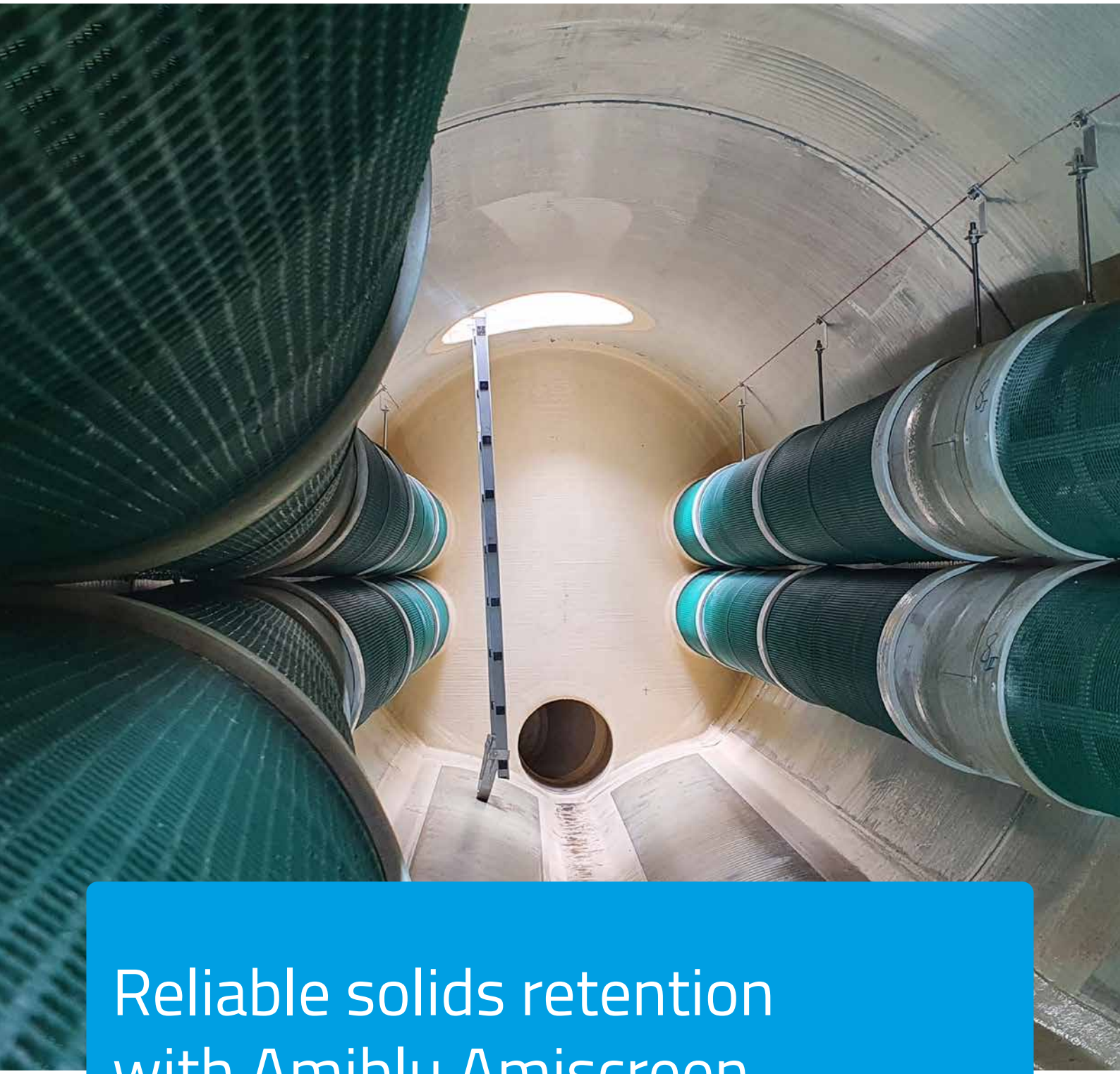
Amiblu®

Amiblu Pipe Systems
Engineered for the next generations



Reliable solids retention with Amiblu Amiscreen

Combined sewage treatment for storage sewers and stormwater overflows

Sustainable Amiblu solutions engineered for the next generations

Glassfiber reinforced plastic (GRP) pipes and system solutions by Amiblu are the product of over six decades of innovation, experience, and development. Our broad range of pipes in all shapes and sizes is completed by special state-of-the-art innovations that are in line with the future requirements of urban societies. This way, we guarantee that you get the best option for your individual project – our Amiblu experts are happy to assist you in making the right choice.

Environmental sustainability
Our thermoset resins are designed to be inert and stable for the next generations. Glassfibers add stability and strength.

Economic sustainability
Lowest capital cost, lowest installed cost, and lowest lifetime cost. Sustainability doesn't have to cost the earth.

Social sustainability
Operators of water, sewer, and energy infrastructure need our pipe technologies. We design GRP pipe networks for generations to come.

