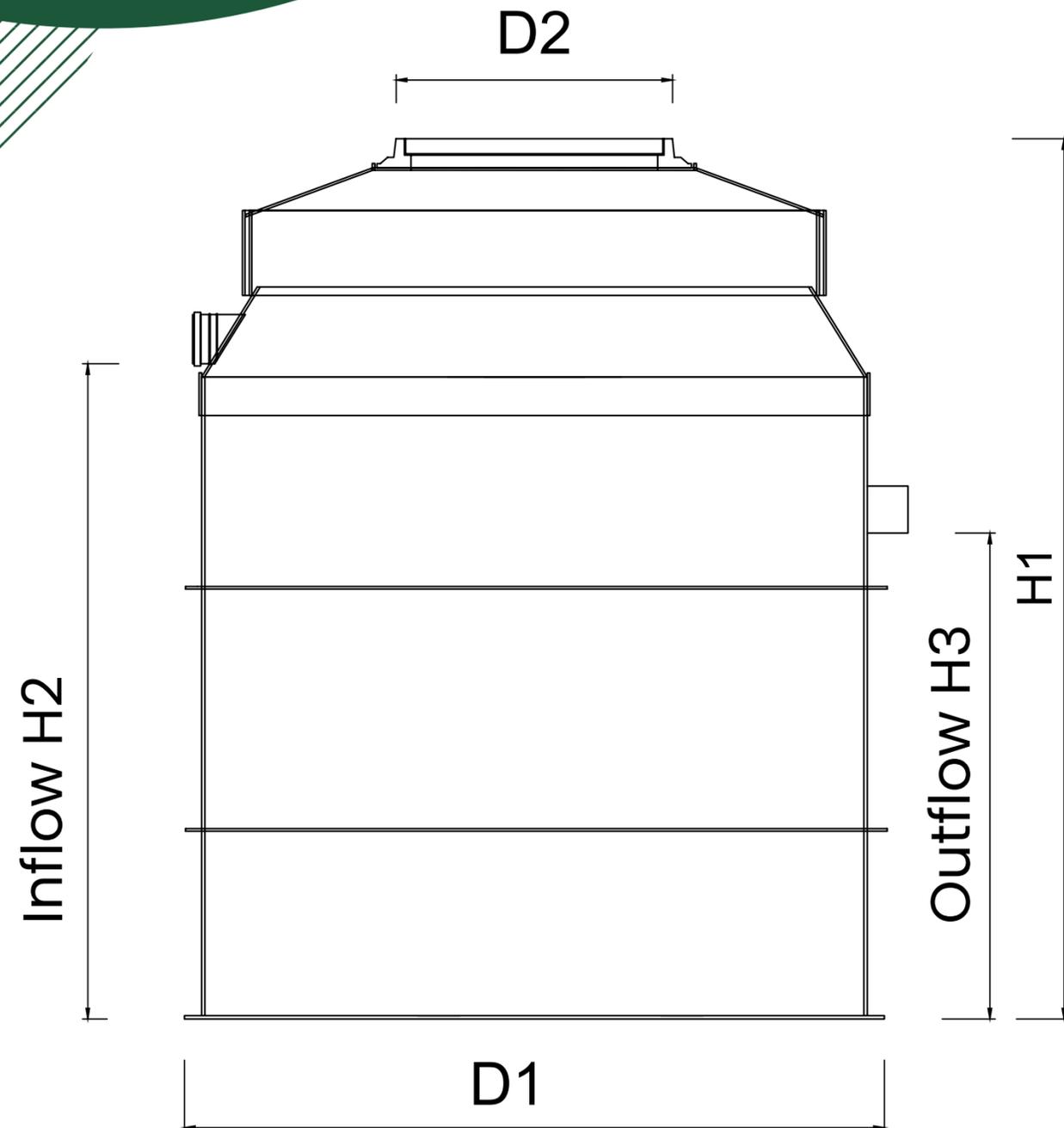
Model	People	Capacity	Weight
B4S - B65	2-6	0.6-0.9 m <sup>3</sup> /day	150-165
B4A-B10A	4-10	0.6-1.5 m <sup>3</sup> /day	150-240
B15A-B50A	15 - 50	2.25-7.5 m <sup>3</sup> /day	300-540



**Materials** High quality Polypropylene (PP)

# Product Features

## B4S-B6S



01

**Capacity:** Suitable for homes with 2-4 people, offering a treatment capacity of 0.6 m<sup>3</sup>/day.

02

**Easy Installation:** Designed for user-friendly installation, ensuring a hassle-free setup process.

03

**Low Maintenance:** Simple maintenance procedures for convenience and longevity.

04

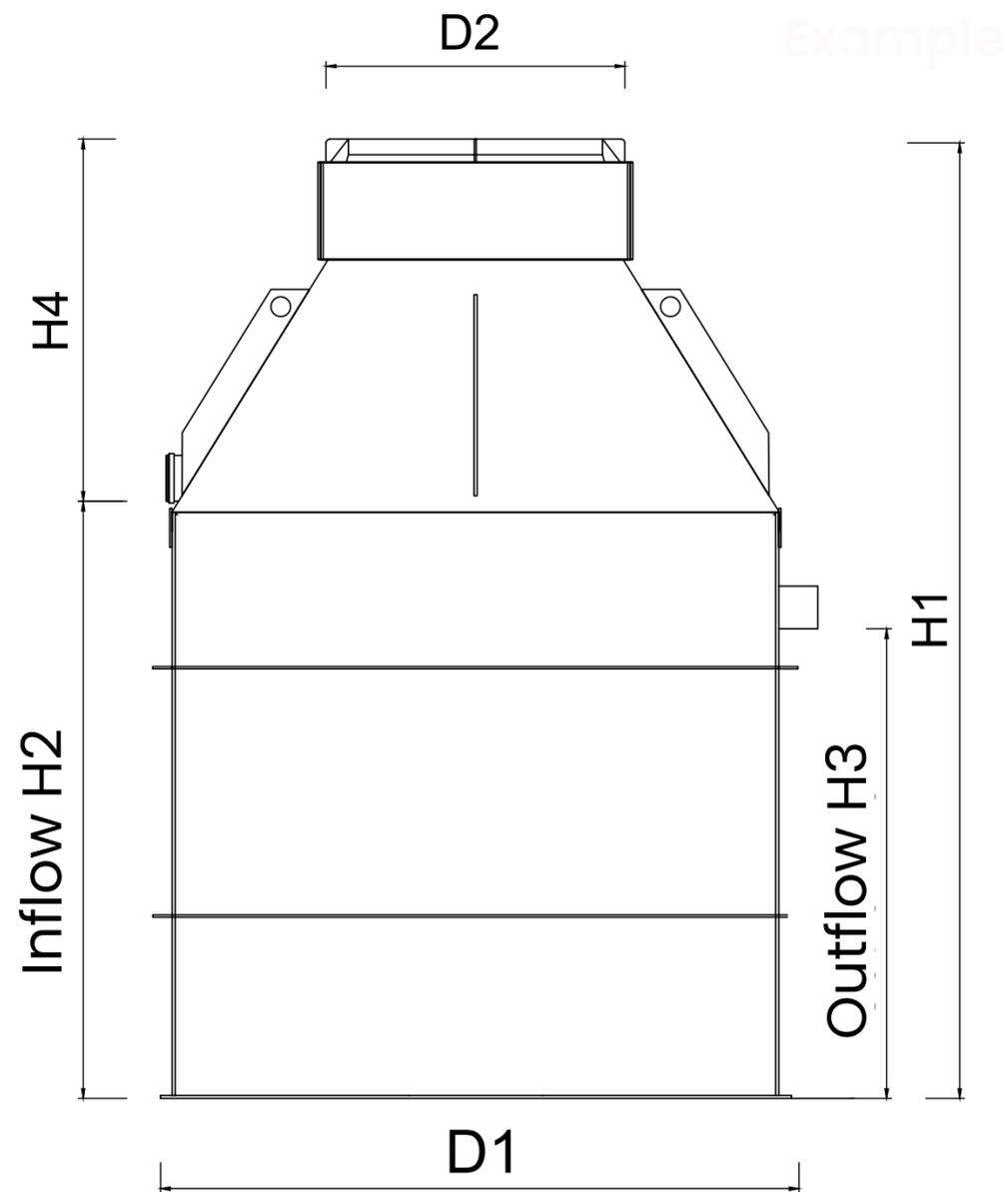
**Efficient Treatment:** Provides effective wastewater treatment for smaller households.

