Uni:Gem★
Septic conversion unit
Unique septic tank to sewage treatment plant conversion unit

Overview

Marsh Industries' latest innovation, the Uni:Gem★, is a unique septic tank conversion unit which exceeds EN12566-3 / EN12566-6 standards and conforms with 2020 General Binding Rules (GBRs for septic tanks or small sewage treatment plants for domestic use).

Positioned behind any existing septic tank the Uni:Gem★ treats the septic tank discharge to an effluent quality of BOD 12.25:TSS 16:Ammonia 14.845 mg/l (The UK Forward is less than BOD 20:TSS 30: Ammonia 20), meaning final effluent can be discharged safely to a river, ditch or watercourse.

The Uni:Gem★ provides notable benefits for existing septic tank owners, particularly those who need to upgrade or replace their septic tanks.

CE UK CA

Operating principle

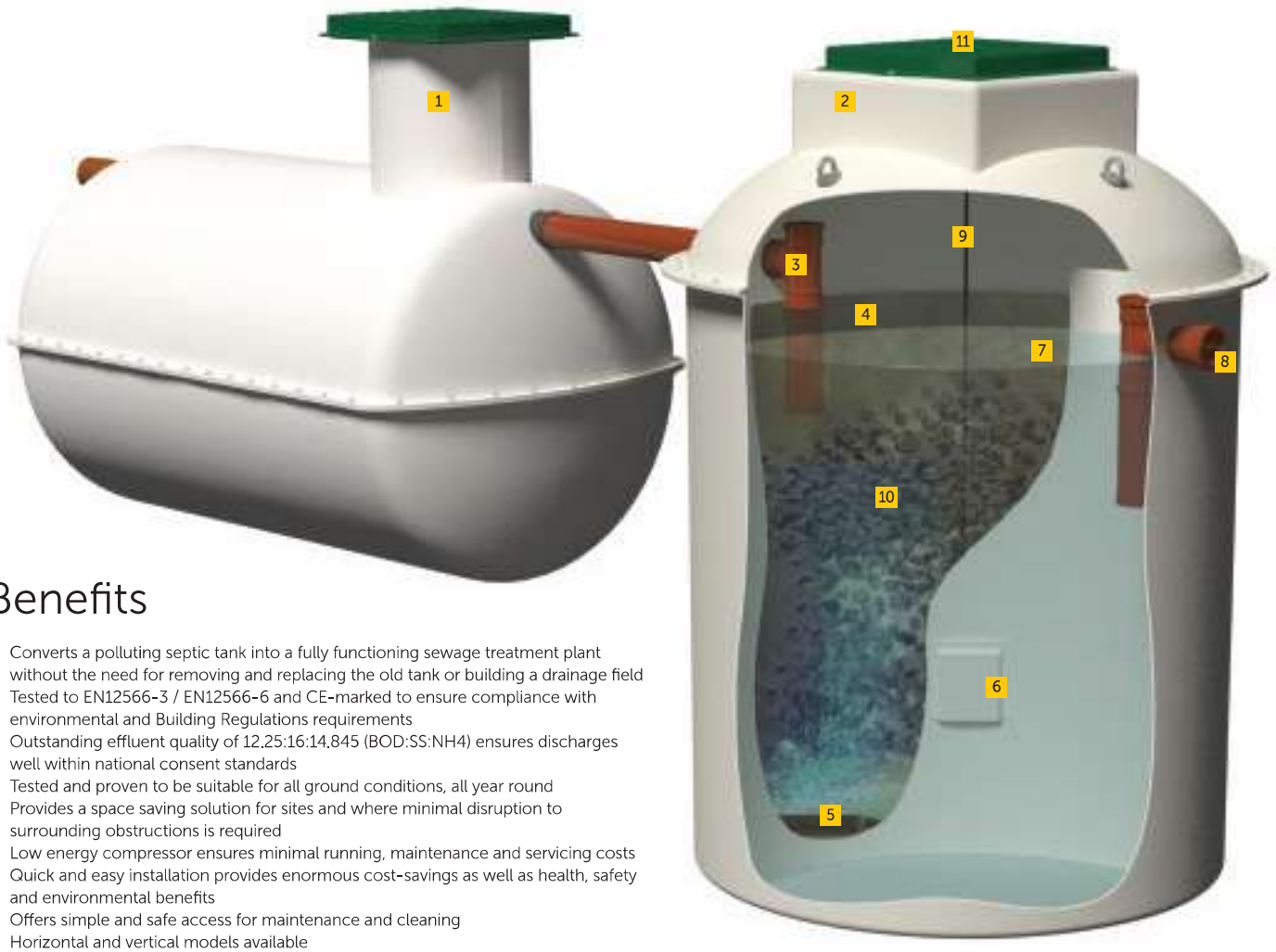
Effluent from the existing septic tank or sewage treatment plant is transferred to the Uni:Gem★ unit and enters the aeration chamber where it is treated to remove dissolved constituents. Here aerobic bacteria, supported by diffused air and mobile media, ensures full treatment is achieved before the treated effluent (and 'sloughed off' bacteria) flows to a final settlement chamber prior to discharge.

