

# STORM-X4

## STORM-X4 1000 Heavy Traffic

Art.-Nr. 1100120

### STORM-X4 1000 Heavy Traffic

Specialist rainwater filter for installation within standard manhole shafts, 1000mm diameter. Suitable for heavily contaminated waters from trafficked areas, i.e. over 5000 vehicles per day). Suitable for drained areas up to 500m².

The cleaned water has such an excellent water quality that it can be discharged directly into soakaways, surface waters and the wider environment.

The filter function is an up-flow process and this allows for a design with a minimal height difference between the inlet and outlet.

In the filter shaft the rainwater is cleaned by basic operation of the following processes: Sedimentation, Filtration, Chemical Separation and Oil Retention.

Incoming rainwater is led down to the basal section of the filter shaft. A hydrodynamic separator built in the base section promotes particulate sedimentation. The water is led into this separator tangentially and generates a radial flow pattern. Particles settle into the silt trap located below the separation chamber. Above the separation chamber are 4 filter elements, occupying the full shaft width such that all water must flow up through the filter. The Siltation of this filter is slow due to the upwards flow, and the fact that the filter is below the water level. The filter is easily exchanged. Under normal conditions the filter will last for 2 years, maintenance free.



### Function Principles:

1. The rainwater from the connected area is fed into the basal section of the filter housing. The angled inlet generates a radial flow pattern.

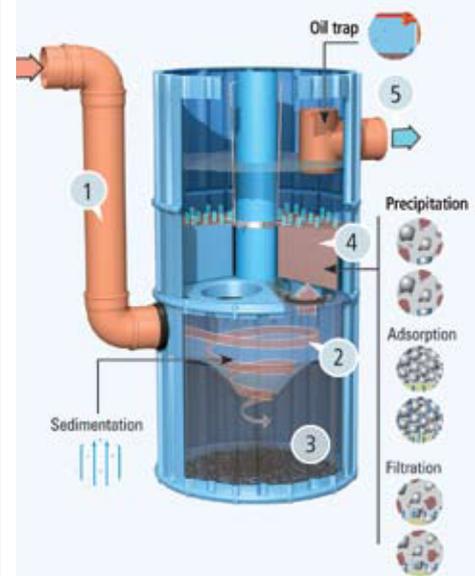
2. The hydrodynamic separator converts turbulent waters into a radial laminar flow pattern, generating particle sedimentation, particularly of the sand fraction.

3. This takes place over an inlet to the lower section of the filter shaft. The sediment is retained in a silt trap chamber below the separator. The silt trap needs to be emptied out at intervals.

4. In the central section of the filter housing is the actual filter, Filter Element: Heavy Traffic. The filter element filters out the fine materials in an up-flow process and dissolved materials are precipitated and adsorbed. The filter is backwashed from above. When exhausted the filter is easily exchanged.

5. The filter element is easily pulled up via the shaft opening.

6. Above the filter element is the clean water. It passes via an oil separator and then flows via the outlet into soakaways and so on.



### Installation Example 1:

Installed in a plastic shaft.



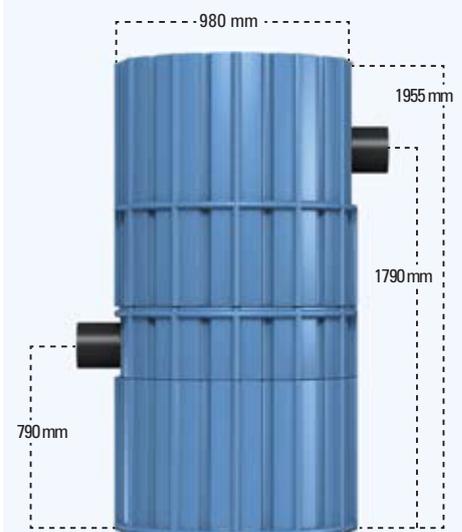
### Technical Data:

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Rainwater filter complying with DIN 1989-2, Type A  
For drained traffic areas to 500m².  
Connections: at DN150 or DN200.

4 Filter Elements:  
Material: Filter Substrate: Heavy Traffic  
Weight per element: 16 kg.

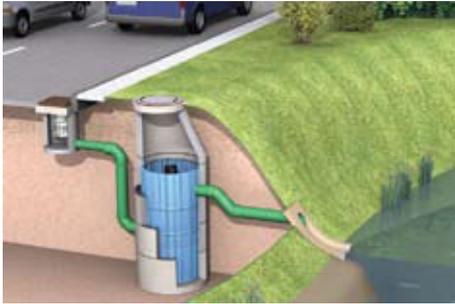
Housing:  
Material: Polyethylene.  
Housing: 58 kg.