05

**Compact Design:** Space-efficient design to fit seamlessly into residential areas.

# Product Features

## B4A-B10A



01

**Capacity:** Ideal for medium-sized residences accommodating 4–10 people, with a treatment capacity of 0.6 – 1.5 m<sup>3</sup>/day.

02

**Easy Installation:** User-friendly installation process for quick and efficient setup

03

**Low Maintenance:** Designed for easy maintenance to ensure longevity and optimal performance.

04

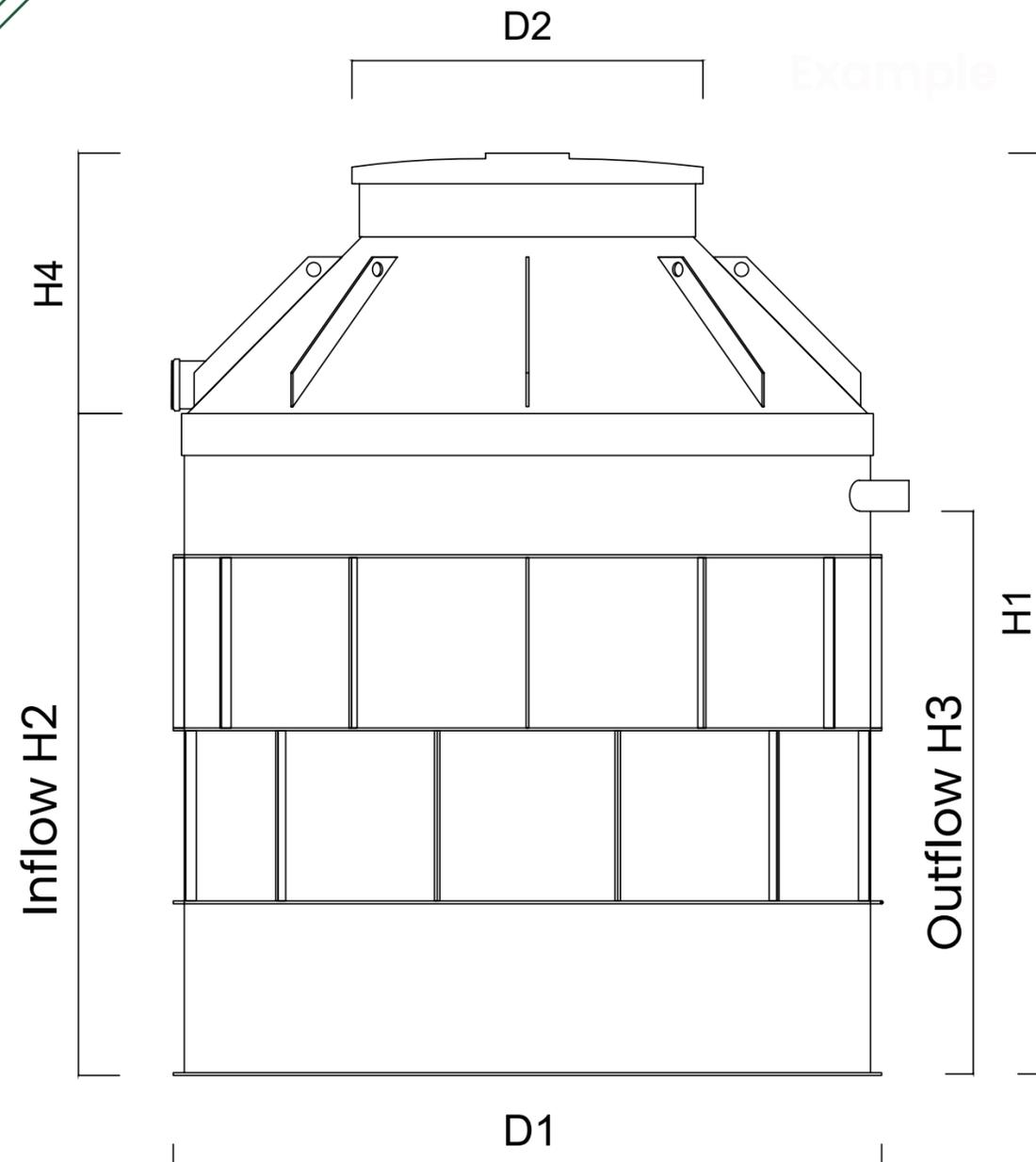
**Efficient Treatment:** Offers effective wastewater treatment for larger households.

05

**Compact Design:** Blends seamlessly into medium-sized residential environments.

# Product Features

## B15A-B50A



01

**Capacity:** Tailored for commercial buildings accommodating 15–50 people, with a treatment capacity of 2.25 – 7.5 m<sup>3</sup>/day.

