Marsh Uni:Gem Range

For Populations 6-25PE Designed To Meet EN12566-3 Secondary Treatment For Septic Tanks & Sewage Plants 20:30:20

The Uni:Gem converts your septic tank into a sewage treatment plant.

The Uni:Gem was tested to EN12566-3 in conjunction with a traditional septic tank. Uni:Gem is the market leader in Septic Tank upgrades and produces a final effluent quality better than 20:30:20.

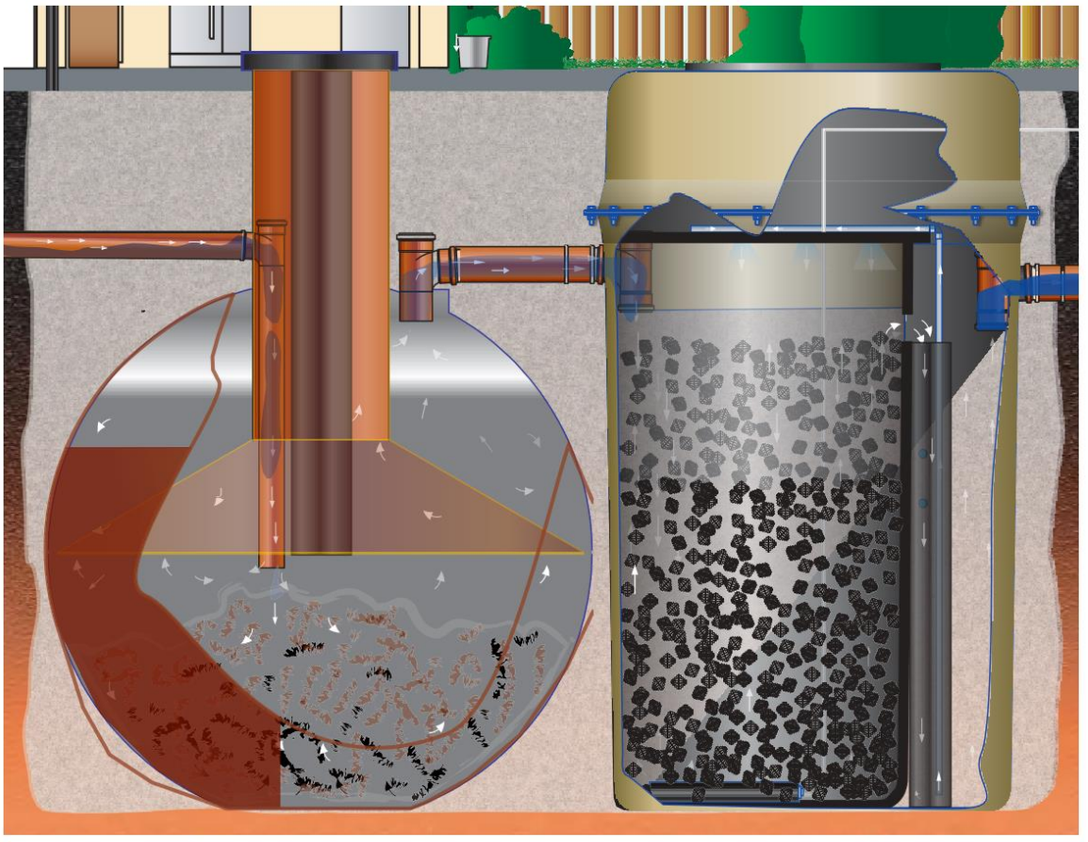
Uni:Gem models have been installed in hundreds of domestic sites and commercial installations including those of the Environment Agency offices, the National Trust and English Heritage.

The Uni:Gem comes in nine standard models which are ex-stock, larger capacities are made to order. The unique secondary sewage process converts the sewage from the septic tank in a single tank. This comprises of an aeration tank that contains oxygen rich diffused effluent together with a high surface bio-media bed.

The oxygen and media grows bacteria known as bio-mass that further breaks down the suspended solids. Biological Oxygen Demand (BOD) is reduced from over 200mg/litre to below 20mg/l. This effluent process reduces also the ammonia levels, the effluent then flows from the aeration section into the outer humus section known also as final settlement. The effluent stays in this chamber for over 24 hours where further ammonia reduction takes place to below 20mg/l.

The Uni:Gem recycles the treated effluent back to the aeration section at a rate of over 5 litres per minute. The Uni:Gem Six Person uses an energy efficient blower that uses 35 watts an hour, average annual running costs are £32 per year. Uni:Gem was launched seven years ago and has been installed in hundreds of sites in the UK.

Uni:Gem is easy to install and maintain inlet depths can be adjusted to suit either shallow or deep inverts. Shallow Uni:Gems are manufactured for areas of either high water table or hard rock.



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The Environment Agency & SEPA now require the full registration of all septic tanks & sewage plants in the UK. A minimum standard of BOD 20mg/l :Suspended Solids 30mg/l :Ammonia 20mg/litre effluent is required by the Environment Agency for the effluent discharging into a watercourse or ditch. Septic tanks typically discharge effluent at BOD 180mg/l :Suspended Solids 120mg/l :Ammonia 40mg/litre, this can lead to prosecution and/or the capping of the septic tank, resulting in very expensive regular emptying of the existing septic tank.

Marsh Industries over the last six years has sold its Uni:Gem range to organisations and companies in the UK such as the National Trust, English Heritage, British Waterways ,The Environment Agency and hundreds of specialist sewage companies. The Uni:Gem range has now been further improved to meet even higher final effluent quality standards The range offers a further four stages of final effluent treatment, aeration, separate final settlement, a unique continuous recycling system and final patented Polylok© filtration before final discharge. This is a unique advanced treatment from Marsh for either domestic, commercial septic tanks or underperforming sewage treatment plants. These plants are designed and have been tested to meet both current UK and forth coming EU legislation. The plants can cater for either a single dwelling or multiple units and commercial industrial buildings. Beware of companies offering small aeration only add on tanks, these cannot guarantee the effluent quality.

Uni:Gem range uses aerobic extended aeration, combined with biomass activation through Warden Plastics Media Technology. The plant infuses air into the effluent, biomass (micro-organisms) multiplies at a very fast rate which accelerates the digestion of the nutrients in the sewage, and this rapidly lowers the Biological Oxygen Demand (BOD). The process is continuous, and results in the lowering of the Total Suspended Solids (TSS) and the reduction of Ammonia (NH4) in the final treated effluent. In the Marsh Uni: Gem plant the nitrification of the ammonia and then the de-nitrification of the nitrates is processed through the mass of the bacteria.

The Uni:Gem range is designed in engineered glass fibre moulds, to provide the optimal conditions for the formation of biomass for the breakdown of raw sewage.

The result of the process will meet the future European Standard EN12566-3. We suggest installing either a non-return valve or a U bend (water trap) between the existing septic and the Uni:Gem, this will prevent smell from the septic. Marsh Industries are at the fore front of product develop in the sewage and effluent treatment industry.

Daily loading is calculated at: Hydraulic Flow:180litres per person/day BOD: 60mg per person/day NH4 : 8mg per person/day Retention time is normally 48 hours. Ph. neutral ASL at 5 litres per minute.

The average annual running costs of a Uni:Gem 2 are approx. £32.00 per year.

Est. For The Correct Plant Size	Gem 2 6PE	Shallow Gem 2 6PE	Gem 2A 12PE	Shallow Gem 2A 12PE	Shallow Gem 2B 15PE	Gem 3 20PE	Gem 4 25PE	Gem 5 30PE	Gem 6 35PE
Suitable For Any Of These **People=PE**	4 bed home 6 people	4 bed home 6 people	2no. 4 bed homes 12 people	2no. 4 bed homes 12 people	2no. 4 bed & 1no. 3 bed homes16 people	4no. 3 bed houses 20PE	4no. 4 bed houses 24PE	6no.3 bed houses 30PE	7no. 3 bed houses 35PE
At Work or Office no canteen	9 people working	9 people working	18 people working	18 people working	25 people working	30 people working	38 people working	48 people working	56 people working
Height Tank	2200mm	1393mm	2200mm	1393mm	2300mm	2300mm	2300mm	2300mm	2300mm
Width Tank	1200mm	1295mm	1930mm	1295mm	1930mm	1930mm	1930mm	1930mm	1930mm
Length Tank	Cylindrical	1502mm	Cylindrical	2002mm	3000mm	Cylindrical	2800mm	3500mm	4210mm
Ground Level To Inlet Invert	1005mm	125mm	1005mm	125mm	125mm	700mm	700mm	700mm	700mm
Ground Level To Outlet Invert	1080mm	200mm	1080mm	200mm	200mm	875mm	875mm	875mm	875mm
Max. Power Consumption	30w	30w	70w	70w	120w	120w	150w	220w	220w
Effluent Quality	20:30:20	20:30:20	20:30:20	20:30:20	20:30:20	20:30:20	20:30:20	20:30:20	20:30:20
Gravity Or Pumped Outlet	Both Available	Both Available	Both Available	Both Available	Both Available	Both Available	Both Available	Both Available	Both Available
Invert Risers Available	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Des-ludge Full Loading Months	12	12	12	12	12	12	12	12	12
Weight Empty (approx.)	130kg	140kg	190kg	160kg	225kg	375kg	600kg	700kg	740kg
Tested To EN12566-3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Volume of Surround Concrete Pea-shingle	2m³	2m³	3m³	3m³	3.2m³	3.2m³	4m³	4.6m³	4.6m³

Optional Extras

Carbon cowl filters, High Level Alarm and 110mm non-return valve.

The compressor is housed externally, an RCD box and alarm are supplied as standard. The plant can be fitted with pumped outlets. The standard MDPE fittings fitted are either 50mm or 63mm. Manhole covers are 600mm x 600mm for Uni:Gem2 & 2A, and 900mm x 700mm for other models. The standard colour is natural GRP. The guarantee on the plants are structurally 25 years, the compressor is 2 years, the pumps where applicable 2 years and diffusers 5 years.