Total weight: 122 kg



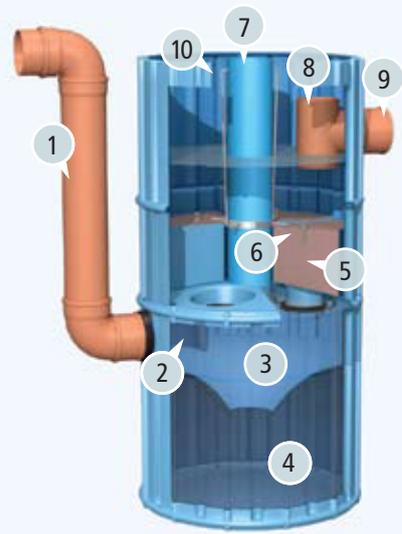
### Installation Example 2:

A schematic of the STORM-X4 1000 Heavy Traffic installed in a concrete shaft at 1000mm. The surface trafficked area water can even be safely discharged to surface water bodies after STORM-X4 treatment.



### Product Components:

1. Rainwater Inlet (DN 150/ DN 200).
2. Angled Inlet.
3. Separator Chamber.
4. Silt Trap to retain sediment.
5. Filter Elements (4 No.).
6. Removal Device for Filter Element.
7. Overflow Pipe and Cleaning Shaft.
8. Oil Separator.
9. Outlet to storage or to waste.



### Specifications Text:

Number	Quantity	Description	Price in €
1.1	---	Delivery and Installation of a STORM-X4 1000 Heavy Traffic.	_____

Delivery and installation of the following shaft specification for treatment of heavily contaminated drainage water collected from surface traffic areas:

Installation excavation to be prepared in accordance with relevant specifications and local regulations.

Install Shaft or manholes in accordance with manufacturer's specifications and complying with all National Regulations. For difficult ground conditions consult an expert Engineer. Ensure particular attention is paid to the shaft lid and seal all gaps expertly.

Delivery and Installation of Shaft chamber sections will need to adjust and take account of any height differences to surrounding area if and as required.

Rainwater inlet DN--- connect on shaft with care and make watertight.

Rainwater outlet DN--- connect on shaft with care and make watertight.

Plant type STORM-X4 1000 Heavy Traffic. Connected area:500m<sup>2</sup>

Module comprises ready to install PE shaft in concrete surround with hydrodynamic separator, silt trap chamber, Filter Unit to clean water from heavy traffic areas.

Shaft dimensions:

Upper section diameter 1000mm down to 625mm at surface, height between 300 and 600mm.

Central section at 1000mm, height 1000mm with outlet point at DN\_\_\_.

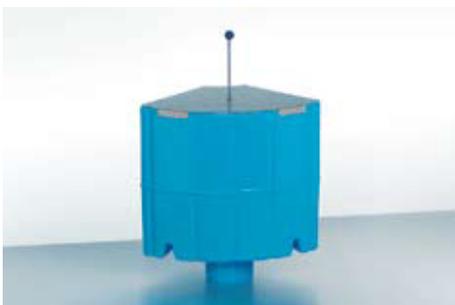
Lower central section at 1000mm diameter and height to 500mm, with inlet port at DN\_\_\_.

Basal section at 1000mm diameter, height to 550mm.

PE Shaft housing with hydrodynamic separator and removal handle for Filter Elements (4 No), diameter =980mm, height =2000mm.

### Filter Element Heavy Traffic:

Every STORM-X4 1000 Heavy Traffic is supplied with 4 filter elements installed.



Parameter	Unit	Main road distributor		Aims of LAWA <sup>1</sup>	Drinking water <sup>2</sup>	Seepage <sup>3</sup>	Hydro-System <sup>5</sup>
		from	to	Permissible limit	Permissible limit	Control value	Aim
Physico-chemical parameters							
El. cond.	[µS/cm]	110	2400	-	2500	-	< 1500
pH	[-]	6,4	7,9	-	6,5 - 9,5	-	7,0 - 9,5
Nutrients							
P <sub>tot</sub>	[mg/L]	0,23	0,34	-	-	-	0,10
NH <sub>4</sub>	[mg/L]	0,5	2,3	-	0,5	-	0,3
NO <sub>3</sub>	[mg/L]	0,0	16,0	-	50,0	-	-
Heavy metals							
Cd	[µg/L]	0,3	13,0	1,0	5,0	5,0	< 1,0
Zn	[µg/L]	120	2.000	500	-	500	< 500
Cu	[µg/L]	97	104	20	2000	50	< 50 <sup>4</sup>
Pb	[µg/L]	11	525	50	10	25	< 25 <sup>4</sup>
Ni	[µg/L]	4	70	50	20	50	< 20
Cr	[µg/L]	6	50	50	50	50	< 20
Organic substances							
PAH (EPA)	[µg/L]	0,2	17,1	-	0,1 (6 Subst.)	0,2	< 0,2
MOTH	[mg/L]	0,1	6,5	-	-	0,2	< 0,2

critical parameter, treatment necessary  
treatment may be necessary, not generally  
no critical parameter

<sup>1</sup> Aims of the German Working Group on water issues of the Federal States and the Federal Government (LAWA) for Surface Usage as potable water

<sup>2</sup> Permissible limit of the German Drinking Water Ordinance (2001)

<sup>3</sup> Control value for seepage of the German Federal Soil Protection Act an Ordinance (1999) according to §8 1,2

<sup>4</sup> for copper- and lead-roofs a second treatment step is necessary

<sup>5</sup> the aims of the system refer to average annual loads

### Observations:

### Packaging Information:

1 unit per pallet.

EAN: