

# High-performance solids retention for storage sewers and stormwater overflows

## Amiscreen



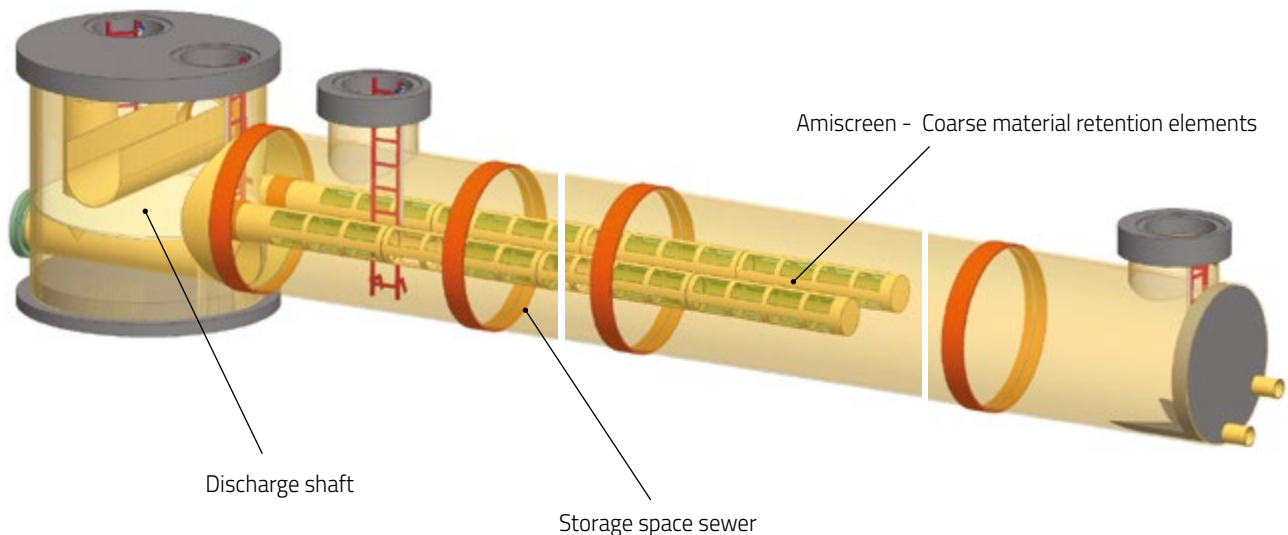
# Amiscreen

## The perfect combined sewage treatment

**Amiscreen products serve as additional pollutant retention similar to a rake or sieve system in a stormwater overflow or storage sewer.**

The classical screen element for coarse material retention is relocated from the weir into the reservoir. The advantage: regardless of a defined, mostly short weir length, a high ratio of screen surface is created. More screen surface, in turn, signifies an increase in openings with a defined perforation. The flow rate is reduced to a level at which dirt particles only pass through the openings at a very low velocity. Larger particles slide along to the walls and are not forced into the perforations. Therefore, they cannot clump together and clog the screen in a short time, leading to significantly less blockages.

The Amiscreen system is designed using optimised perforation to retain coarse solids. All dirt particles with a grain size of more than 8 mm are retained in a mesh with openings of 8 mm x 8 mm. In addition, 50 % of all particles with a diameter of 4 mm and 25 % of particles with 2 mm diameter are filtered out. Visible coarse materials in the receiving waters or at the discharge point of the stormwater discharge, such as faeces or cellulose products, are therefore a thing of the past.

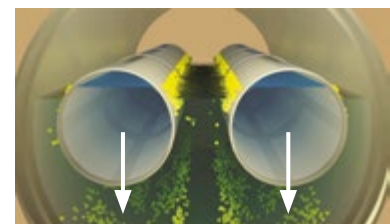
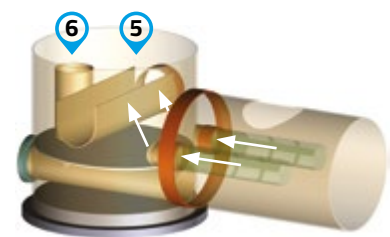
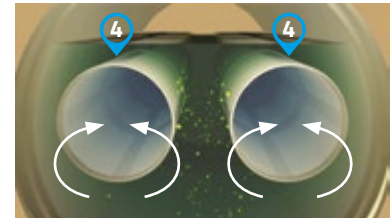
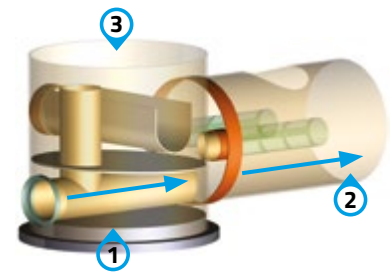




## Design and Operation

The typical Amiscreen storage system is a storage sewer with overflow, consisting of a pipe reservoir, a discharge structure, and a flow control system.

- The direct inlet **1** into the storage reservoir **2** is essential. The weir in the discharge structure is located in a separate chamber **3**.
- The solids retention system is integrated in the storage reservoir and consists of perforated pipelines that form the screening elements **4**.
- During wet weather, the water level rises in the storage reservoir and water enters the screening elements through the perforations.
- The perforated pipelines are sealed at each end inside the storage reservoir but allow for water to flow into the discharge chamber via the existing weir **5**. Therefore, only water that has passed through the perforated pipes can be discharged. As soon as the storage reservoir is full, the discharge commences.
- At the weir, no pollutant retention is necessary. There is no need for baffles or the control of rise and flow rates.
- When the rainfall is over, the storage sewer is slowly drained through the control valve. The residual water in the overflow chamber flows back to the storage reservoir through the screens, thereby removing deposited coarse solids. Once the reservoir is empty, the solids are transported to the sewer main via the dry weather drain.
- An emergency overflow **6** can be integrated upon request.



## Why is the Amiscreen so efficient?

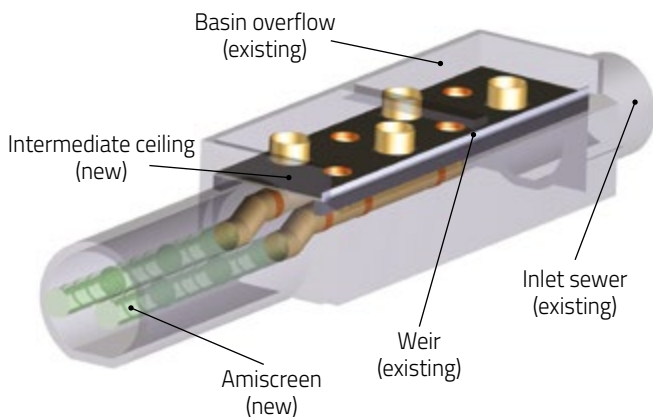
- Large perforated surfaces in circular shapes, arranged in multiple lines, are installed inside storage chambers, most of which are several meters long and suitable for manentry. The screening surface is 15 to 25 times greater than comparable filter surfaces of conventional rakes.
- The Amiscreen system is constructed in a way that, thanks to the perforations, the flow rate remains at less than 0.05 m/s. This is lower than the maximum flow rate for a stormwater sedimentation tank. The fine mesh ensures that no coarse particles can be trapped, thus avoiding the build-up of contaminants and screen blockage.
- The system operates completely without any mechanical cleaning elements or other moving parts. It does not require an external power supply. Maintenance costs are reduced to an absolute minimum with the cleaning cycle for the system being 6 months or even much more.

# Amiscreen – for Rehabilitation

## Upgrading a storage sewer

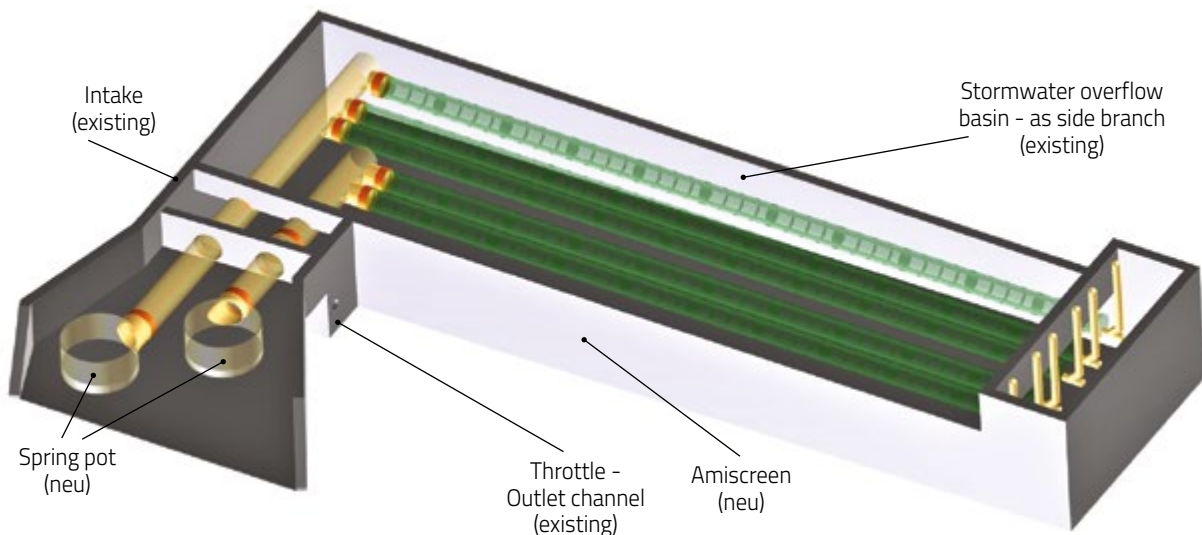
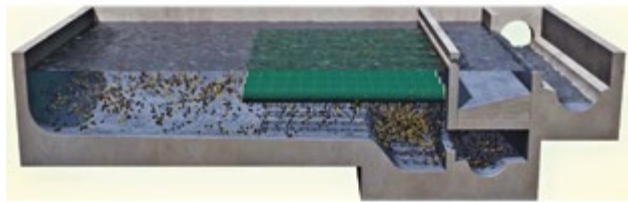
It only takes a few steps to integrate the Amiscreen system into an existing storage sewer:

- Requirement: the diameter of the basic system is  $\geq 1,800$  mm (easily accessible)
- Mounting of the Amiscreen screening elements into the storage sewer
- Modification and adjustment of the existing stormwater discharge

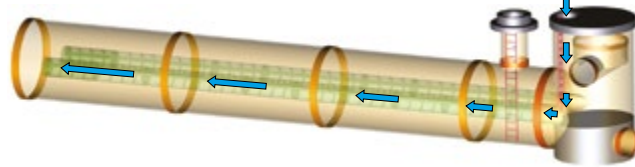
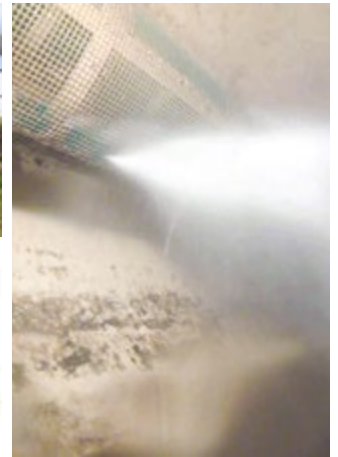
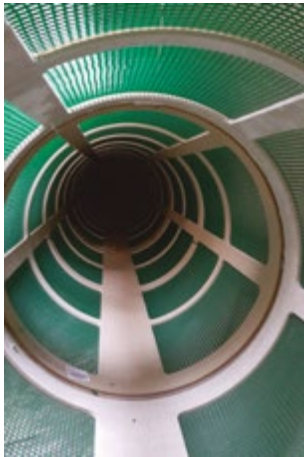


## New construction and upgrade of stormwater overflow basins

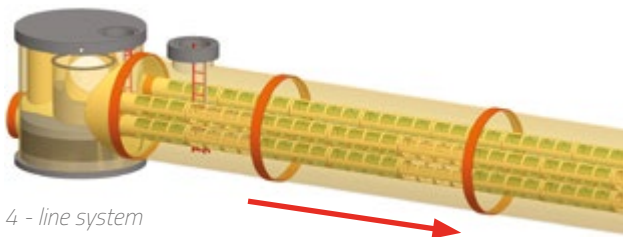
The Amiscreen solids retention system can be also integrated in stormwater overflow basins (e.g. made of concrete), both in new constructions and as subsequent upgrade. Here again, the screen elements are placed apart from the weir in the storage area. The transition to the existing, straight weir is implemented with an intermediate chamber. Alternatively, domes or spring pots made of GRP can also be used.



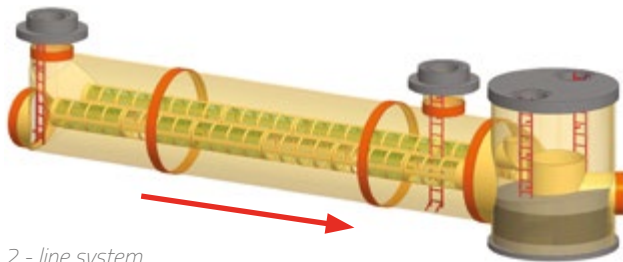




Cleaning the Amiscreen elements



4 - line system  
overhead discharge



2 - line system  
invert discharge

## Amiscreen is versatile

The Amiscreen system is equally suitable for both overhead and invert discharges. For storage sewers, Amiscreen is generally arranged in a 2-line format, if necessary also in 4 lines. In larger storage reservoirs, multiple Amiscreen lines can be installed.

Currently, the retention elements are used in nominal diameters of DN 400 to DN 800. The recommended minimum perforation is 8 mm x 8 mm. The design and structure of the Amiscreen system are protected by patent.



### Advantages

- Huge perforated screening surface, even with small overflow weirs
- 100% retention at defined filter sizes
- No external energy source (water or electricity) needed
- No moving parts – thus no wear and tear
- Completely corrosion resistant
- Storage sewer or reservoir remains accessible
- Simple cleaning of the retention elements
- Single parts replaceable
- No increase in overflow and back pressure
- Suitable for upgrades/retrofitting
- Low maintenance
- Cost-effective

# Why there is nothing else like an Amiblu pipe system



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