EZstorm™

Inspection and Maintenance Manual

Underground Retention/
Infiltration Structure

Inspection and Maintenance Manual

EZStorm is a solution for the retention or infiltration of underground rainwater. EZStorm offers a fully scalable system with a storage/infiltration volume that is perfectly optimized thanks to a 96% effective storage volume. This void ratio saves considerable space and excavation operations. Moreover, thanks to its unique design, EZStorm offers customizable installations with variable geometries, adapted to the specific needs of each project.

To ensure the proper functioning of the EZStorm Retention System, periodic inspections of the structure and its components are recommended. These inspections verify the condition of the structure and determine the frequency of maintenance which is adapted to the specific environment of the structure. This document provides general maintenance guidelines for the EZStorm system.

COMPONENTS OF THE EZSTORM SYSTEM

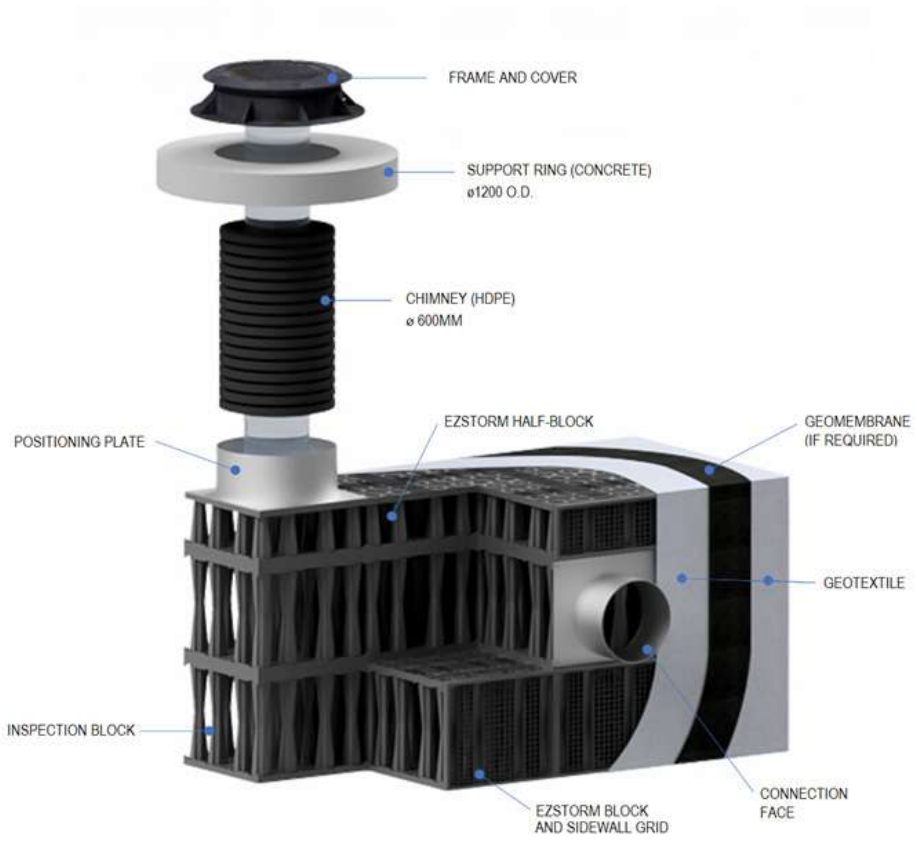

Figure 1. Components EZStorm

EZStorm boxes have a cross tunnel construction allowing camera inspection and hydro-curing in 2 directions and 4 dimensions.

The design, opening of the tunnel, and the rigid floor of the boxes facilitate the passage of the cameras. Moreover, the slim columns of the honeycomb structure offer a complete visibility of the whole system. As an option, a concrete connection and inspection chamber can be fully integrated into the system to guarantee access to the basin for inspection professionals and the connection of large diameter pipes.

