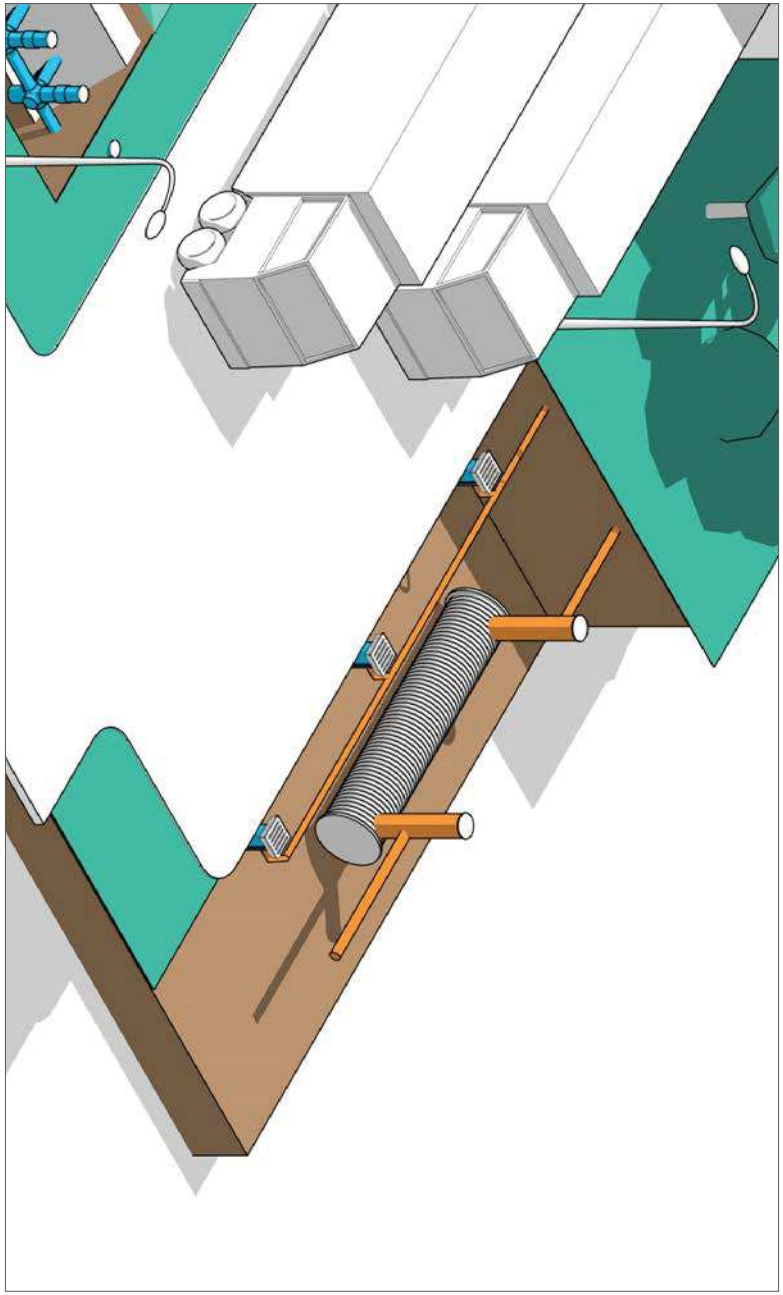
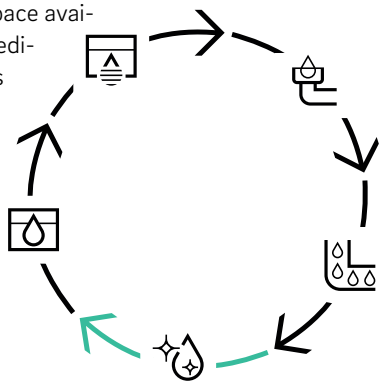
05 RAUSIKKO SediClean

For mechanical rainwater pre-treatment



When planning and installing percolation systems, effective rainwater pre-treatment, even beyond natural cleaning mechanisms like soil passages, is becoming increasingly important.