02

**Easy Installation:** Engineered for easy installation, reducing downtime for commercial spaces.

03

**Low Maintenance:** Sturdy design with simplified maintenance processes for commercial-grade durability.

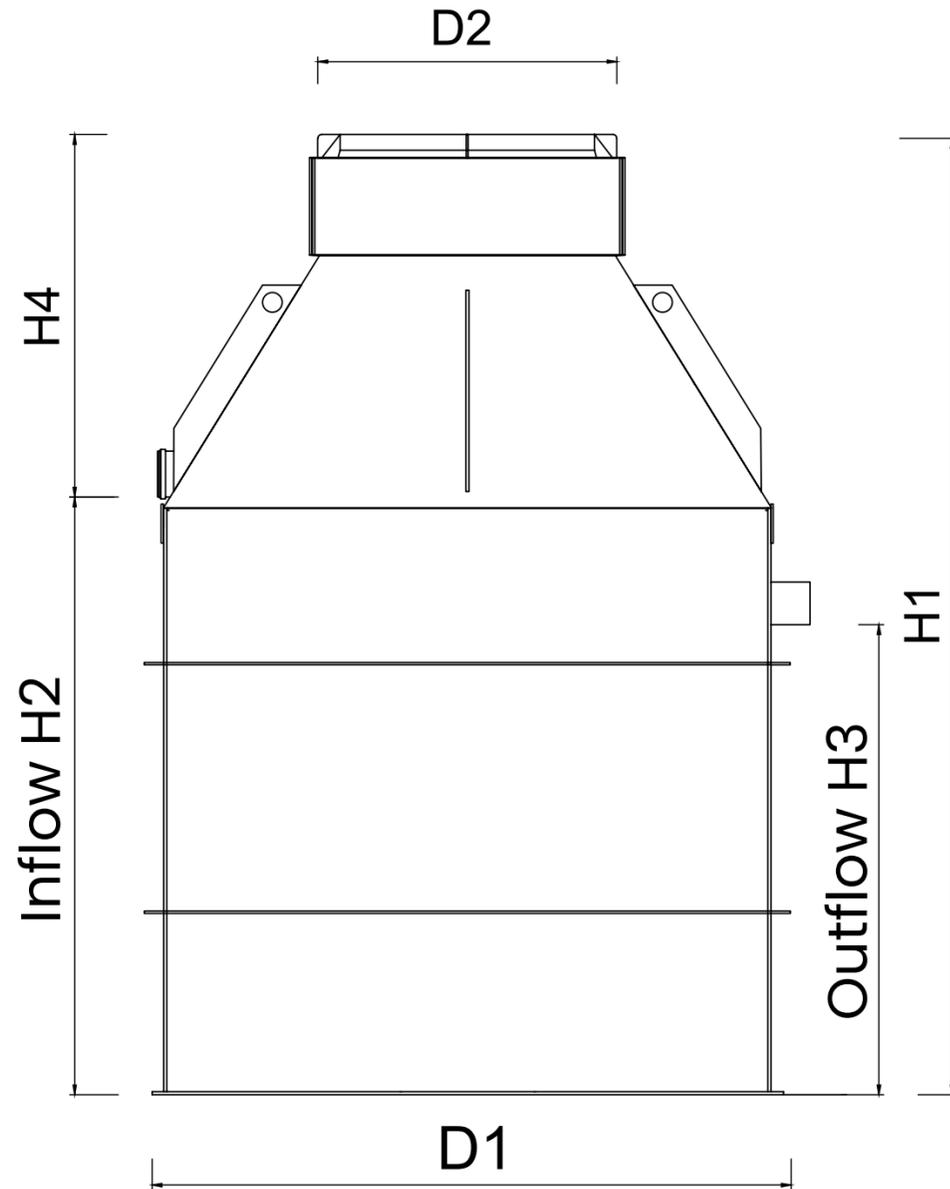
04

**Efficient Treatment:** Capable of efficiently treating larger volumes of wastewater for commercial use..

05

**Compact Design:** Designed to meet the demands of commercial spaces while maintaining a professional appearance.

# Performance results



	Effluent (%)	Effluent (mg/L)
BDS5	97.6	8.41
ChDS	94.5	37.8
SM	97.5	8.81
SS	97.5	8.81
Nkj	87.6	10.3
Ntot	80.1	16.3
Nb	80.1	16.3
Pb	80.8	1.56
NH4N	89.6	8.4
NO2N	-	0.381
NO3N	-	5.64

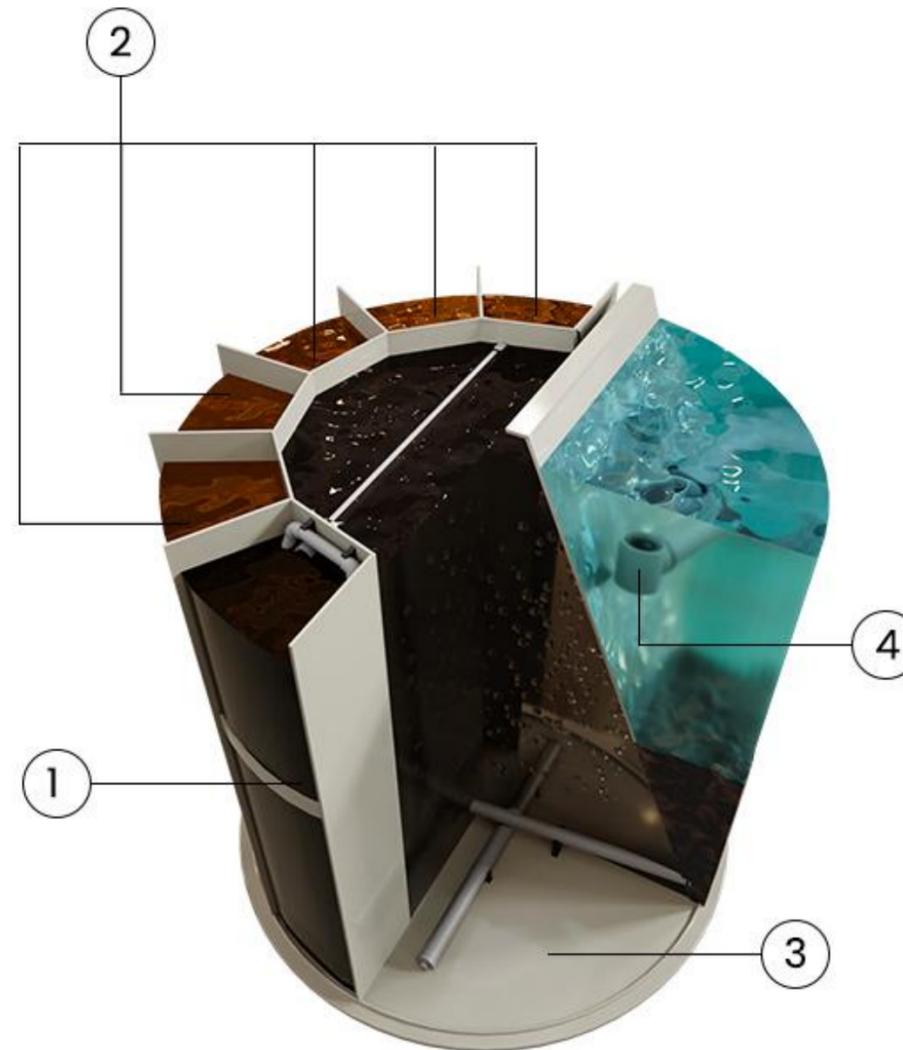
# How does it work?

## 1. Anaerobic

Wastewater enters BioTornado through the inlet and passes through a mechanical grate, ensuring that large particles and grit do not hinder the treatment process or cause mechanical maintenance issues. In the anaerobic zone, complex organic matter is broken down into simpler forms in preparation for the next stage of treatment, all in the absence of air.

## 3. Aeration Zone

Oxygen is supplied in this chamber, enabling aerobic bacteria to consume and decompose the organic matter in the presence of free oxygen. These bacteria play a crucial role in removing organic matter from the wastewater.



## 2. Anoxic Zone

Here, the simplified organic matter undergoes denitrification, where nitrate and nitrite are converted into nitrogen gas. This process effectively reduces the nitrogen content in household wastewater.

## 4. Clarification Zone / Settlement Zone

The wastewater from the aeration tank flows into the clarification zone, where gravity separates water from sludge. The heavier sludge settles at the bottom and is transferred back to step #01, while the treated water is collected in the next compartment. This water meets the effluent standards of Scandinavian markets and adheres to strict EU safety, health, and environmental protection requirements. It can be utilized for home gardening purposes or safely discharged into the environment.

# WHAT IS INCLUDED IN THE BIOTORNADO PACKAGE ?



Sewage treatment facilities are equipped with attractive, compact, light-type covers, which are adjusted to the level of the lawn with the help of a telescope after installing BioTornado.

BioTornado is equipped with long-lasting blowers, which supply air to the equipment not only during the warranty period, but also for a significantly longer period of time. In order for BioTornado to work efficiently, services should be performed less often, it is necessary to dose oxygen, mechanical timers that serve for many years are equipped for this function.

# Engineered for All Soil Types

## 01

No matter the soil type—sandy, clay, silt, peat, chalk, loam, or any other—BioTornado delivers exceptional results in all soil conditions.

## 02

BioTornado, certified equipment, has passed rigorous compression tests, ensuring it can be installed in a variety of soil types.

## 03

The BioTornado team pays great attention to the quality of assembly, ensuring long-lasting operation.



Odorless working.



Invisible on the site.



Compact and easy to install.



One day installation process





# BioTornado model-based specification

## 01

S model is perfect for installation in soils where high ground water prevails or the depth of the inlet pipe is 50 cm from the ground surface.

## 02

A model specifically designed for normal soil conditions, requiring no special adaptations, and ready for immediate installation and operation.



# Types of covers



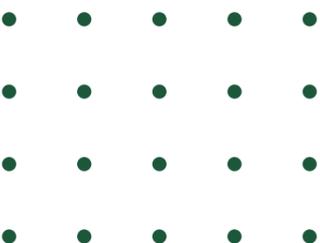
**01**

Sewage treatment facilities are equipped with attractive, compact, light-type covers



**02**

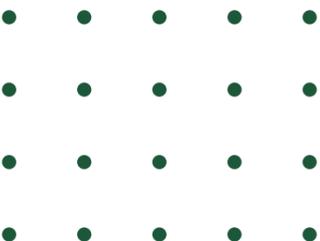
BioTornado covers can be adjusted to the level of the lawn with the help of a telescope after installing BioTornado.



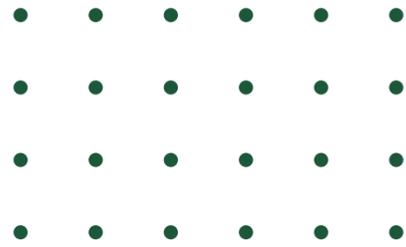


# BioTornado Maintenance Requirements

- Maintenance once a year
- Inspection twice a year



# BioTornado Installation



# Installation options

- 01** A reinforced concrete infiltration well is being constructed to help water soak into the ground. The infiltration well consists of two concrete rings, each 1.5 meters in diameter and 1 meter tall. On top of these rings, there is a 0.15-meter layer of gravel with a hole in it. Inside the well, there is a smaller chamber, 0.7 meters in diameter and 1 meter tall, which is covered with a plastic lid. This setup helps direct water into the ground efficiently.
- 02** A sampling well, made of plastic with a diameter of 0.315 meters, is used to collect water samples for testing before clean water is released into meadows, ditches, or under bushes. The well includes a sealed bottom and a plastic cover to keep it enclosed.



# Installation options

**03** If effluent leaves a building at a depth greater than 1.15 meters or if digging deeper is impossible due to high groundwater, an effluent pumping station is needed to lift the wastewater to the biological wastewater treatment plant. After treatment, the water flows into infiltration well. The effluent pumping station typically consists of a 0.7-meter wide, 2.2-meter tall plastic tank with an internal pump and a plastic cover.

**04** The purified water is directed to a discharge pumping station, which enables the water to be discharged onto meadows, into ditches, or under bushes. This station usually has a plastic tank, about 0.7 meters wide and 2.0 meters high, with a pump inside and a plastic cover.



# Installation options

**05** When a biological wastewater treatment plant is installed beneath paving stones in the roadway, the equipment is placed inside concrete well rings with a 2.0-meter diameter. To ensure stability and support the entire load, a concrete pad is placed underneath the rings. This setup helps protect the equipment from the weight and movement of vehicles above.

In this setup, the equipment is installed without the upper cone section. The blower is positioned sideways in a nearby meadow. The purified water is then directed into infiltration wells, similar to the first setup. This design helps manage the flow of clean water into the ground efficiently.

Metal covers are used for both the equipment and the infiltration wells. These covers are designed to support heavier loads, but they have a similar appearance to plastic covers, maintaining a clean and consistent look while providing extra strength and durability.



# Installation options

**06** Clean water is directed to a water pumping station, which lifts the water to an infiltration well. The well is positioned on a mound that rises about 1.0 meter above ground level. Gravel is placed beneath the well to improve water absorption. The setup includes:

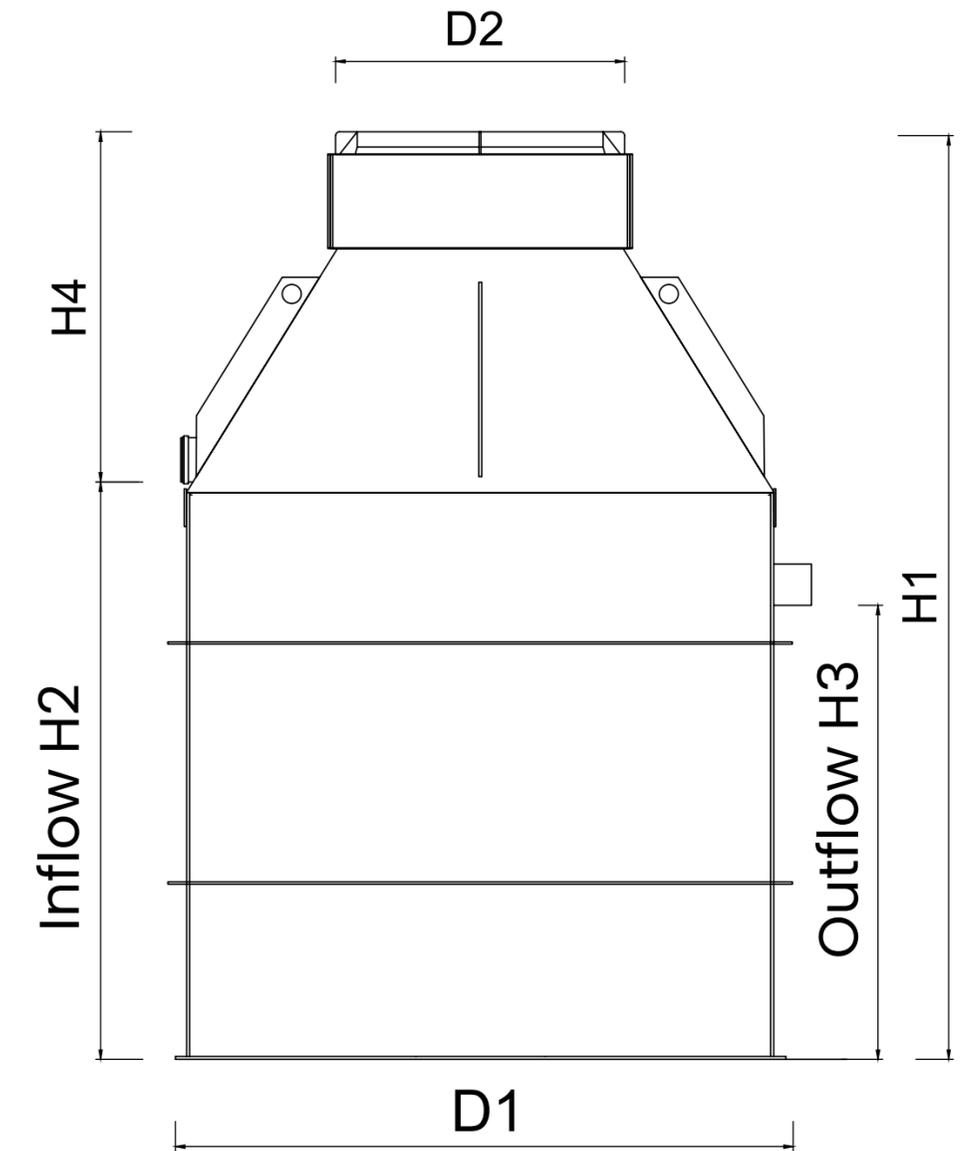
- A 1.5-meter diameter well, 1.0 meter in height.
- A 0.15-meter thick concrete or gravel cover with a hole for water flow.
- A smaller well inside, with a 0.7-meter diameter and 0.5 meters in height.
- A plastic cover for the smaller well, designed similarly to the main device.

This system helps efficiently manage the purified water and ensures proper infiltration into the ground.

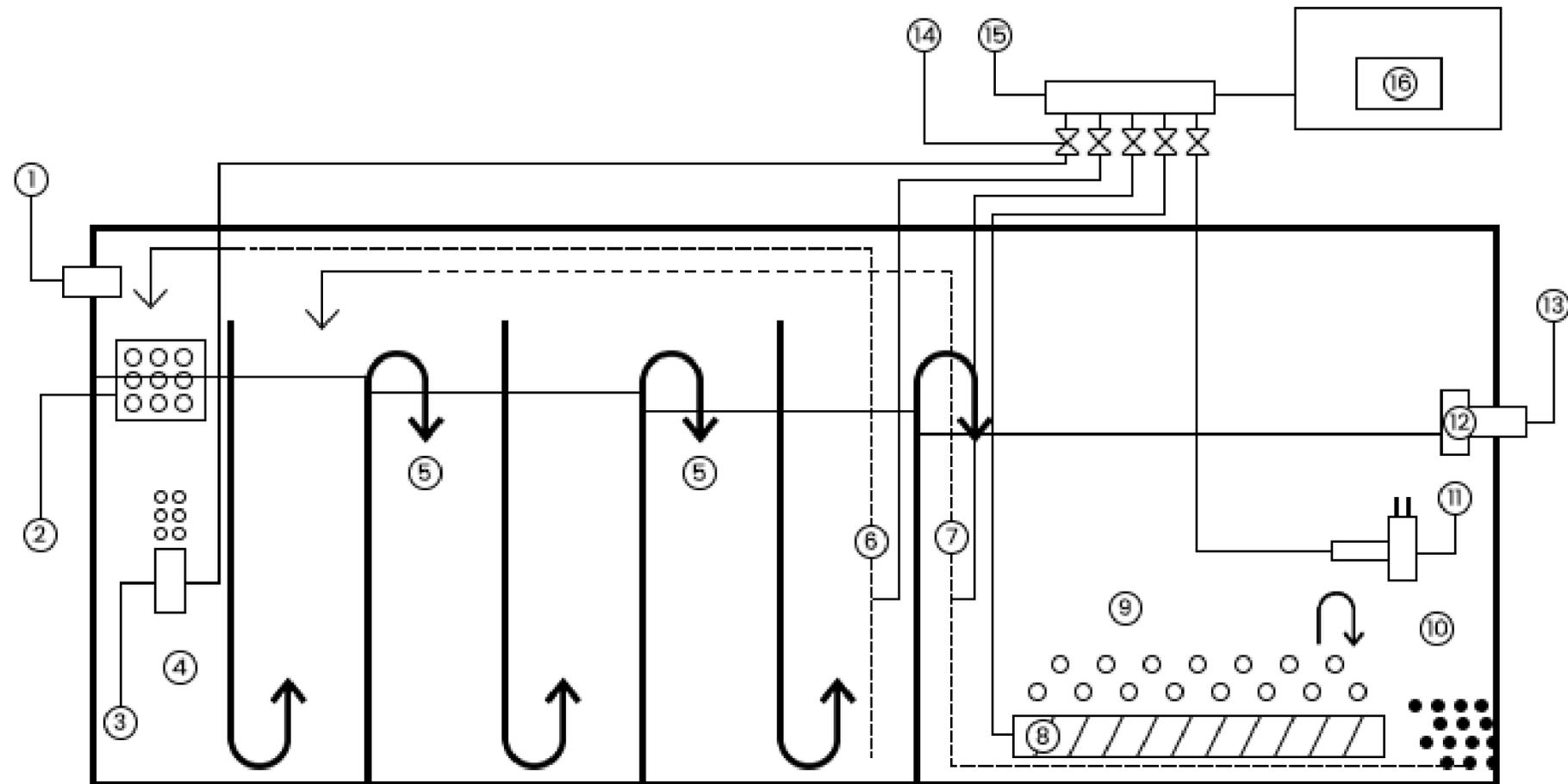
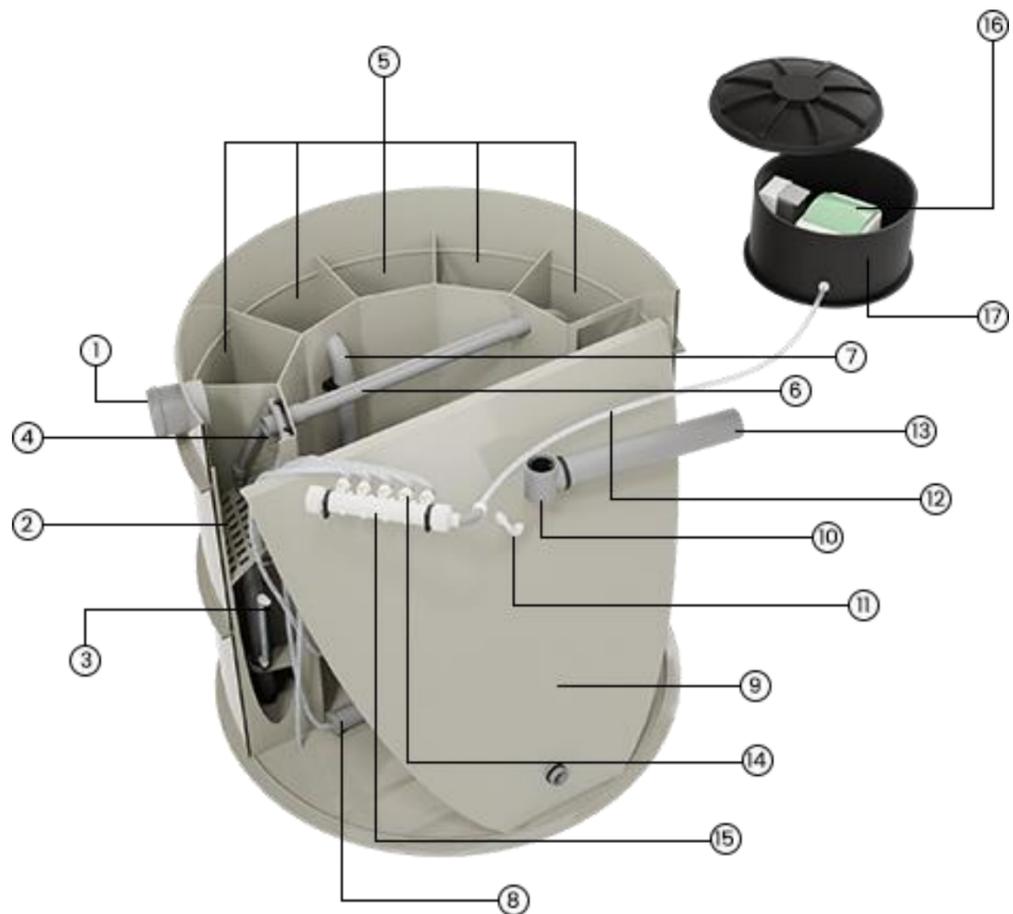


# Dimension Guide

Model	Diameter D1, m	Height H1, m	Inlet H2, m	Outlet H3, m	Cover D2, m	Inlet	Outlet
B4S	1.48	1.95	1.38	1.06	0.70	110	110
B4A	1.48	2.3	1.38	1.06	0.70	110	110
B6S	1.65	2	1.54	1.21	0.70	110	110
B6A	1.65	2.5	1.54	1.21	0.70	110-160	110
B8A	1.78	2.5	1.69	1.37	0.70	110-160	110
B10A	1.93	2.7	1.74	1.41	0.70	110-160	110
B15A	2.08	2.95	2.1	1.76	1.26	110-200	110
B20A	2.57	3	2.05	1.71	1.26	110-200	110
B25A	2.54	3.3	2.4	2.06	1.26	110-200	110
B30	2.78	3.2	2.34	2.01	1.26	110-200	110



