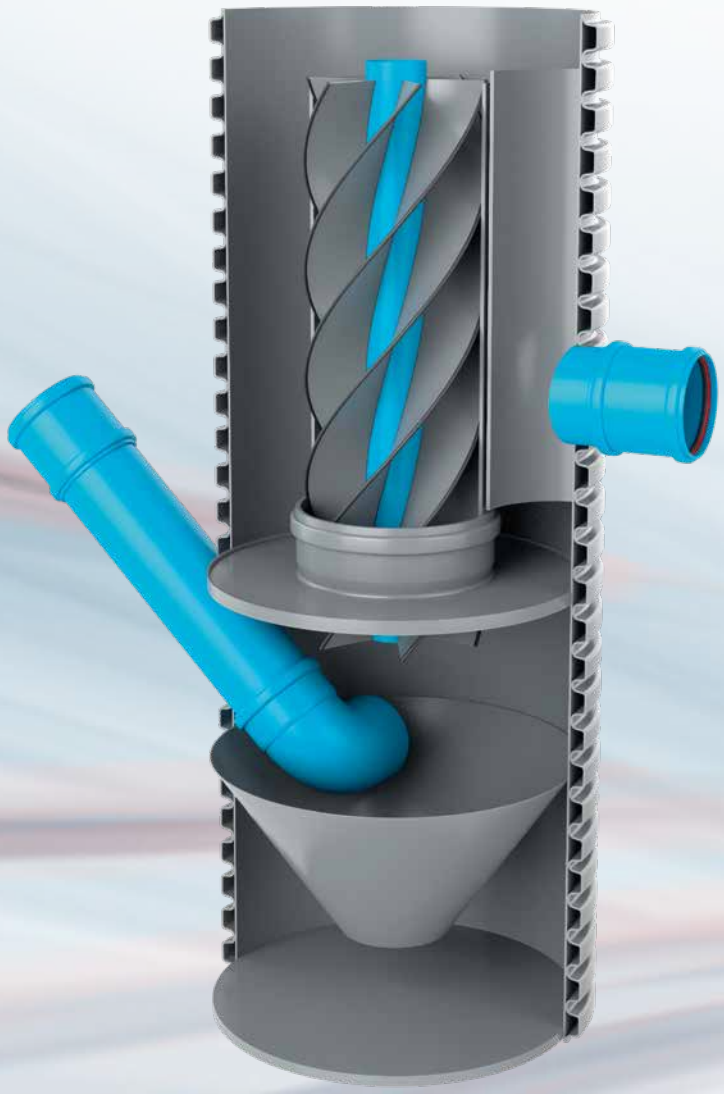
Funke Gruppe

Funke
Sedimentation Chamber



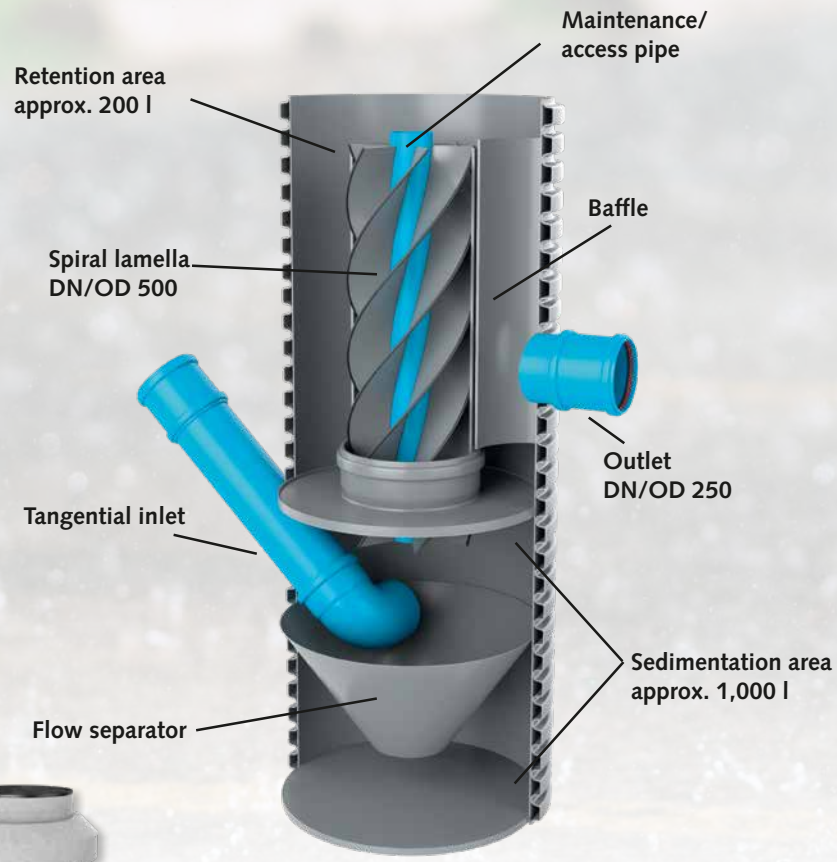
New!

decentralised – effective – sustainable

Funke Schacht®

Funke Sedimentation Chamber

Effective retention of settling, suspen



The chamber

Depending on the location and other boundary conditions, rainwater runoff from traffic and roof areas contains settling, suspended and floating matter. By using the Funke Sedimentation Chamber, a large part of the so-called filterable substances (FAS) can be retained. The efficiency depends on the size of the connected surface area and is, for example, approx. 70 % at A = 3,000 m² – this is the result of the tests with the test substance Milisil W4 carried out in accordance with the approval principles of the German Institute for Building Technology (DIBt). The precipitation water that has passed through the Sedimentation Chamber can be discharged into a surface water body (discharge of area categories I and II according to the German standard "Gelbdruck" (Draft) DWA-A 102).

Monolithically manufactured

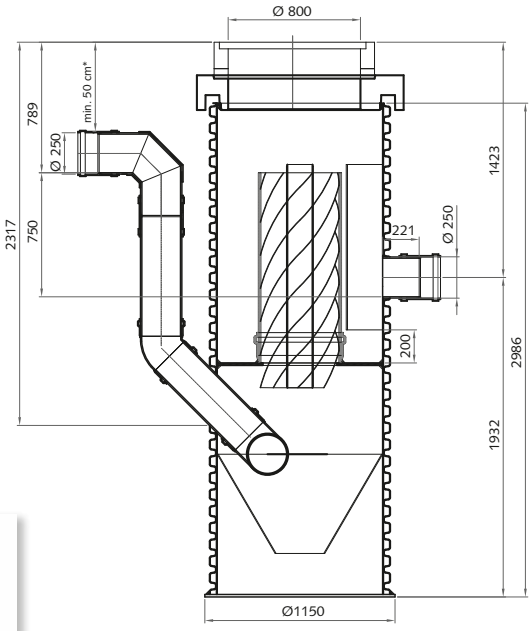
The Funke Sedimentation Chamber is monolithically manufactured from a Funke DN 1000 Profile Pipe. The main components include the tangential inlet, a spiral lamella integrated vertically in the chamber body, a flow separator and a baffle mounted in front of the outlet.

The Funke Sedimentation Chamber is suitable for a connection area of up to 3,000 m². The structure has a total height of approx. 3.20 m including cover plate. The height offset between inlet and outlet is approx. 0.8 m, the outlet depth is approx. 1.50 m.

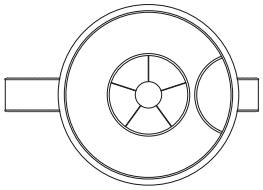
Low maintenance requirements

The maintenance effort for the Sedimentation Chamber is low: depending on the degree of contamination, the sludge trap is vacuumed once a year.

ded and floating particles



*other heights are possible for larger coverages



Schematic representation of the Sedimentation Chamber (side view, top view) All data in [mm].