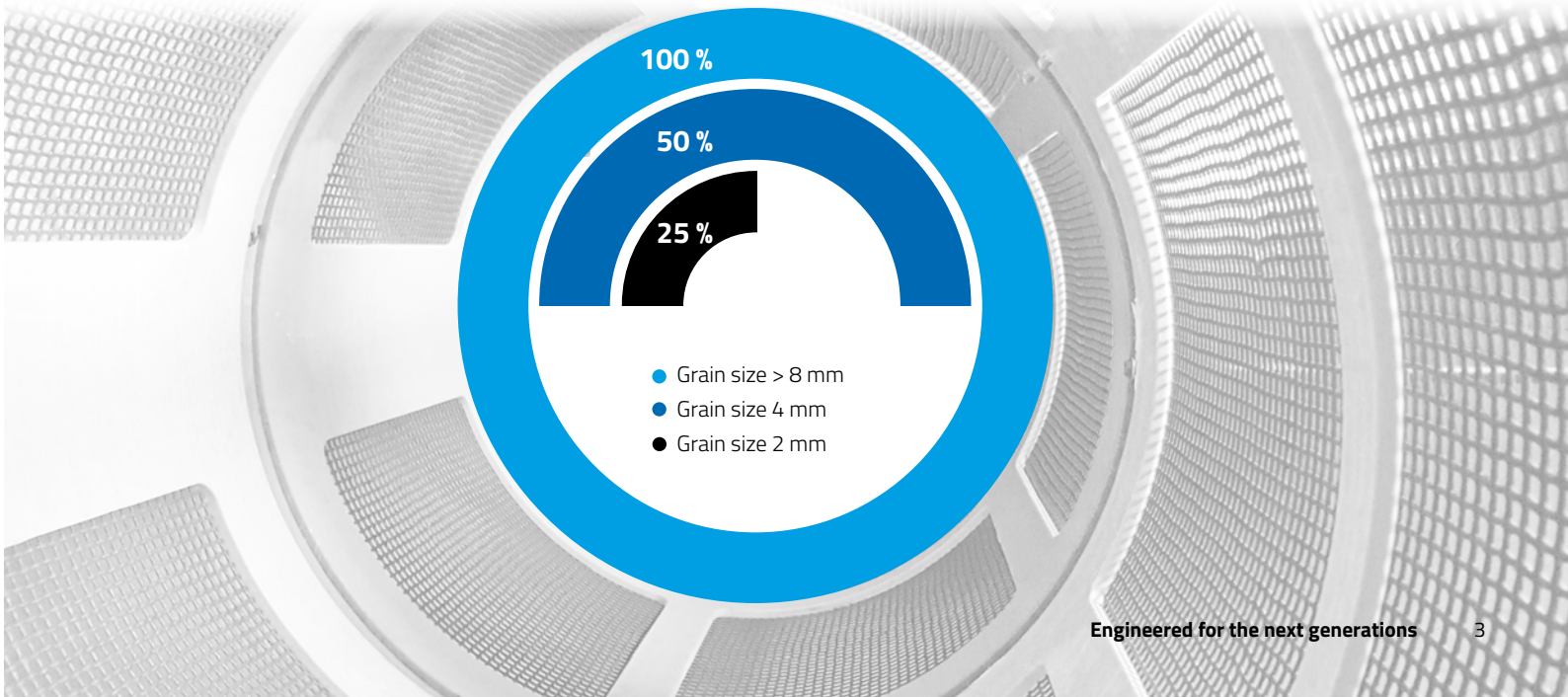
Our promise: a solid sewer upgrade for solids-free wastewater

Extreme weather events and the constant growth of cities make the reliable, efficient treatment of wastewater a key issue for water facilities and municipalities. Rainfalls become increasingly heavy, impervious surfaces such as roofs and asphalted roads lead larger amounts of rain directly into sewer systems, and more and more people are connected to existing pipe networks. As a result, urban sewers and wastewater treatment plants often reach their capacity limit.

The patented Amiblu Amiscreen system offers a smart way to upgrade overcharged and potentially failing pipe networks so these can be reliably operated for many further years. It is typically designed as a storage unit with overflow, consisting of a pipe reservoir, a discharge structure, and a flow control system. Unlike traditional pollutant retention systems that are located at the – generally rather short – weir of a storage sewer or stormwater overflow, the filter elements of Amiblu Amiscreen are integrated inside the GRP reservoir. This results in a larger screening surface and thus much better retention function.

The circular elements consist of a GRP frame and corrosion-resistant plastic filter grid and reliably filter suspended solids from the wastewater. 100 % of dirt particles with a grain size of more than 8 mm, 50 % of particles with 4 mm diameter and 25 % of particles with 2 mm diameter are reliably retained. This way, wastewater treatment plants are protected from overloads and visible pollution in the receiving waters is a thing of the past. The screening elements of the Amiblu Amiscreen system can also be easily included in existing pipe systems or storage structures of other materials.

Amiblu Amiscreen Filter Performance



Your benefits: reliable solids retention, minimal maintenance

The screening surface of the Amiblu Amiscreen is 15 to 25 times greater than comparable filter surfaces of conventional rakes. Arranged in multiple lines inside a corrosion-resistant, highly durable GRP storage chamber, the circular mesh ensures that coarse solids are effectively filtered. Thanks to a very low flow rate of 0.05 m/s, the particles don't get pressed against the perforations and therefore do not clog the screen, reducing maintenance to an absolute minimum. Plus: The system operates without any mechanical cleaning elements or other moving parts and does not require an external power supply.

Huge screening surface
The perforated Amiscreen elements are installed directly inside storage chambers or overflow structures. This design allows for a 15 to 25 times greater screening surface than that of conventional rakes.

Full corrosion resistance
Sewage contains aggressive chemicals that can damage pipe structures in the long run. GRP pipes by Amiblu are inherently resistant to corrosion and so are the Amiscreen elements, which consist of a durable plastic mesh and GRP matrix.

