

## Installation advice

# DRAINFIX CLEAN FSU (DIBt)

## Definitions

In rainwater treatment, a basic distinction is made between full-flow treatment and partial-flow treatment. These terms describe how the collected rainwater is directed through the filter channel and treated. Depending on the type of treatment, the corresponding end elements are installed either without overflow (full flow) or with overflow into a sump unit (partial flow).

### Full-flow treatment

Full-flow treatment means that the entire volume of water is fed through

the filter channel and treated there in its entirety. This process is used in particular when there are increased requirements for cleaning performance, such as when discharging into groundwater. In full-flow treatment, the water is drained directly from the pipe of the end element, usually without the use of a sump unit.

### Partial-flow treatment

Partial-flow treatment describes a process in which only a defined portion

of the rainwater is treated via the filter channel. The excess portion is diverted via an overflow device (here: overflow without filtration into a sump unit). This process is used, for example, for discharge into surface waters. In partial-flow treatment, the water is drained from the end element into the sump unit with overflow, also into the sump unit.

## General

Our installation advice and installation examples are generally valid suggestions and are based on many years of experience and extensive testing. We reserve the right to make changes in the course of technical progress and operational development. They do not release the planner from specifying the drainage system and the type of installation, taking into account the local conditions. The valid technical regulations and guidelines as well as the state of the art must be taken into account.

The installation advice also apply to the system components of the channels (e.g. sump units), unless explained separately.

The corresponding installation examples on the HAURATON website must be observed.

Further information on the processing of drainage systems can be found on the HAURATON YouTube channel.

## Installation

The sub-structure must be load-bearing, frost-proof and settlement-free in accordance with the planner's specifications.

The installation aids offered by HAURATON must be used to lift the channels. Alternatively, suitable harnesses can be used.

Lifting from the grating or the bolt connection points is not permitted.

Standard channel bodies are installed with drainage pipes to be inserted on site and a filter substrate specially developed for the system to be filled in afterwards.

The laying of the channels begins at the lowest point of the respective channel section or at the transition to the ground pipe (drain element or sump unit) and takes place in the opposite direction of flow.

The individual sections of a channel run can optionally be separated from each other with end caps, so that the sections can be seen from the outside even after filling with filter substrate.

The end caps and separation plates must be installed at the same time as the channel bodies.

The lateral stability of the channels is guaranteed and does not require any additional bracing when installed properly. When working on and compacting the superstructure, bracing (e.g. by inserting the gratings) may be necessary.

The channel runs must be provided with an outlet after 15 m.

For optimum filter utilisation, the filter channel is laid at a longitudinal gradient of 0%. Ideally, this will ensure that the precipitation is evenly distributed over the water level gradient. In the case of a longitudinal gradient, the water accumulates more at the lowest point of the channel. As a result, most of the fine particles are deposited at the lowest point. We recommend not exceeding a gradient of 3%.

The maximum distances of the separation plates must be observed:

0 to 0.5% fall: 20 m

Up to 1.5% fall: 10 m

Up to 3%: 5 m

### Installation of end elements for full-flow treatment

The end piece elements have an integrated side outlet with DN110 PVC-U

double sockets permanently moulded in at the factory. These outlets are manufactured individually at the factory. HAURATON must be notified in good time of the exact location and arrangement of the outlets (e.g. on the right or left in the direction of flow).

When inserting the PVC-U pipe bend into the double socket, ensure that the flow is not obstructed by drainage pipes that have been inserted too deeply.

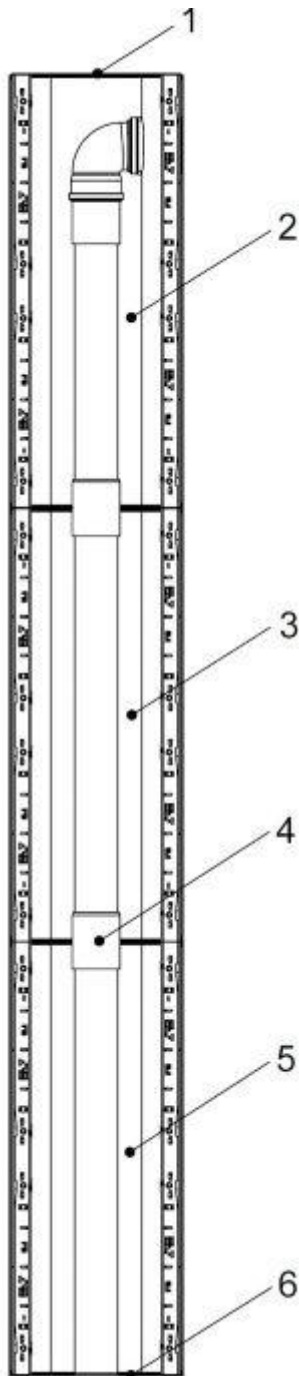


Fig.: Example of channel section arrangement for full-flow treatment

(1: stainless steel end cap; 2: end element with side outlet; 3: centre

element(s); 4: connector; 5: start element; 6: stainless steel end cap), top view

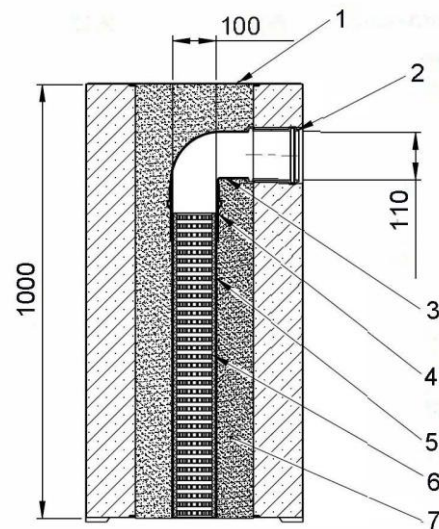


Fig.: End element (full-flow treatment) with outlet on the right in the

direction of flow (1: end cap; 2: double socket; 3: OD110 bend; 4: pipe section; 5: geotextile; 6: drainage pipe; 7: substrate); top view

When discharging into groundwater, care must be taken to ensure that all surface water is purified via the filter channel. The sump units serve as collection and control shafts and may only be fed via pipelines from the filter drains.