Test report BÖL-Bodenökologisches Labor Bremen GmbH

How it works

The rainwater flows via the lateral inlet into the Sedimentation Chamber. In particular, the flow velocity occurring with larger water loads causes the incoming water to rotate, during which the sediments slowly settle and are guided to the bottom of the chamber by the conical flow separator.

The hydrostatic pressure is responsible for the rainwater being led upwards through the spiral lamella inside the Sedimentation Chamber. The spiral lamella ensures that the path of the particles contained in the rainwater is extended many times over and that the drop height onto a lamella surface is minimised. This contributes to the fact that a large part of the particles contained in the rainwater remain behind and settle downwards through the spiral lamella before the water load reaches the upper chamber body.

In the upper body of the chamber, a baffle installed in front of the outlet ensures that the floating and suspended matter still contained in the precipitation water is retained before the treated water is successively led out of the chamber body to the outside.

For a clean handling of precipitation water

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (WFD) was adopted in 2000. A declared objective of the WFD is to achieve or maintain a "good status" of all surface water bodies. A considerable proportion of the (pollutant) substances discharged into water bodies originate from runoff caused by precipitation. Therefore, the treatment of precipitation runoff from paved areas prior to discharge into surface water is of great importance. DWA worksheet A 102, currently available in the german standard "Gelbdruck" (Draft), defines the filterable substances (particle size FAS 63) as reference parameters. These can be removed from the precipitation runoff by optimized or improved sedimentation.

In this context, network operators are increasingly using decentralised or semi-centralised solutions to remove fine particles with adhering pollutants (FAS) from the rainwater that reaches surface waters from roof areas, highway and car parks, in addition to systems for the centralised treatment of rainwater such as rainwater clarifiers, soil filters and overflows. Depending on the location, surface treatment and receiving waters, different degrees or qualities of treatment are required.

For example, the test values of the Federal Soil Protection and Contaminated Sites Ordinance (Bundes-Bodenschutz- und Altlastenverordnung, BBodSchV) must be observed before discharges into groundwater (infiltration). For this reason, the use of systems with a corresponding DIBt approval is recommended. For discharges into surface waters, on the other hand, systems with lower efficiencies may be used in addition to DIBt approved systems. The effectiveness of a plant can currently be described with the permeability level "D" according to DWA-M 153 (qualitative statement). The smaller the value, the higher the expected degree of treatment. Against this background, Funke Kunststoffe GmbH offers users various types of filter systems, which are listed in the following table. In England (UK), the quality of treatment is carried out according to CIRIA document C753 (see table below, last line "Mitigation Indices")

Overview of Funke systems for rainwater

System	INNOLET®	INNOLET®-G	Sedimentation Chamber	Sedimentation Unit	Funke Filtration Chamber	D-Rainclean® Bio-remediation Channel	Re-Medi8 Bio-remediation Soil
							
Area of application	Road Gully	Road Gully	Chamber System	horizontal Sedimentation Unit	Chamber System	Filter Channel	Infiltration basin/ Rain gardens
Catchment area	250/400 m²	250/400 m²	1,000 – 3,000 m²	1,000 – 5,000 m²	600 m²	up to 20 m² per m	–
Infiltration into the ground water	–	–	(✓)*	–	✓	✓	✓
Discharge into surface water body	✓	✓	✓	✓	✓	✓	✓
Durchgangswert (permeability level) according to DWA-M 153	0.5	0.4	0.3 – 0.4	0.3 – 0.4	0.15	0.15	0.15
Mitigation Indices							
• TSS	0.55a	0.65a	0.7	0.7	0.8	0.8	0.8
• Metals	0.55b	0.65b	–	–	0.8	0.8	0.8
• Hydrocarbons	0.55b	0.65b	–	–	0.8	0.8	0.8

**Permissible for surface water that is not in need of treatment e.g. roof areas, without heavy metal abundance*

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