Up to 100 % solids retention
All particles with a grain size of more than 8 mm, 50 % of solids with 4 mm, and 25 % of solids with 2 mm diameter are reliably filtered out. Visible pollution of the receiving waters or at the discharge point of the sewage are therefore a thing of the past.

No external power supply needed
The system operates completely autonomous, without any mechanical cleaning elements or other moving parts. It does not require an external power supply.

Easy maintenance
The fine mesh ensures that no coarse particles can be trapped and blockages are avoided. An additional smart sensor system facilitates maintenance and thereby minimizes costs and efforts.

Suitable for retrofitting
The Amiscreen solids retention system can be integrated in stormwater overflow basins or storage sewers of other materials, e.g. concrete, both in new constructions and as upgrade.

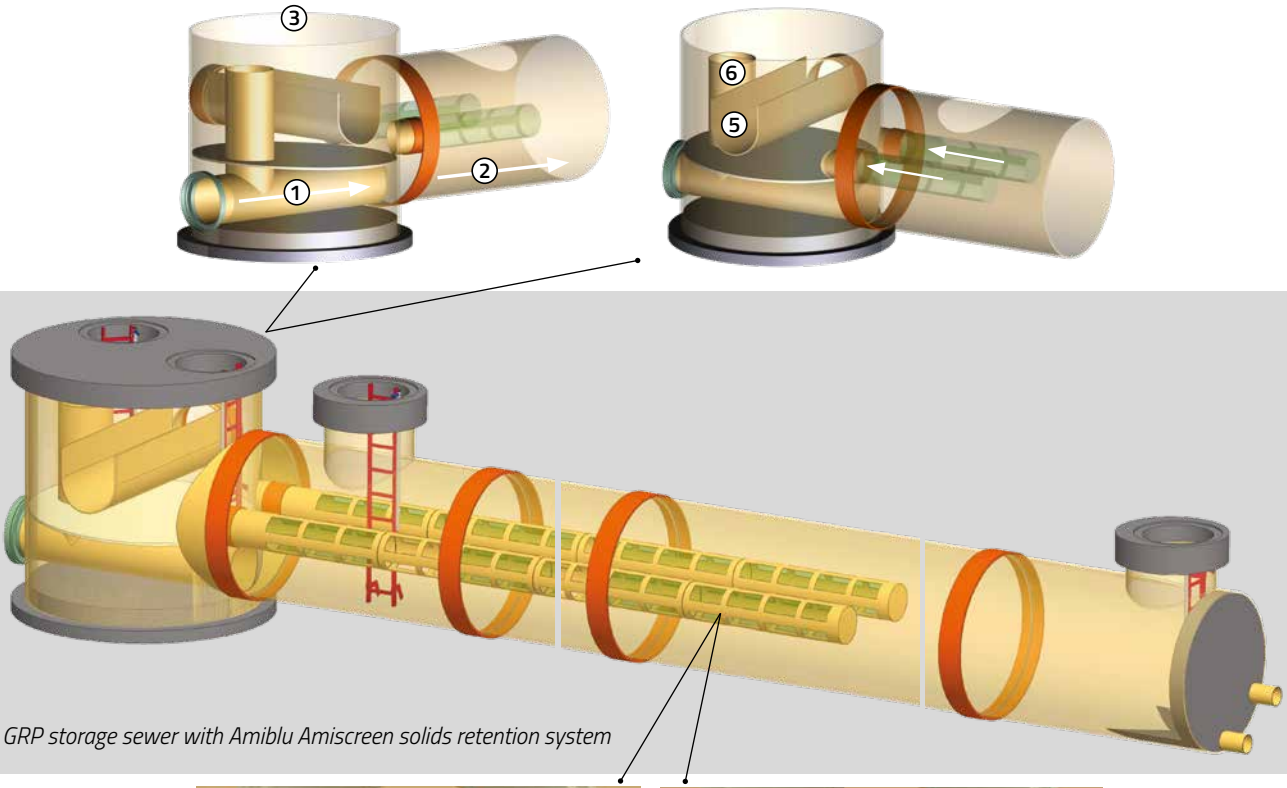
Design and operation of the Amiblu Amiscreen

The typical Amiblu Amiscreen system is a storage sewer with overflow, consisting of a pipe reservoir, a discharge structure, and a flow control system. Here's how it works.

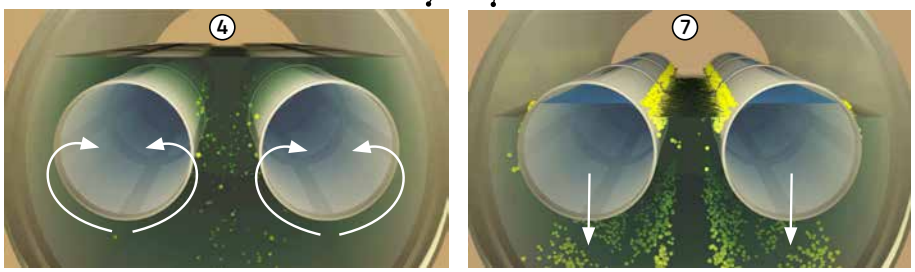
The Amiscreen system features a direct inlet (1) into the storage sewer (2). The weir is located in a separate overflow shaft (3). The solids retention system is integrated in the storage reservoir and consists of perforated pipes that function as screening elements (4).

