

Discharging stormwater

Controlled discharge of stormwater

1

TRANSPORT

2

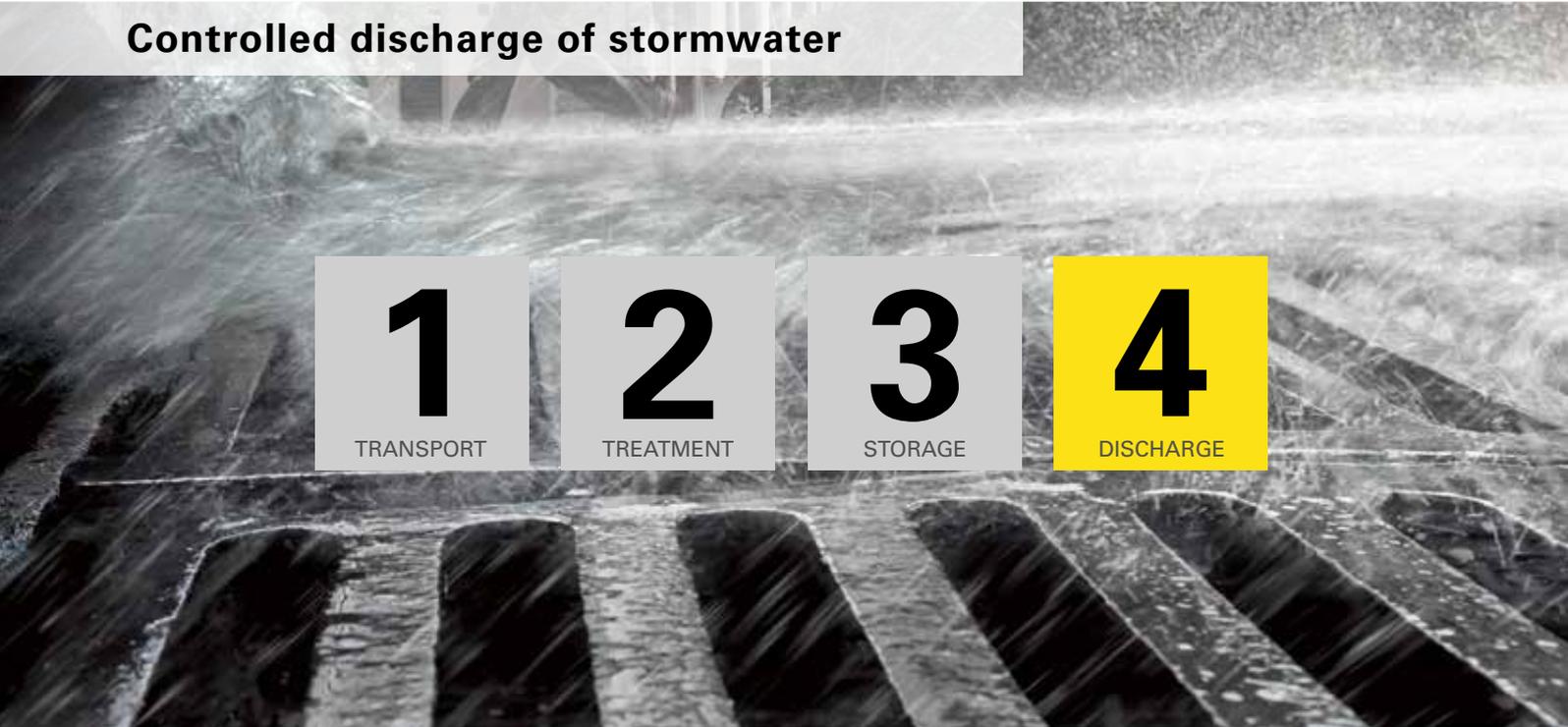
TREATMENT

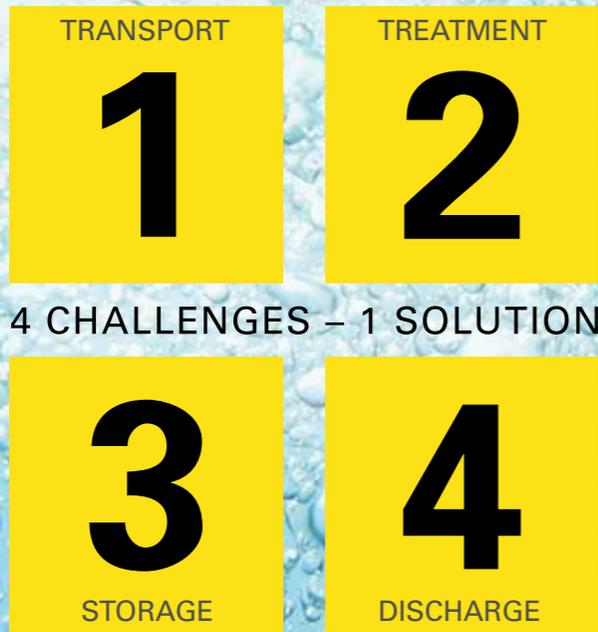
3

STORAGE

4

DISCHARGE





---

## Discharging stormwater

---

### **Controlled discharge of stormwater – long-lasting safety and reliability**

- **RigoLimit V** – vortex throttle shaft with exchangeable orifice
  - **QuadroLimit** – system shaft with cellular block type structure and project-specific vortex valve
  - **AquaLimit** – throttle shaft with project-specific vortex valve
-



### Reliable and controlled discharge of stormwater

Successful and sustainable stormwater management mainly depends on the controlled discharge of stormwater from different structures, e.g. infiltration swales, ground basins and other retention basins.

The objective is to return inflowing stormwater to nature later but continuously, and to avoid damage. Controlled discharge is often essential for flood control at streams and rivers and for flood protection of sewer networks.

Ready-to-connect shafts featuring vortex throttle technology are used depending on the protection requirements of the waterbody and the requirements regarding maintenance and operation.

Vortex throttle elements create a relatively constant discharge as compared to common orifices irrespective of the water level in the storage/infiltration system. The quite large outlet opening practically eliminates the risk of blockages and reduces discharge times.



**RigoLimit V** vortex throttle shaft with exchangeable orifice



horizontal vortex valve **QuadroLimit**



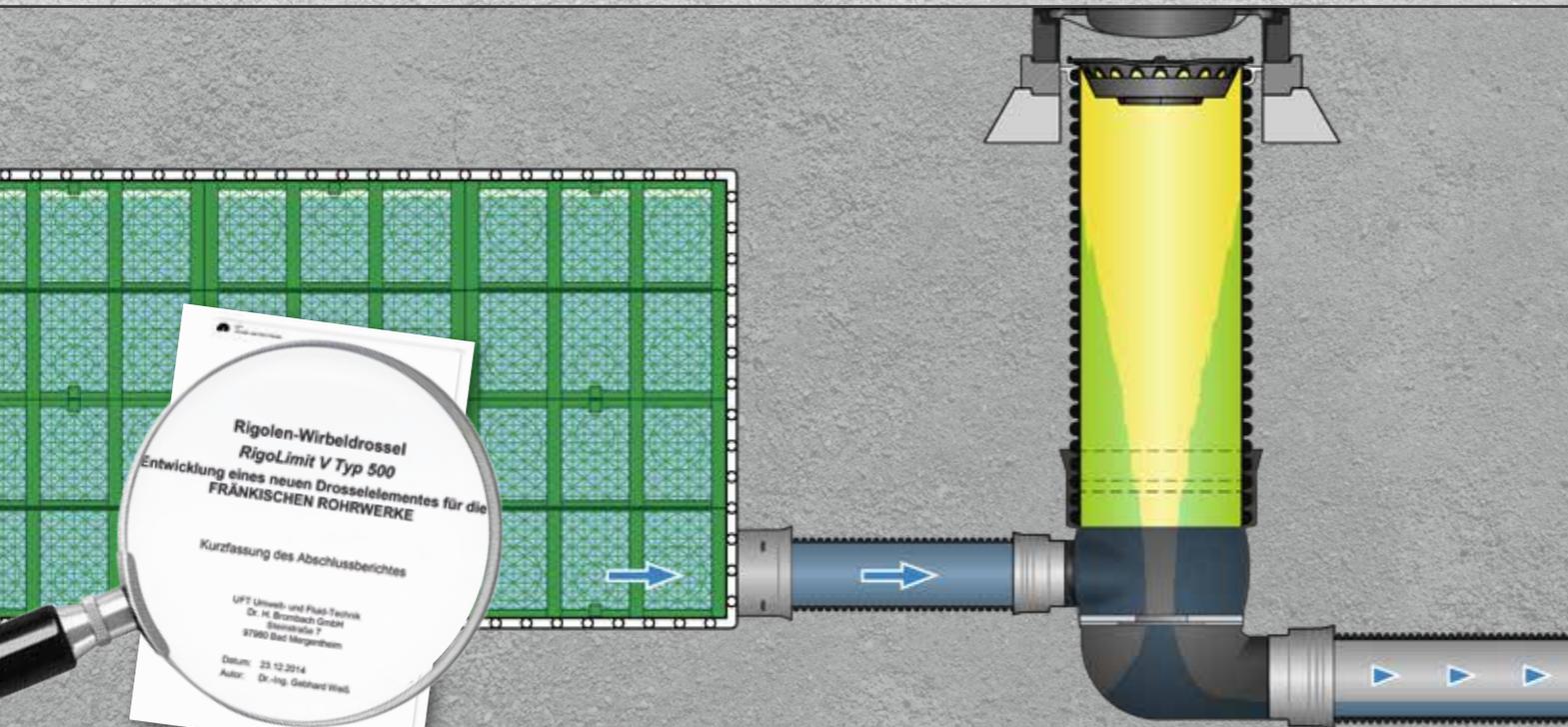
vertical vortex valve for **AquaLimit**

# WHERE DO YOU USE THROTTLED DISCHARGE?

Storage/infiltration system

Underdrained swale system

Ground basin



### With exchangeable orifice

RigoLimit V is so special because the shaft body itself is used as vortex throttle element. The tangential inflow of water into the shaft body generates a vortex which throttles the discharge in a self-regulating way by hydraulic resistance. The large cross-sectional opening of the orifice minimises the risk of blockages. The energy and cleaning effect of the vortex, too, prevents the outlet from being blocked. In case of small volumes of stormwater, the water can be discharged straight through the large orifice before the vortex forms. RigoLimit V therefore ensures high discharge performance across all operating states. The Rigo-Limit V throttle shaft is characterised by especially simple and flexible installation also in existing drainage systems. The shaft is lightweight and does not have any moveable parts. The product is particularly

reliable, wear-free and maintenance-friendly. If the discharge requirements change, for instance because the size of the collection area changes, the orifice can be exchanged without any problems and thus the discharge performance can be adjusted.