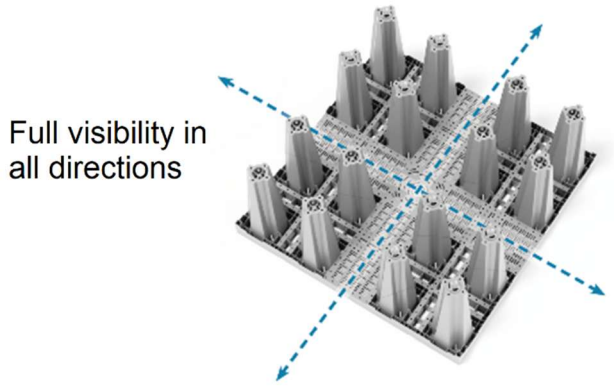

Figure 2. Cross inspection tunnel of the EZstorm element

BEFORE PUTTING IN SERVICE

During the construction phase, it must be ensured that no dirt or foreign particles enter the retention basin or the inspection stacks. To do this, it is important to take the necessary protective measures at access points and connections. It is also recommended that the first visual check be performed immediately after installation and before the system is put into operation.

INSPECTION PROGRAM

Inspection frequency

During the first year of service, it is recommended to perform at least two inspections and one after any major rain event. Thereafter, the frequency of inspection and maintenance can be adjusted based on the observations and information collected during the first year. However, a minimum of two visual inspections per year, one every 6 months, is recommended to monitor the accumulation of sediment and debris.

Parameters of inspection

- General condition of the structure, access and connection points (inlet and outlet)
- Presence of debris and sediment
- Backflow or other potential indication of malfunction

Once the inspection is completed, the results must be recorded in order to follow the behavior of the pond over time. A cleaning is required when a sediment accumulation of more than 6" is observed.

Inspection Method

EZStorm was designed to facilitate visual inspection with remote-controlled sewer cameras. A rotating and height-adjustable camera provides an optimal view of the side area, a controllable cage ensures centered positioning, and high-performance optics with illumination provide a brighter image.

The number of inspection boxes in an EZStorm basin varies depending on the size, configuration of the basin, the presence of other access points to the basin (adjacent pipes and manholes), and the use of a pretreatment row.

During inspection, access to the basin is through the EZStorm inspection stacks or through the pipes adjacent to the basin (minimum diameter 200 mm). Inside the boxes, the inspection is done by moving a remote camera through the cross-shaped inspection tunnels of the EZStorm boxes, specially adapted for this purpose.

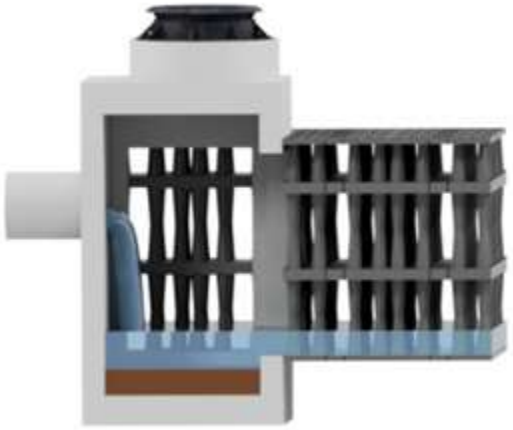

Figure 3. Concrete branch and inspection chamber (optional)

With the combined service chamber and inspection option, it is also possible to physically access the structure for a complete direct visual inspection on all levels of the basin.

MAINTENANCE AND CLEANING

When required, the tank can be flushed with a sewer cleaning system via the EZStorm cross tunnels. Cleaning is required when a sediment accumulation of more than 6" is observed. If the drainage system is equipped with a pre-treatment row, most of the sediment and debris will be retained in the pre-treatment row, limiting the area of the basin to be cleaned.

Figure 5. Pretreatment row

EZStorm can be cleaned with a rinsing pressure between 90 - 120 bar. It is recommended to use a 90° rotating nozzle with an additional rotation angle of 45°.

The flush water carries the sediment and debris to the inspection boxes or the outfall where it can be vacuumed away with a vacuum truck. Please note that materials such as sludge and sand as well as the rinse water extracted from the tank may contain hydrocarbons and heavy metals. These must be disposed of in accordance with local regulations.