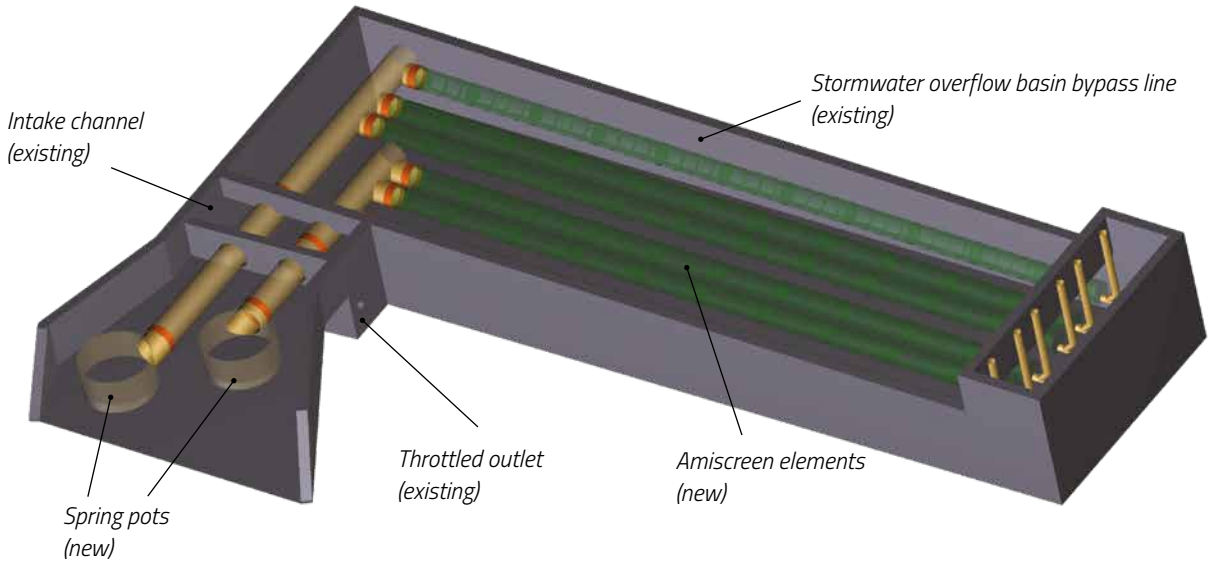
During rainfall, the water level in the storage reservoir rises and water enters the screening elements through the perforations. The perforated pipelines are sealed at each end inside the storage reservoir but allow for water to flow into the discharge chamber via the existing weir (5). Therefore, only water that has passed through the perforated pipes is discharged. As soon as the storage reservoir is full, the discharge commences. At the weir, no additional 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. With the lowering water level, the pollutants slowly sink down to the bottom of the basin (7). 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.



GRP storage sewer with Amiblu Amiscreen solids retention system





3D model of a concrete stormwater overflow chamber with integrated Amiscreen solids retention system

The Amiscreen solids retention system can also be integrated into storage sewers and stormwater overflow basins of other materials such as concrete, both in new constructions and as subsequent upgrade. Concrete basins operate smoothly during dry weather conditions, but in the case of heavy rainfalls this can quickly change. Large amounts of stormwater with pollutants flow into the basin in short time. The suspended solids are washed over the weir into the overflow pipe, which empties them into the receiving waters, leaving a path of dirt and destruction.

As in the GRP storage sewer, the screening 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 be used.

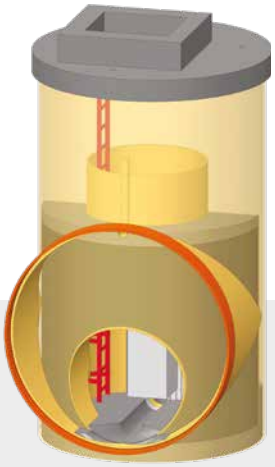
Follow the links below to learn how a GRP storage chamber and concrete stormwater overflow basin with integrated Amiscreen solids retention systems work:

Video: GRP storage chamber with Amiblu Amiscreen

Video: Concrete stormwater overflow basin with Amiblu Amiscreen

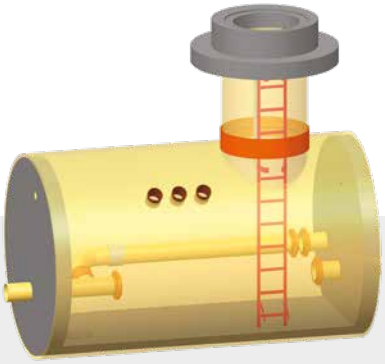
Versatile structure, patented design

The design and structure of the Amiblu Amiscreen system are protected by patent. To meet all project demands in an optimal manner, the single components of the Amiscreen can be customized with several features and functionalities. The images below show some examples of possible designs – further variations are available on request.

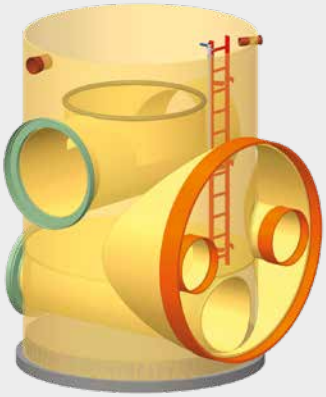


Vortex flow control, wet operation

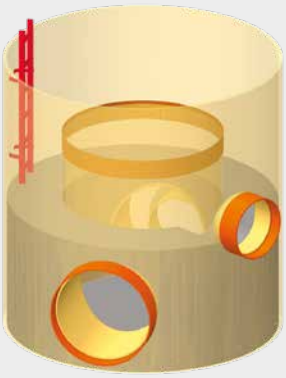
Mechanical flow control, semi-dry operation