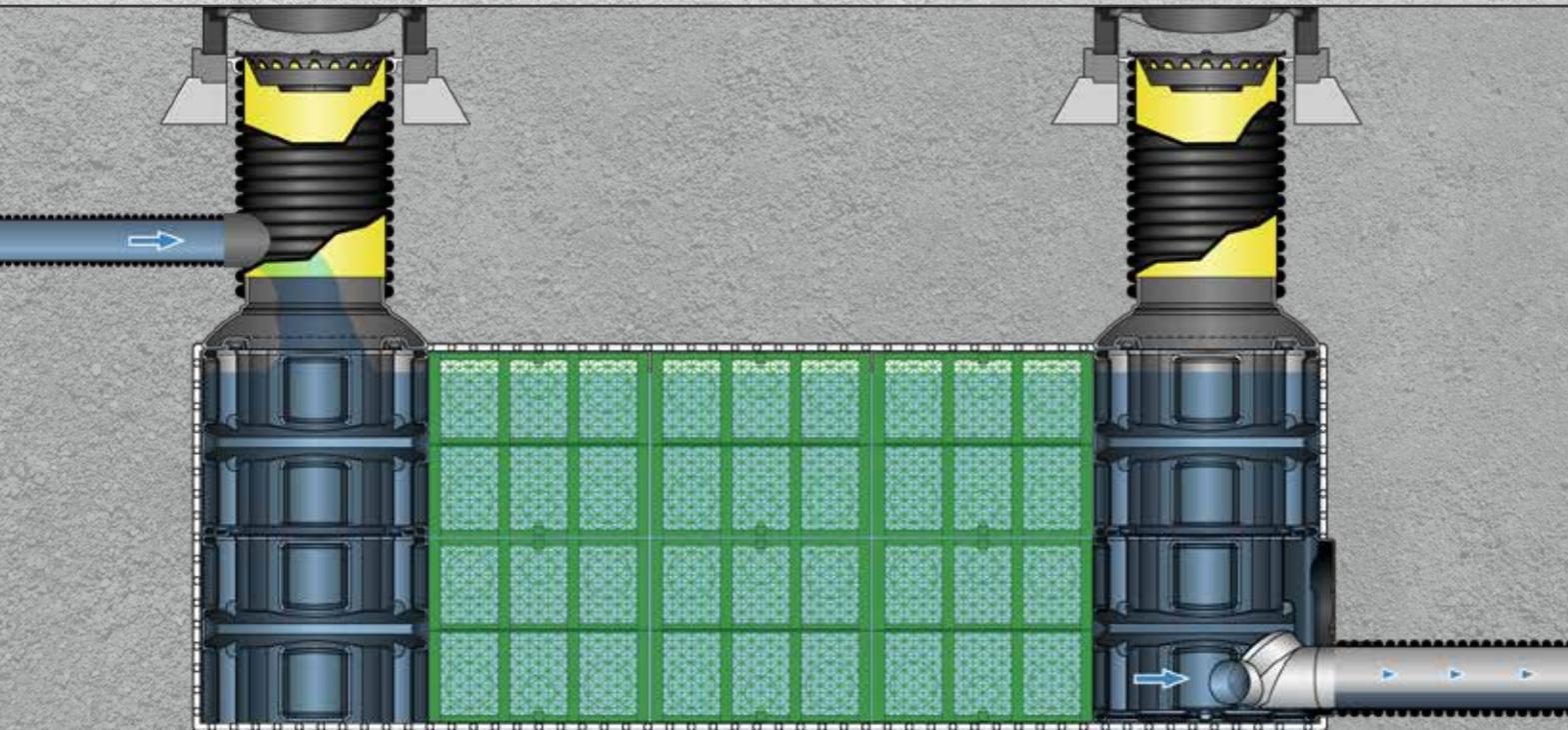
delivered ready-to-connect

solely hydraulically controlled

maintenance-friendly

very cost-efficient solution





### Shaft system with cellular block type structure and project-specific vortex valve

QuadroLimit combines the advantages of the QuadroControl system shaft integrated in the storage/infiltration module with innovative vortex valves manufactured by the market leader UFT.

The system design guarantees easy handling. The shaft is delivered to the construction site ready to be connected and with integrated throttle element. All you have to do is to install it into the excavation pit (no extra excavation required), incorporate it into the layout and connect it. The shaft's bottom-aligned installation allows installation without height loss. The throttle is pre-fabricated to the project needs and does not have to be adjusted on-site. This saves money and installation time.

#### Self-activating vortex valve principle

The vortex valve works according to a simple, all hydraulic operating principle; it is self-activating and does not require any external power supply. The water level in storage/infiltration systems changes depending on the time during or after rainfall from the filling phase to the discharge phase. The vortex valve adapts perfectly to each situation.

delivered ready-to-connect

solely hydraulically controlled

maintenance-friendly

high operational reliability



## AquaLimit – throttle shaft

### with project-specific vortex valve

**An alternative to concrete shafts**  
AquaLimit is a space-saving and maintenance-friendly alternative to common concrete shafts with separately installed vortex valve in particular in urban drainage, e.g. in residential estates or in trafficked areas.

**Reliable vortex valve technology**  
The UFT vortex valves used in AquaLimit are pressure cleaning resistant, robust and chemically resistant. They are self-activated through flow effects and controlled solely hydraulically so that they do not require any external energy supply. Maintenance is reduced to a minimum: The throttle is in the intended stainless steel channel. For maintenance or emergency

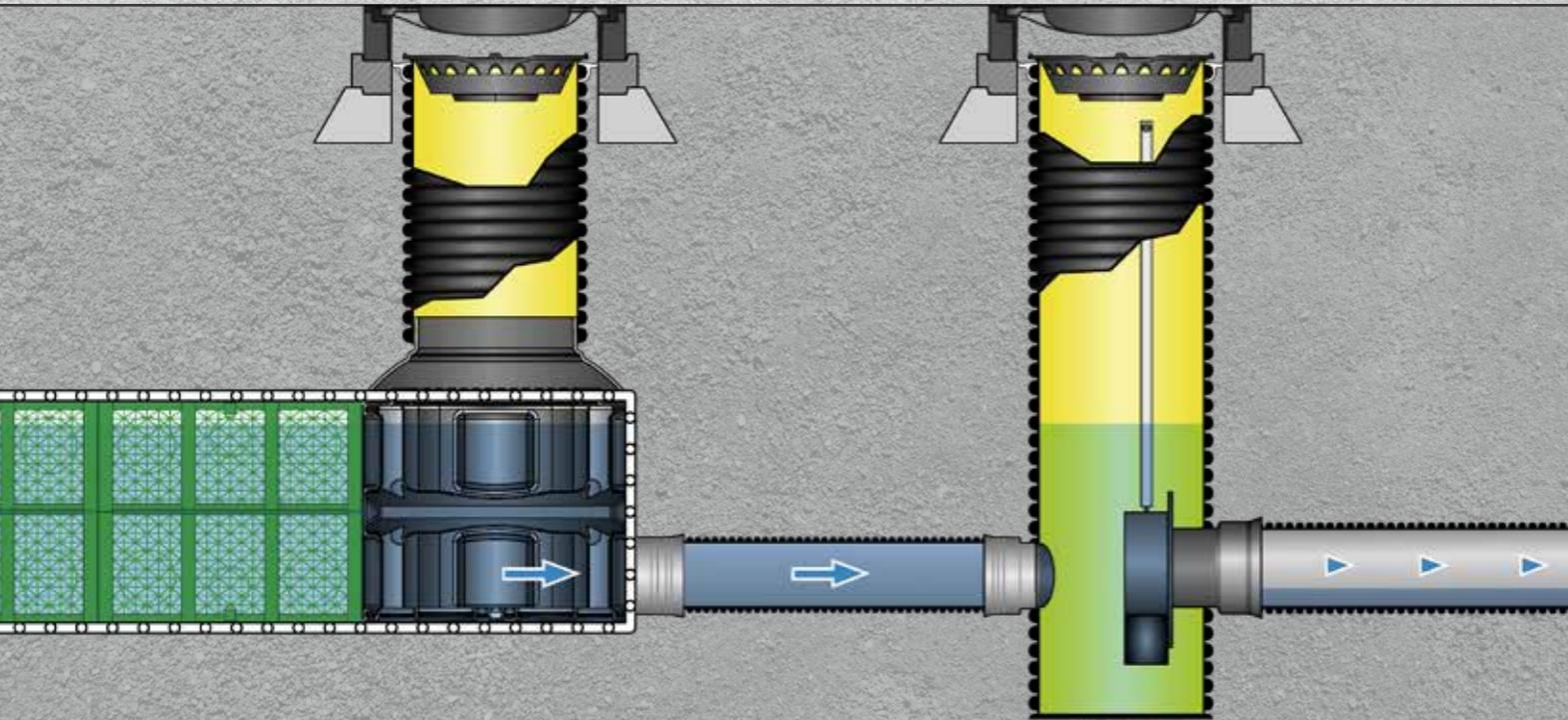
emptying of the system, it is removed from aboveground, cleaned and put back in place – without requiring access to the shaft. If the size of the storage/infiltration system or the storage basin and thus the amount of water being discharged changes, the throttle outlet can be subsequently adjusted.

delivered ready-to-connect

solely hydraulically controlled

maintenance-friendly

bottom-aligned installation possible



## Our services

Any task related to handling stormwater presents individual challenges. Framework conditions of individual projects vary significantly.