This gives rise to an apparent conflict between the need for effective cleaning and the space available for it. Particulate dirt constitutes a major share of contamination, but RAUSIKKO Sedi-Clean systems remove this dirt effectively and take up just a small amount of space. This has been overwhelmingly confirmed in tests carried out by independent testing institutes.



High standard of safety and quality

- Tested by independent testing institutes
- Proof of treatment in accordance with data sheet DWA-M 153
- Effective removal of particulates and bonded contaminants
- High retention volume for light-weight liquids in the event of a fault (e.g. accident with fuel discharge)

Flexible and versatile use

- Easy to adjust the system to the dimensions of the connected surface
- Universal inlet and outlet, each rotatable by 360°

Lasting system functionality

- Robust design in polyolefin materials
- Excellent system accessibility for inspection and maintenance purposes
- Easy to clean the systems using conventional technology

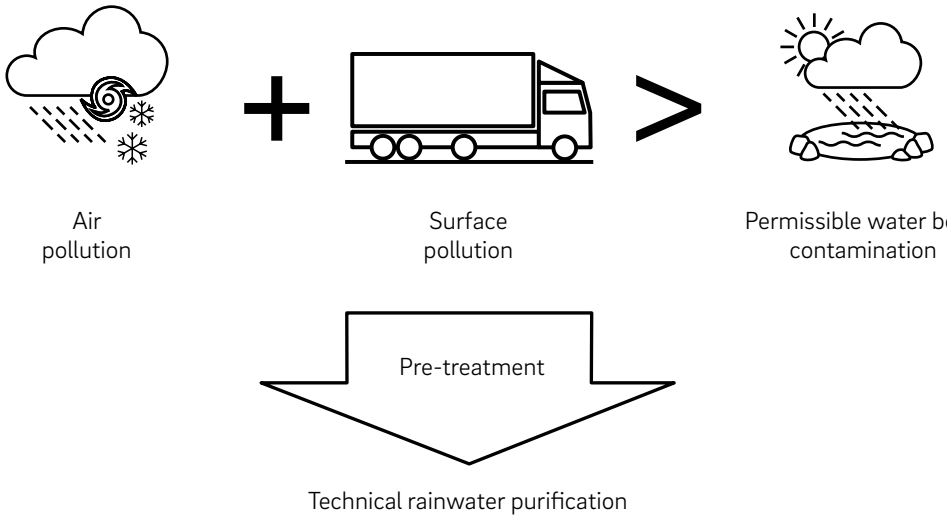
Little space required

- Compact design
- Underground installation, i.e. no space required on the surface
- Minimum height loss between inlet and outlet

05.01 Products and systems

05.01.01 RAUSIKKO SediClean and FilterClean

Run-off precipitation water is contaminated in a number of ways depending on where it has come from. The data sheet DWA-M 153 helps in evaluating air and surface pollution and also in defining requirements for pre-treatment, depending on the water body into which the water is to be released.
This is why REHAU has developed products that facilitate underground pre-treatment of precipitation water based on state-of-the-art technology.