Electrical flow control, dry operation



Stormwater overflow, trough inlet

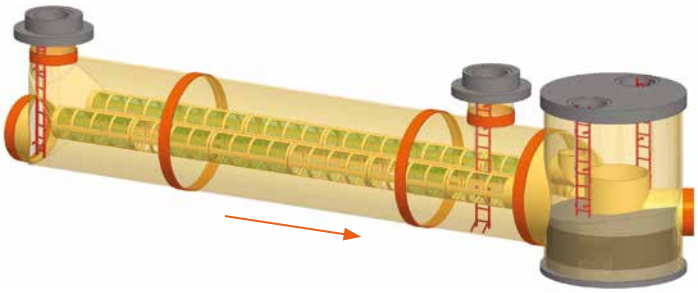


Stormwater overflow, spring pot

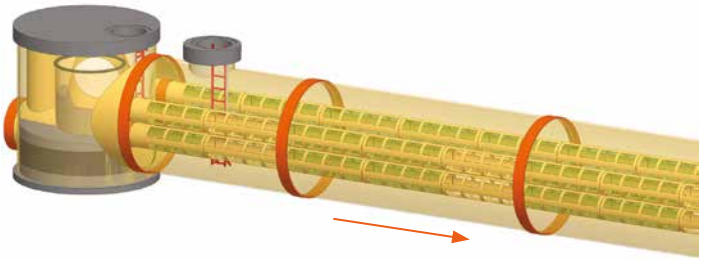
Weir stucture

Emergency overflow

The Amiscreen system is equally suitable for both overhead and invert discharges. For storage sewers, Amiscreen is generally arranged in a two-line format, if necessary also in four lines. In larger storage reservoirs, multiple Amiscreen lines can be installed. The screening elements are typically supplied in nominal diameters of DN 400 to DN 800 with a recommended minimum perforation of 8 mm x 8 mm.



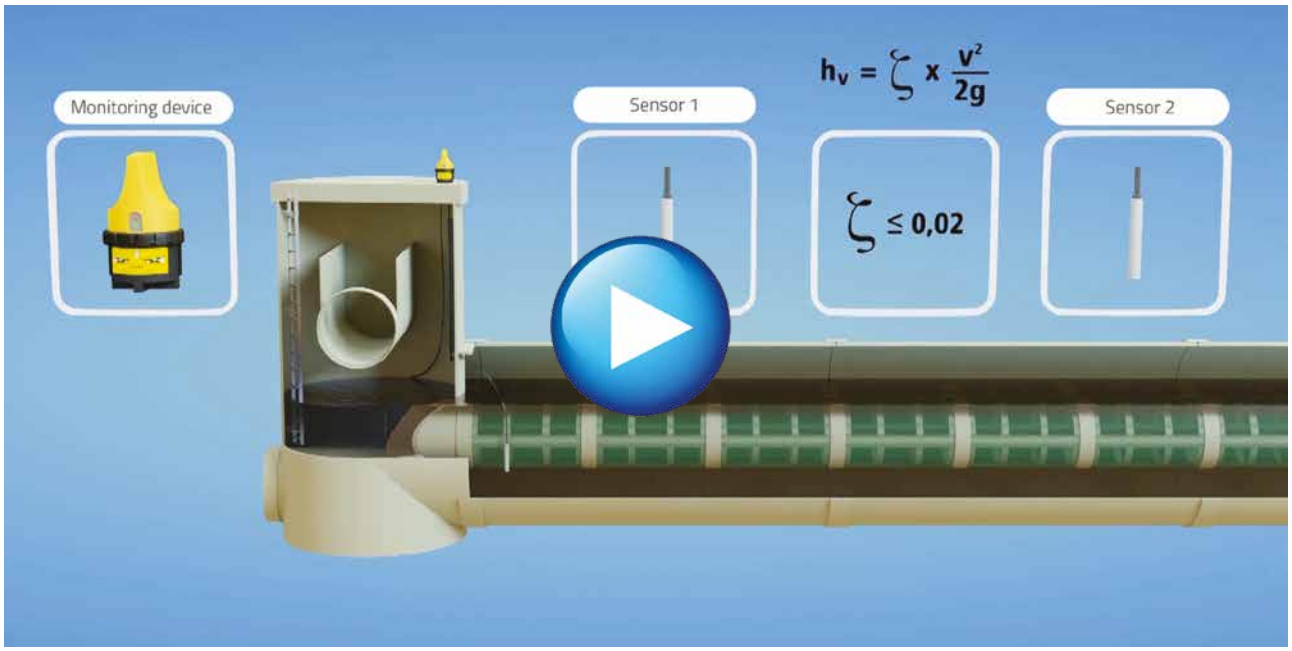
Two-line screening system, invert discharge



Four-line screening system, overhead discharge

Smart sensor system monitoring

To facilitate maintenance and ensure that the sewer network can operate smoothly, the Amiblu Amiscreen can be equipped with a smart sensor system. It consists of two sensor elements – one located in the overflow shaft, one in the storage sewer – and a monitoring device. When deposits start building up in the sewer system over time, the hydraulic performance decreases. The monitoring device keeps track of the water levels inside the storage sewer and the overflow shaft and sends the data to a central computer. When an inspection is needed, the computer sends an automatic notification to the responsible party.
Find out more about the function of the Amiscreen smart sensor system in our video:



Video: Function of the Amiblu Amiscreen Smart Sensor

bit.ly/Amiscreen-Smart-Sensor

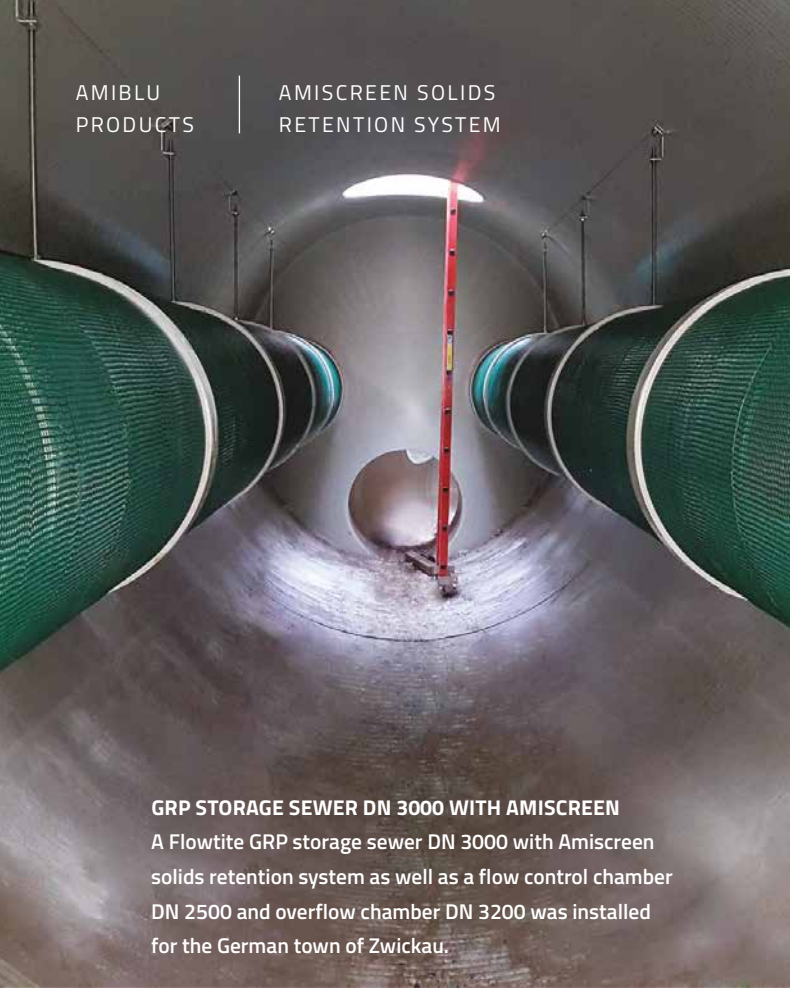
FOUR-LINE AMISCREEN INSTALLED IN THURINGIA
In the city of Geisa in the German state of Thuringia, a combined sewer system was upgraded with a 70 m³ Flowtite storage sewer DN 2800 with integrated Amiscreen. The system features four screening elements DN 600, resulting in a filter surface of 73 m².

Amiscreen project references

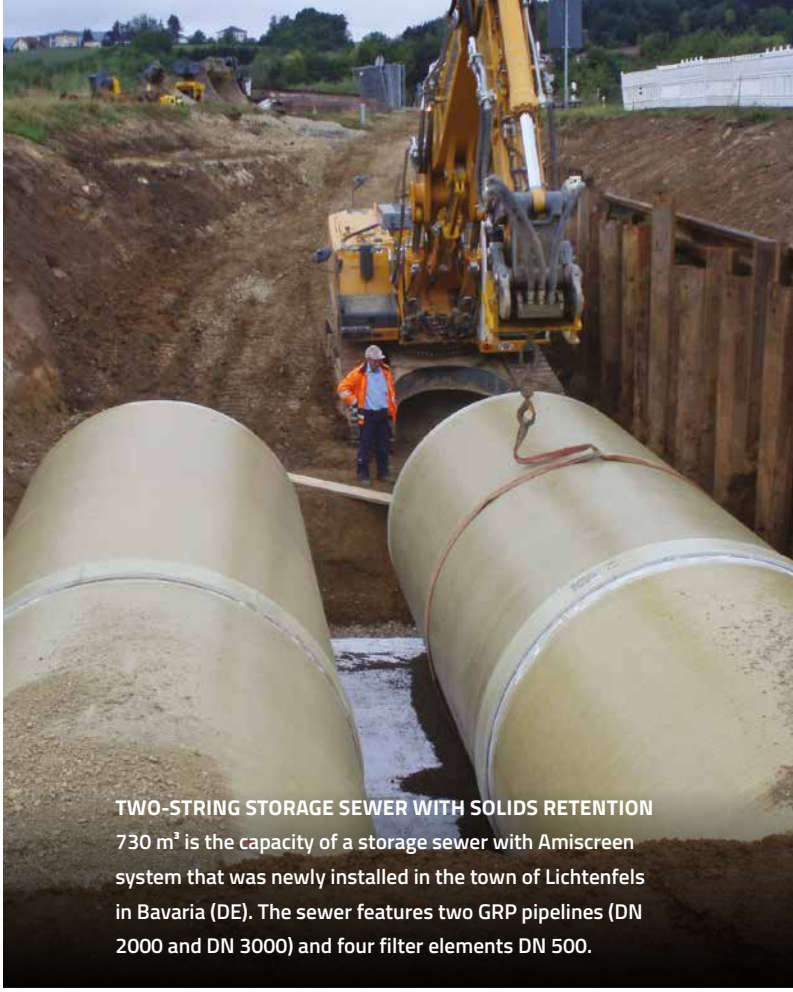
The Amibu Amiscreen solids retentions system has proven its worth in numerous projects and custom-tailored designs.