# Standard Compartments

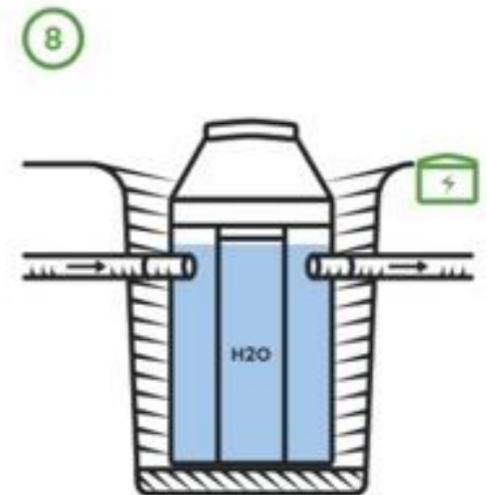
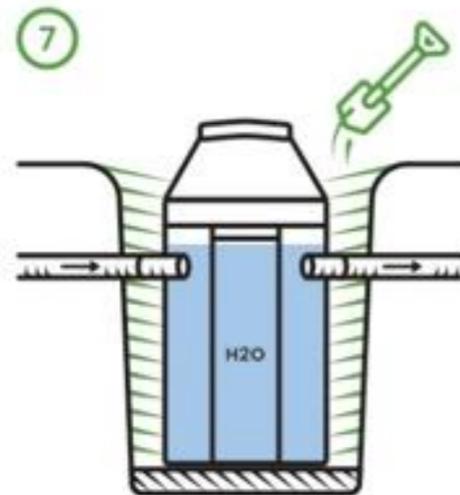
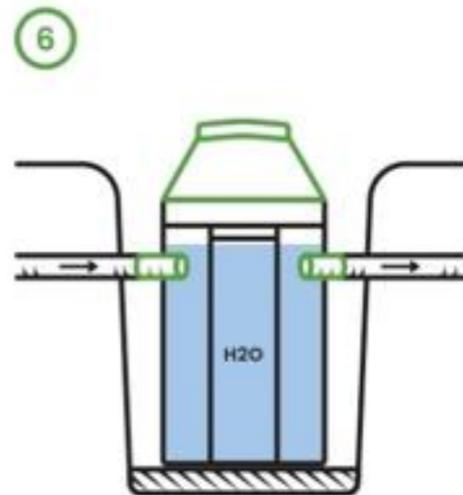
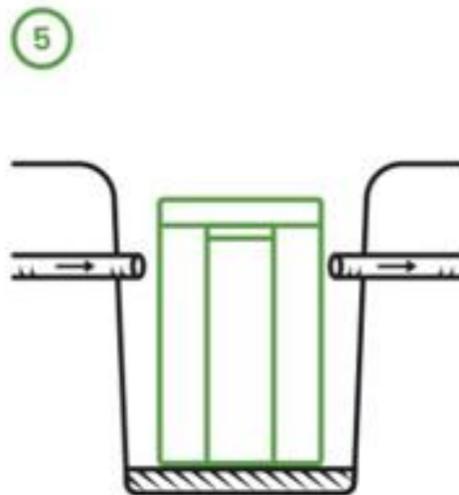
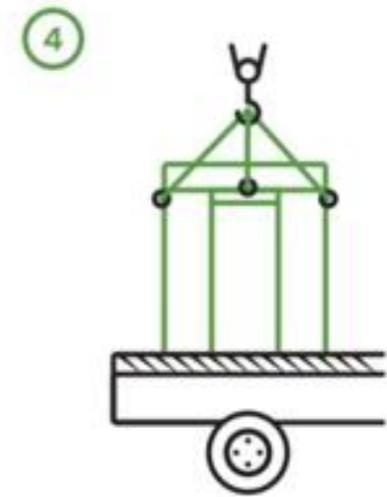
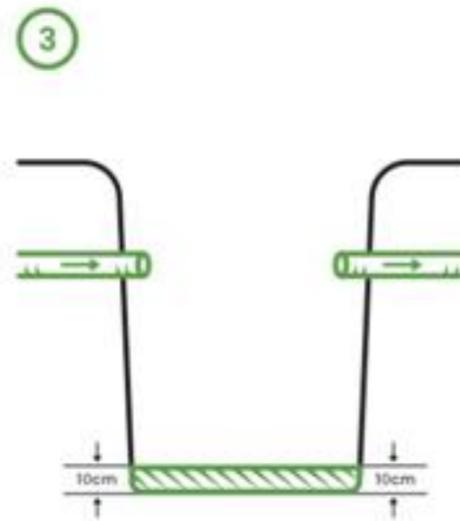
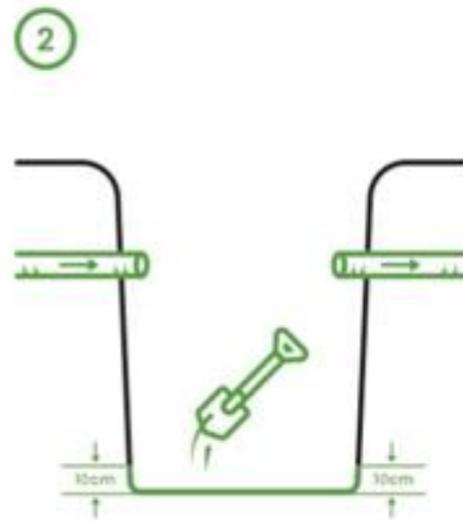
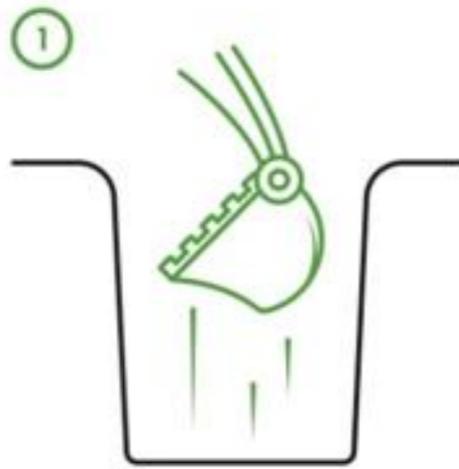


## TECHNOLOGY

- 1 Inlet pipe
- 2 Mechanical grate
- 3 Air supply
- 4 Anaerobic area
- 5 Anoxic area
- 6 Circulation pipe
- 7 Aeration diffuser
- 8 Aeration area

- 9 Precipitator area
- 10 Air supply to the precipitator area
- 11 Outlet water flow regulator
- 12 Outlet
- 13 Air distribution dampers
- 14 Air distribution manifold
- 15 Blower
- 16 Blower tank

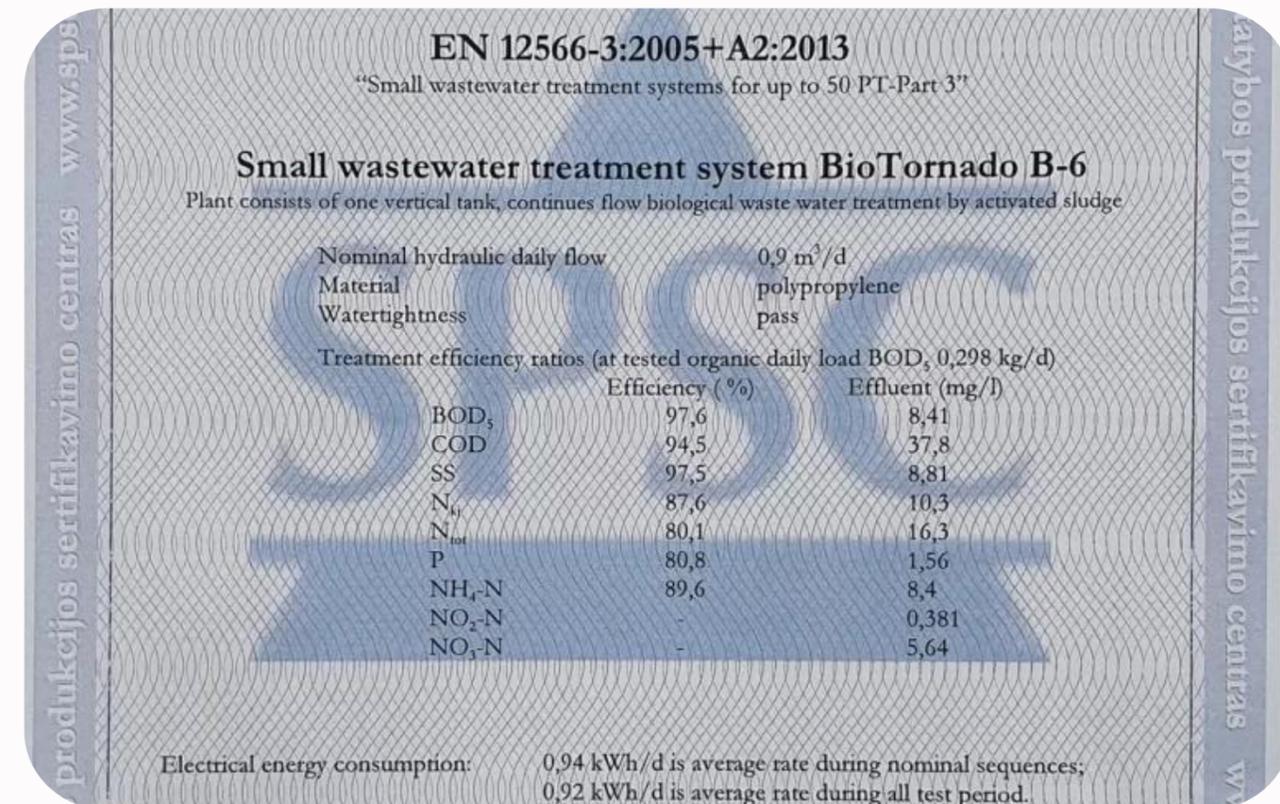
# Installation Process



# Certificates and Patents

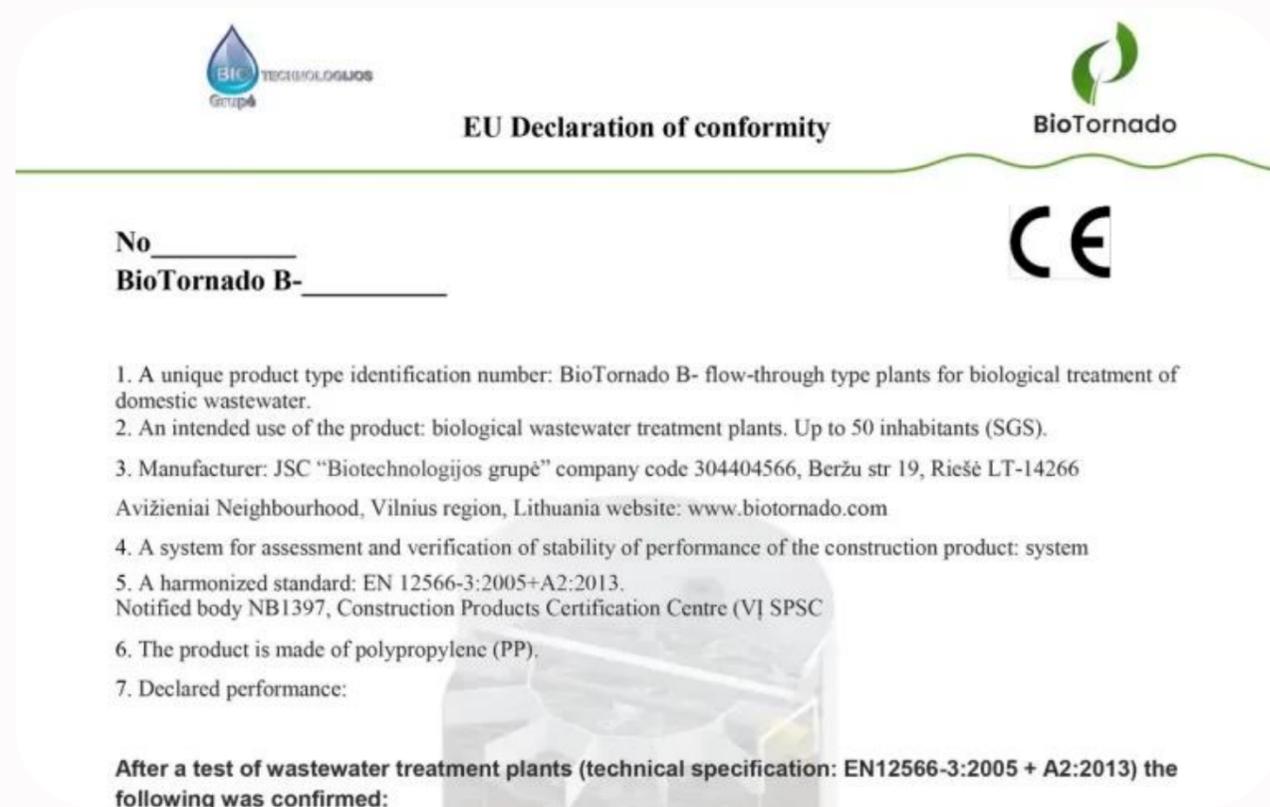


**BioTornado**  
EU patent certificate



**BioTornado**  
Performance results certificate

# Certificates and Patents



**BioTornado**  
**EU declaration of comformity**

<b>CE</b>		
Biotechnologijos grupė JSC Beržu str 19, Riešė LT-14266 Avižieniai Neighbourhood, Vilnius region, Lithuania www.biotornado.com		
EN12566-3:2005+A2:2013		
<b>Model:</b>	B-_____	
<b>Material:</b>	polypropylene	
<b>Cleaning efficiency:</b>		
Cleaning efficiency percentages (test using daily organic pollutant content BDS5 = 0,298 kg)	BDS <sub>5</sub>	97,6%
	ChDS	94,5%
	SM	97,5%
	N <sub>ij</sub>	87,6%
	N <sub>b</sub>	80,1%
	P	80,8%
	NH <sub>4</sub> -N	89,6%
<b>Device performance</b>		

**BioTornado**  
**CE marking certificate**



# BioTornado

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**Explore our domestic wastewater solutions**