#### **Installation of end elements for partial-flow treatment:**

For the end elements for partial-flow treatment, the 87° PVC-U pipe bend for the overflow must be installed in the upper opening of the sump unit.

Fig.: End element partial-flow treatment, NW300 type 01H, longitudinal section

The pipe connector of the drainage pipe (channel types 01H) or the angle fitting

(other channel types) is inserted into the lower opening of the sump unit.

Fig.: End element partial-flow treatment, NW300 type 01, longitudinal section

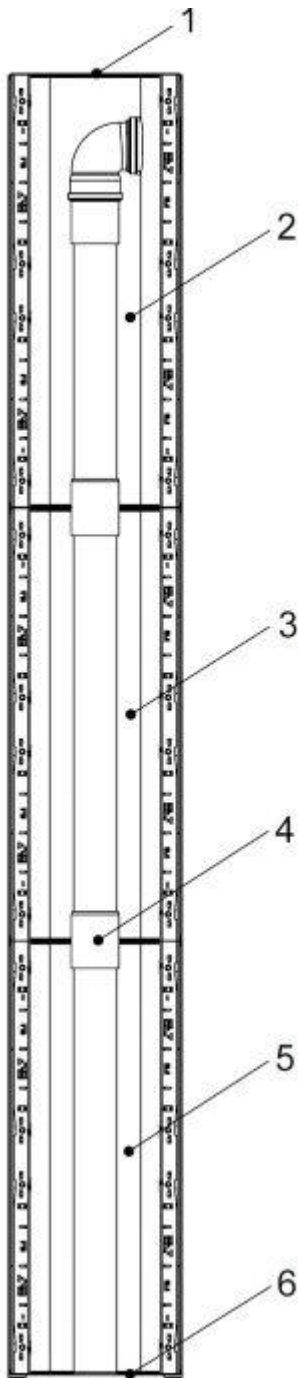


Fig.: Example of channel section arrangement for partial-flow treatment

(1: sump unit; 2: end element with outlet and overflow; 3: middle element(s); 4: connector; 5: start element; 6: stainless steel end cap), top view

#### **Installation of the drainage pipes:**

After installing the channel bodies, the remaining drainage pipes are laid

in the centre and freely on the channel base, starting with the end element. This is followed by the installation of the middle elements and finally the start element (secured drainage pipe). If necessary, the drainage pipes must be cut to the required length.



Fig.: Starting element, tied

#### **Filling with filter substrate:**

The substrate must be filled into the channel with drainage pipe without being compacted and levelled with a strickle or levelling device.



Fig.: Levelling device for peeling off the substrate (here with DRAINFIX CLEAN FSU)

The following quantities of substrate are required for an average effective filter thickness of 20 cm (15 cm above the top edge of the pipe):

DRAINFIX CLEAN FSU 300 type 01, 010 und 020: 59 l/m

DRAINFIX CLEAN FSU 300 type 01H: 44 l/m

DRAINFIX CLEAN FSU 400 type 01: 67 l/m

DRAINFIX CLEAN FSU 400 type 01H: 71 l/m

DRAINFIX CLEAN FSU 500 type 01: 86 l/m

A maximum settlement of the substrate of approx. 1.5 cm is to be expected.

Walking on the substrate or driving over the channel during the construction phase is not permitted.

It must be ensured that the subsequent surface coverings permanently overhang the upper edge of the channel as per the installation example.

The specified load class is only achieved after installation with inserted gratings has been completed.

Any dirt on site must be removed before installing the drainage pipes and

substrate. The substrate and drainage pipes must be protected from contamination.

## Joins

To compensate for horizontal forces (e.g. due to thermal expansion), sufficiently dimensioned expansion joints must be arranged in the longitudinal and transverse direction of the channels.

Joints running transversely to the channel run are to be led through a channel joint.

Joints running lengthwise to the channel run are to be arranged at a specified distance from the channel run as shown in the installation example.

Further joints, depending on the surface covering, are specified in the installation examples.

## Sealants and adhesives

The sealant and adhesive recommended by HAURATON with corresponding instructions can be found on the product page under accessories. The use of other brands is at your own risk.

## Locking options

The gratings are snapped into the edge frame by means of the SIDE-LOCK fastening. To do this, position them on the channel according to the markings on the grating (arrow) and edge frame (notch).

To remove the grating, it can be pried open with two slotted screwdrivers on the SIDE-LOCK springs.

When bolting on the gratings, the following maximum torques must not be exceeded:

FASERFIX SUPER steel edge frame with steel bolt: 100 Nm

FASERFIX SUPER steel edge frame with stainless steel bolt: 60 Nm

FASERFIX SUPER ductile iron edge frame: 60 Nm

The screw is to be applied manually, only then can it be tightened with a cordless screwdriver.

Note: Our information corresponds to our current knowledge and experience to the best of our knowledge. We reserve the right to make changes in the course of technical progress and further operational development. The user is not released from a careful examination of the functions or application possibilities of the products by qualified personnel. The mention of trade names is not a recommendation and does not exclude the use of other similarly tested products. Further information can be found in the respective safety data sheet, or in the areas of application, e.g. for elastic spray seals. In the case of new editions, older editions lose their validity.