805 M³ STORAGE CHAMBER WITH AMISCREEN
In Weißenohe (DE), an aged rainwater storage basin was replaced by a new GRP storage chamber built of Flowtite pipes DN 3000 with integrated Amiscreen. The sustainable system was chosen due to the environmentally sensitive location.

AMISCREEN WITH 190 M³ FILTER SURFACE
In the German town of Geithain, 100 m Amiscreen elements DN 600 were installed to protect the surroundings of the stream Eula from dirt and pollutants. The screening surface of 190 m² is extremely effective.

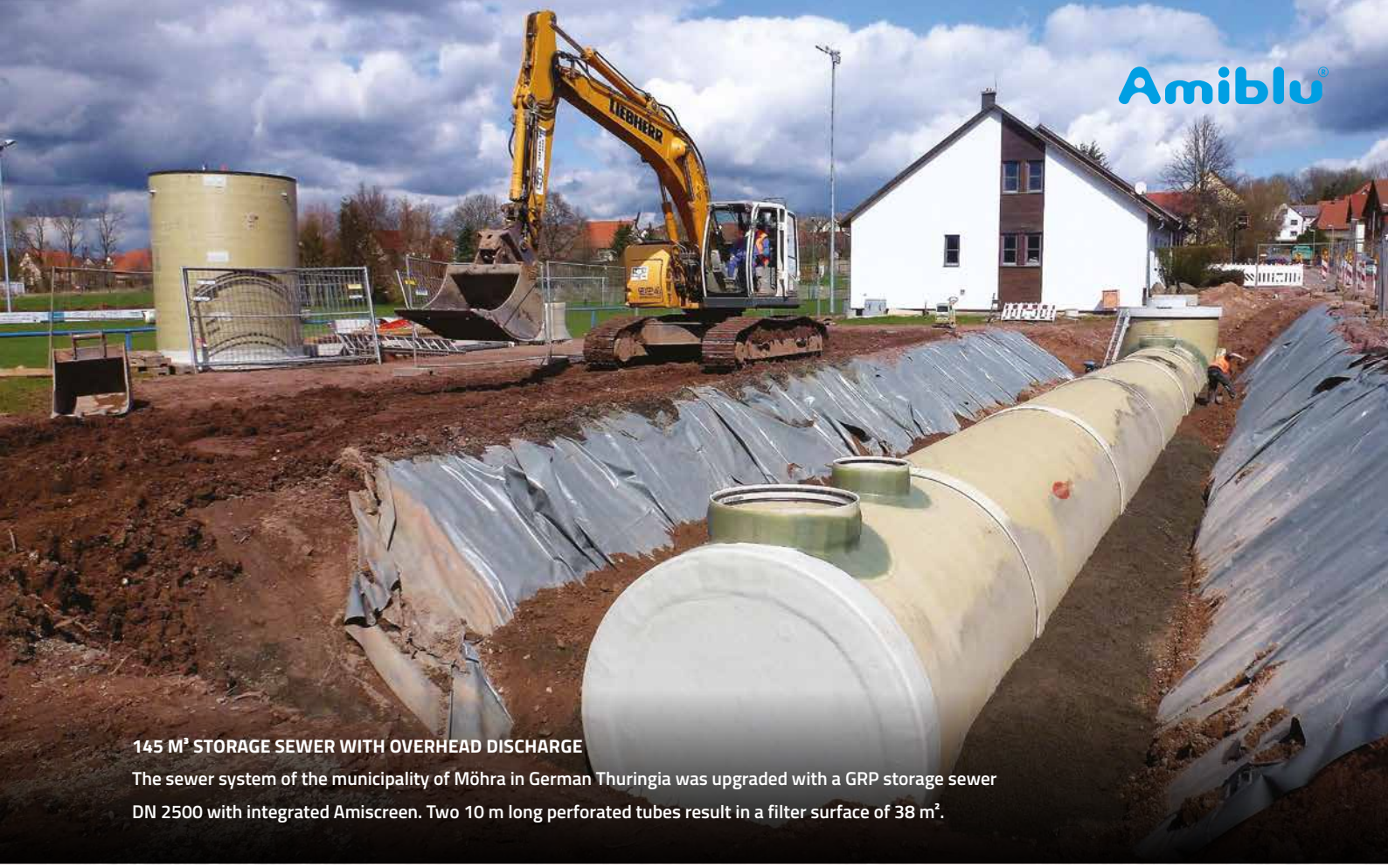


GRP STORAGE SEWER DN 3000 WITH AMISCREEN
A Flowtite GRP storage sewer DN 3000 with Amiscreen solids retention system as well as a flow control chamber DN 2500 and overflow chamber DN 3200 was installed for the German town of Zwickau.



TWO-STRING STORAGE SEWER WITH SOLIDS RETENTION
730 m³ is the capacity of a storage sewer with Amiscreen system that was newly installed in the town of Lichtenfels in Bavaria (DE). The sewer features two GRP pipelines (DN 2000 and DN 3000) and four filter elements DN 500.

STORAGE TANK WITH AMISCREEN FOR COMBINED SEWAGE
Amiblu supplied a 61 m long Flowtite storage tank DN 2200 with 200 m³ capacity for the German city of Straubing. The tank features a 56 m long Amiscreen solids retention system and a stormwater overflow shaft DN 3400.



145 M³ STORAGE SEWER WITH OVERHEAD DISCHARGE
The sewer system of the municipality of Möhra in German Thuringia was upgraded with a GRP storage sewer DN 2500 with integrated Amiscreen. Two 10 m long perforated tubes result in a filter surface of 38 m².

COMBINED SEWER IN SAARLAND UPGRADED WITH AMISCREEN
In the smallest German state, a GRP storage sewer DN 2400 with integrated Amiscreen solids retention system has been installed. The system includes an overflow shaft DN 3000 with cup inlet.

AMISCREEN STORAGE SEWER FOR WINTER SPORT RESORT
A 250 m³ GRP storage sewer DN 700 with two integrated screening elements DN 700 was installed in the German town of Winterland. The storage chamber allows for a discharge capacity of 679 l/sec.

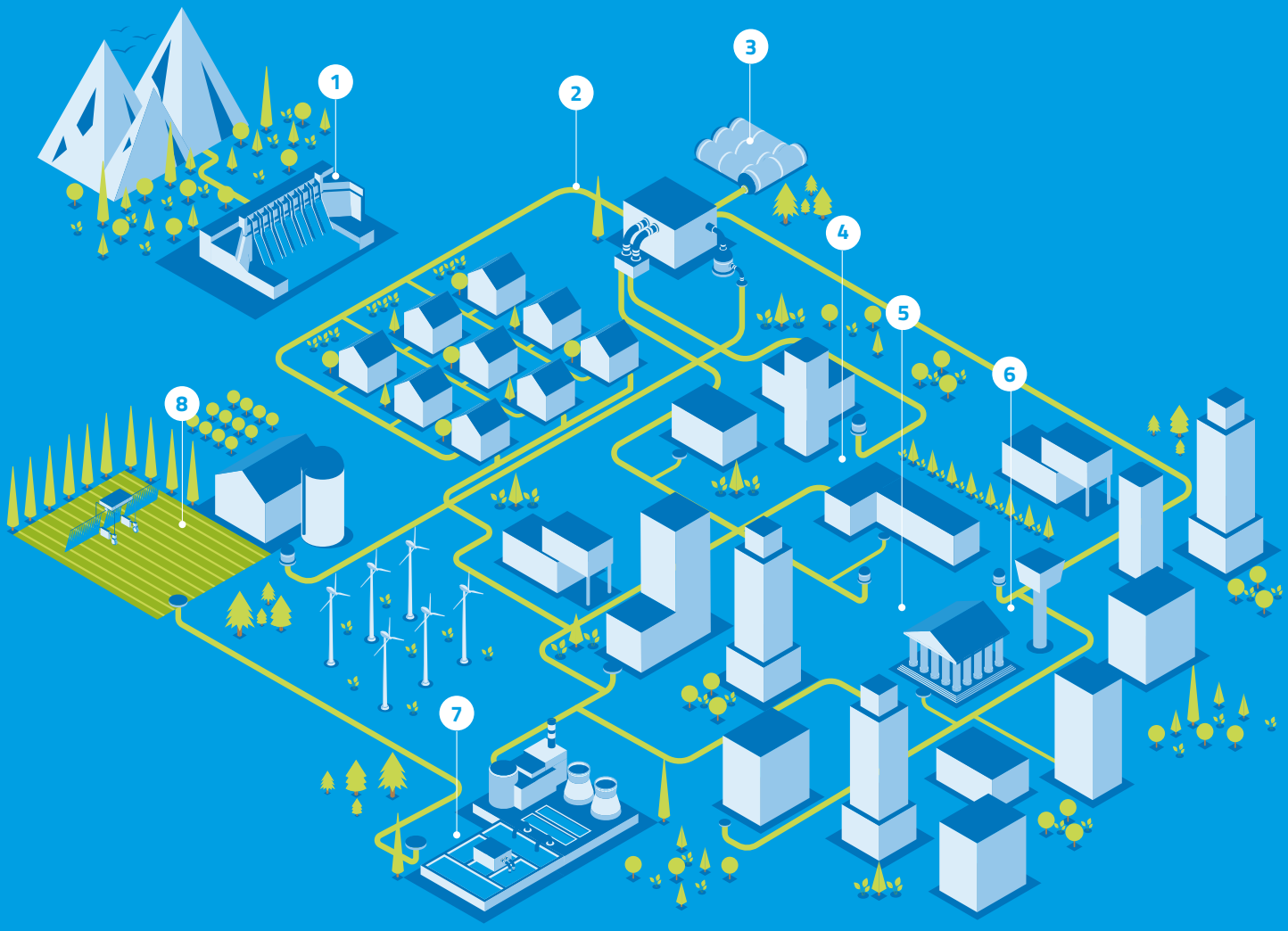
Let our team help your team!

On any project, you need to know that the people you work with are as committed to your success as you are. We believe in the long view and the longterm. So we partner with our customers from concept through to operation. We add value with innovative GRP solutions that outscore traditional alternatives on every parameter. We help you solve your problems and overcome your challenges to guarantee longterm, sustainable performance.

Amiblu®

Let’s value water as we should.

1. Hydropower
2. Potable Water
3. Storage Tanks
4. Sewage and Stormwater
5. NC Pipes Rehabilitation
6. Jacking Pipes
7. Industry
8. Irrigation



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