

Sewer Flushing System HUBER Power Flush®



Automatic cleaning of sewers and prevention of sediments in sewer systems

- Cleaning of long sewers of up to several kilometres
- Elimination of odour annoyance
- Suitable for any sewer cross section
- Easy retrofitting without interruption of sewer operation
- No additional installation openings required

►► The situation

The main reasons for the ever increasing sedimentation at the bottom of sewer systems and stormwater retention sewers are an insufficient sewer base slope, regular retention combined with slow flushes and a low flow velocity. As a result, the sediments will harden over the course of time and frequently such hardened material layers can be 30 cm thick or even higher. The subsequent reduced sewer cross section impairs the system efficiency so that the solids will settle and the already sedimented solids no longer be remobilised and transported. Negative effects are the increase of stormwater overflow quality and quantity discharged into the receiving water courses, high peak loads arriving at the wastewater treatment plant due to suddenly breaking away sediments, odour annoyance and sewer damage caused by sulphur corrosion.

►► The solution

The innovative HUBER Power Flush® has been developed for operators of sewer systems and sewers with storage capacity and overflow. The patented sewer flushing system allows for complete removal of sediments in sewers and even prevention of potential future sedimentation. Activation of unused sewer capacity and easy retrofitting of the complete system without interruption of the sewer operation result in additional advantages.

Sewer cleaning is based upon the principle of sewer flushing enabled by built-in flap gates. The required flush water volume is generated by impounding the water against an invert step so that sedimentation in the upper retention area is prevented. Additional openings for installation or special manholes are not required.

The special gate design generates a self-cleaning action during the flushing process and prevents tressing at the gates. Sediments in the gate area that may be caused by the flushing medium or impoundage time are also removed due to the formation of a downsurge wave. The integrated custom-tailored system control enables a controlled and the maximum available cleaning efficiency of the sewer section to be achieved.

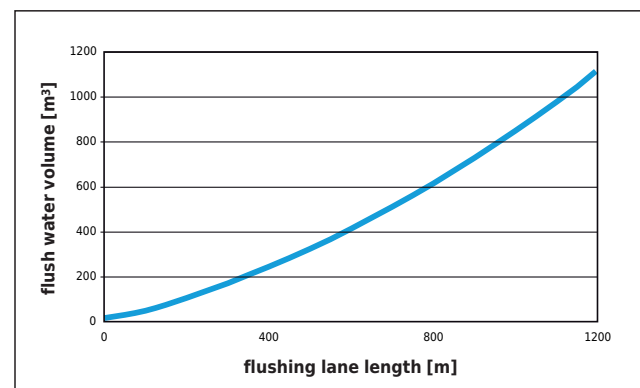
The flush water volume and impoundage level required are determined for the specific sewer length and diameter and additional project-specific parameters and taken into account in the further planning process.



Extensive hardened sediments on the sewer bottom

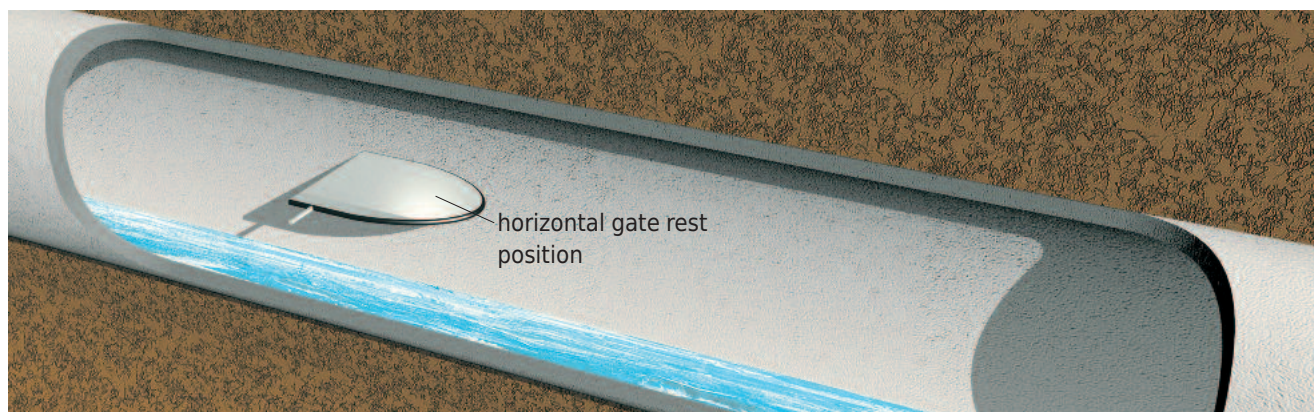


Head of a flush wave rushing through a sewer



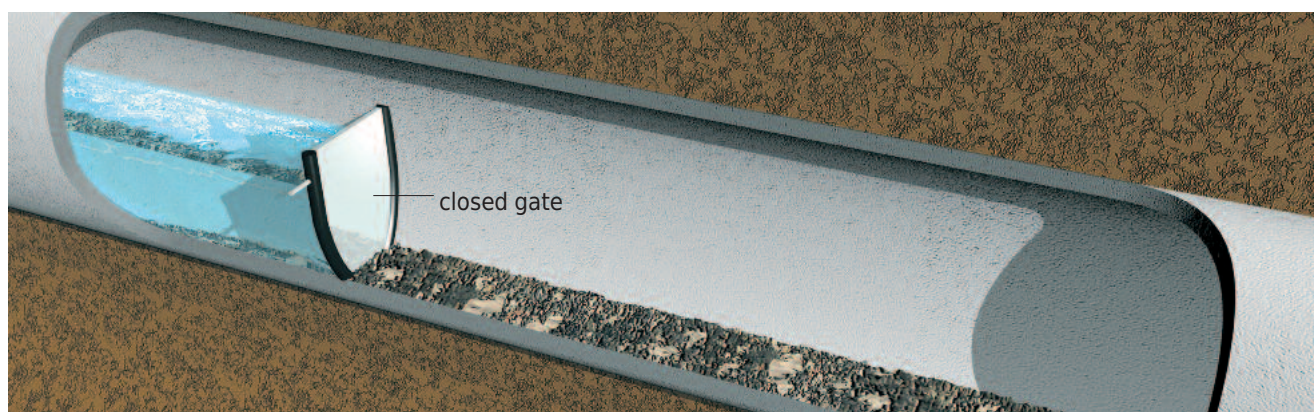
Example curve: flush water volume demand for base cleaning related to the flushing lane length for a DN 3000 sewer

➤ The function



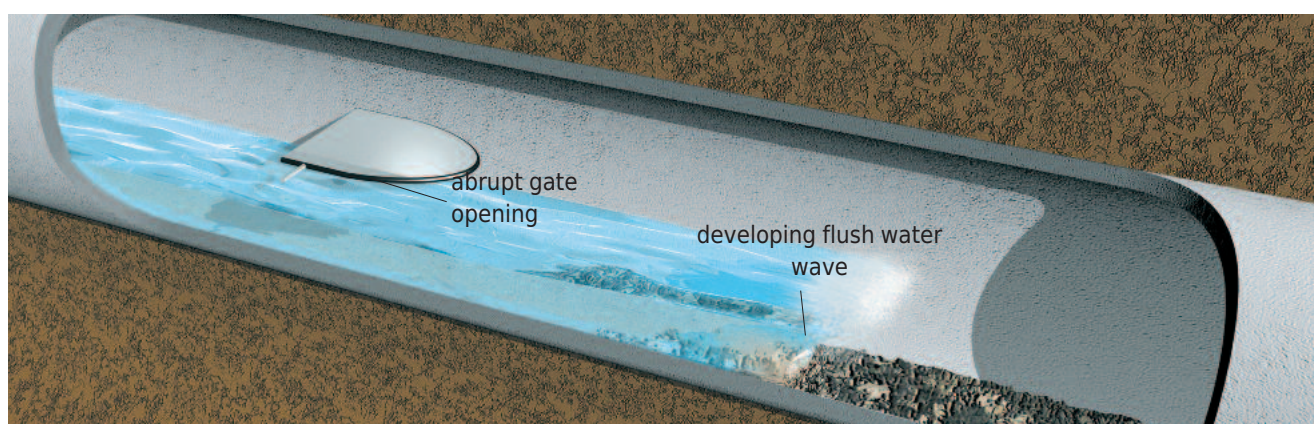
1. Rest phase

For sewer cleaning and removal of sediments the gate impounds the flush water against the invert step, or second gate, thus activating the flush water wave that remobilises and transports the settled material down the sewer. During the following rest phase the gate remains in a horizontal rest position to ensure that the total sewer cross section is available.



2. Flush water impoundage phase

After a storm event the water level in the sewer falls and the gate impounds the flush water against the invert step or a second gate until the required retained water level has been reached.



3. Gate opening phase

When the level of retained water exceeds the maximum permissible water level within the retention chamber, the gate quickly opens and frees the total sewer cross section. The generated long and powerful flush water wave has a cleaning efficiency of up to several kilometres. During the following rest phase the gate remains in a horizontal rest position until the next flush is activated.

►► The user's benefits

- Allows the cleaning of long sewers of up to several kilometres
- No blocking due to self-cleaning gates
- Possibility of submerging the gates
- Easy retrofit into current sewer operations
- Minimum energy demand
- Suitable for any sewer cross section
- No additional installation openings or special manholes required, even for the larger nominal diameters
- In conformity with ATEX
- Suitable for connection to any process control system

►► Installation examples



Flushing gate installed in a manhole, egg-shaped profile 1200/800



Closed flushing gate for a circular profile DN 2000

►► Planning information

The HUBER Power Flush® has been designed for removal and lasting prevention of sediments within sewer systems and sewers with storage capacity and overflow, with the option to activate unused sewer storage capacity. The layout of the entire flushing system is dependent upon the prevailing conditions within the sewer net and the sewer section to be cleaned. The HUBER Power Flush® is generally suitable for any sewers with an invert step at the inlet and an adequate retention capacity. If the retention capacity is limited, if any at all, the flush water

can be impounded against a second gate and then activates the required flush water volume to ensure full cleaning efficiency. Project-specific planning ensures the perfect control of the entire system.

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