Key

1 Existing septic tank
2 Uni:Gem★ tank
3 Inlet
4 Aeration chamber
5 Air diffuser
6 Transfer to final settlement
7 Final settlement
8 Outlet
9 Air diffuser feed
10 Bio media
11 Manway access



Whisspurr
Acoustic Vibration Reduction (AVR) unit
Reduces noise and vibration on all types of diaphragm compressors. See page 17.



Benefits

- Converts a polluting septic tank into a fully functioning sewage treatment plant without the need for removing and replacing the old tank or building a drainage field
- Tested to EN12566-3 / EN12566-6 and CE-marked to ensure compliance with environmental and Building Regulations requirements
- Outstanding effluent quality of 12.25:16:14.845 (BOD:SS:NH4) ensures discharges well within national consent standards
- Tested and proven to be suitable for all ground conditions, all year round
- Provides a space saving solution for sites and where minimal disruption to surrounding obstructions is required
- Low energy compressor ensures minimal running, maintenance and servicing costs
- Quick and easy installation provides enormous cost-savings as well as health, safety and environmental benefits
- Offers simple and safe access for maintenance and cleaning
- Horizontal and vertical models available
- Integral lifting eyes for improved on-site handling
- Final effluent is clear and odourless



Specifications

Model	Width Ø +/-50mm	Height +/-50mm	Inlet		Outlet	
			Invert	Ø	Invert	Ø
A **UG-SCS** **Uni:Gem★ up to 6PE** *For shallow cylindrical septic tanks*	1512 1652 over flanges	2300	800	110	900	110
B **UG-SPH** **Uni:Gem★ up to 6PE** *For spherical 'onion-shaped' septic tanks*	1512 1652 over flanges	2540	1040	110	1140	110
C **UG-STP6** **2800L septic tank** **Uni:Gem★ up to 6PE** *EN12566-6 complete package sewage treatment plant*	1870 1512 1652 over flanges	2330 2090	550 590	110 110	590 690	110 110



> Uni:Gem★ supplied with external compressor and compressor housing
> Check your septic tank outlet invert (ground level to the bottom of the pipe)
> Other sizes of Uni:Gem★ are available. Contact Marsh Industries for more information
> *For precise tank sizes and configurations, please contact Marsh Industries*
> *All dimensions in mm*

2020 General Binding Rules

For decades, millions of septic tanks have been installed throughout the UK in rural and urban areas. Septic tanks are known to be ineffective at processing sewage to modern environmental standards, causing long-term damage to the country's natural water infrastructure and wildlife.

It was therefore inevitable that new rules and a code of conduct would be introduced to prevent the effects of wastewater pollution once and for all; The Environmental Permitting (England and Wales) (Amendment) (England) Regulations 2014 came into force on 1 January 2015 creating the General Binding Rules (GBRs) for septic tanks or small sewage treatment plants for domestic use. These rules are designed to reduce the level of pollution from sewage in the nation's watercourses.

The rules state that any existing septic tank discharging to surface water, ie, to a water ditch, stream or river, etc, must either be upgraded or replaced with a new package sewage treatment plant (by 1st January 2020).

Marsh Industries, the leading UK manufacturer of package sewage treatment plants, produces over 3000 units per year. However the company's range of Uni:Gem★ septic conversion units is the only product available on the market which can treat wastewater from an existing septic tank without the need for a complete replacement product or drainage field upgrade.

To comply with the GBRs and current EN standards, the entire Uni:Gem range was redeveloped from the ground up and tested, not only to meet, but to exceed UK and International standards. The Uni:Gem★ was born – creating an **'industry first' 2020 compliant septic conversion unit** with outstanding processing performance.

The Uni:Gem★ range was tested in accordance with BSEN12566-3/A1:2009 and EN12566-6 standards at the PIA GmbH test facility in Aachen, Germany, over the course of 38 weeks with a daily loading of:

Flow: **900 litres/day** BOD: **360g** NH^4: **48g**

Testing occurred between November 2018 and August 2019 to ensure all seasons were covered whilst minimum/maximum temperatures were tested to assure Ammonia and BOD process reduction for the UK climate. Holiday periods were also simulated during the test procedure.

Final test results yielded an output of 12.5:16:4mg/ltr (BOD:Suspended solids:Ammonia) that is well within national discharge consent requirements.

The Uni:Gem★ is an extremely cost effective solution for converting any polluting septic tank into a fully compliant sewage treatment plant ensuring homeowners, estate managers, water companies/amenities have an effective way to keep the environment clean whilst providing a quick and efficient installation process.