We have many years of practical experience with all aspects of design and construction of drainage systems.

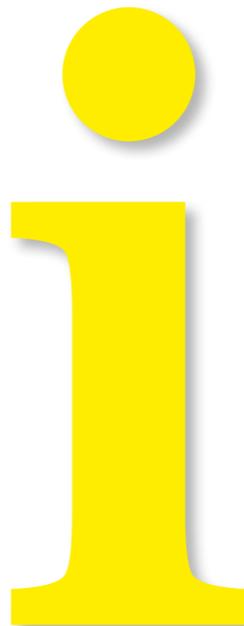
We provide local technical assistance during all project phases. We design complete systems, dimension the system components using state-of-the-art technology and help you realise your construction project.

In addition to construction companies and design engineers, our consulting services are particularly interesting for builders / project developers who want to sustainably protect their investment by economic and durable solutions.

Of course, we also provide you with:

- comprehensive information
- CAD templates
- tender documents
- installation and maintenance manuals
- structural analyses
- software
- project questionnaires
- local workshops and training programmes

[www.fraenkische.com](http://www.fraenkische.com)



## Documents and software

### Stormwater competence

In addition to basic knowledge and planning support for stormwater management, the manual also presents new and advanced products and systems. Anyone interested can get detailed information about diversity and details.

[www.fraenkische.com](http://www.fraenkische.com)



### Rigo®Plan professional dimensioning software

RigoPlan professional can be used to design different types of systems, such as infiltration systems, retention basins with overflow control and stormwater treatment systems.

[www.fraenkische.com](http://www.fraenkische.com)



#### Free download

##### Downloads

Select **competence:**

Stormwater management

and **document type:**

Product descriptions

#### Free download

##### Downloads

Select **competence:**

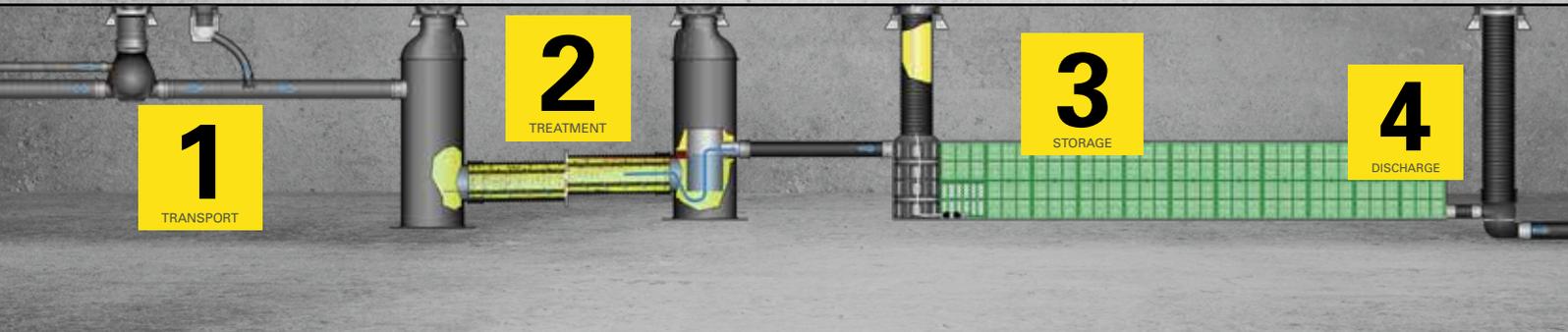
Stormwater management

and **document type:**

Software

Please register and download the software free of charge.

## Stormwater management



**FRÄNKISCHE ROHRWERKE** Gebr. Kirchner GmbH & Co. KG | 97486 Königsberg/Germany  
Phone +49 9525 88-0 | Fax +49 9525 88-2412 | [info.drain@fraenkische.de](mailto:info.drain@fraenkische.de) | [www.fraenkische.com](http://www.fraenkische.com)

E.1333/1.04.16.01 HM | Subject to change without notice | Cat. no. 599.99.663