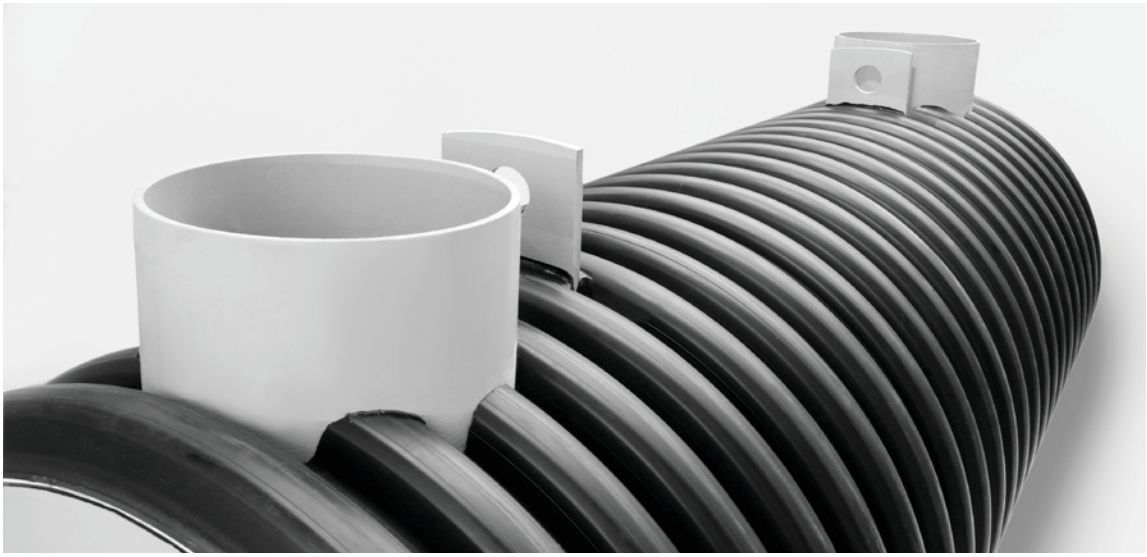


The majority of the contaminants contained in run-off precipitation water are absorbed on to small solid particles (particulate bonding). These contaminants can be effectively removed from water via mechanical procedures like sedimentation or floating processes. The systems for mechanical pre-treatment of precipitation water outlined in this chapter meet the specifications of the DWA data sheet M 153 from the German Association for Water, Wastewater and Waste (DWA).

The following pre-treatment systems are discussed in this chapter:

- RAUSIKKO FilterClean
- RAUSIKKO SediClean Type S
- RAUSIKKO SediClean Type M
- RAUSIKKO SediClean Type R

You can determine which precipitation treatment system best suits your needs using the following selection matrix. The matrix factors in the maximum permissible leakage calculated as per the data sheet DWA-M 153 and the area to be connected. This will help you choose the suitable system.



Functional principle REHAU system		**Sand and sludge collector** RAUSIKKO SediClean Type S[3)]	**Sedimentation/filtration** RAUSIKKO FilterClean
System type[1)]		D 26	D 24
Leakage value[1)]		0.80	0.50
Nominal diameter/type and max. connectable area A_{red} [m^2]		A_{red} [m^2]	A_{red} [m^2]
	DN 600	1000	–
	DN 1000	2000	2000

Functional principle REHAU system	**Sedimentation** RAUSIKKO SediClean Type M				RAUSIKKO SediClean Type R	
System type[1)]		D 24		D 25[2)]		D 21[2)]
Leakage value[1)]		0.65	0.55	0.50	0.35	0.20
Nominal diameter/type and max. connectable area A_{red} [m^2]		A_{red} [m^2]				A_{red} [m^2]
	Type M 3	4200	2100	1400	1050	**Type R 3** 500
	Type M 6	9400	4700	3100	2300	**Type R 6** 1000
	Type M 9	14500	7200	4900	3500	**Type R 9** 1700

Functional principle REHAU system	**Sedimentation** RAUSIKKO SediClean type M/R with manhole DN 1000					
System type[1)]		D 24		D 25[2)]		D 21[2)]
Leakage value[1)]		0.65	0.55	0.50	0.35	0.20
Nominal diameter/type and max. connectable area A_{red} [m^2]		A_{red} [m^2]				A_{red} [m^2]
	Type M 3	4200	2100	1400	1050	**Type R 3** 400
	Type M 6	9400	4700	3100	2300	**Type R 6** 1100
	Type M 9	14500	7200	4900	3500	**Type R 9** 1750

1) as per data sheet DWA-M 153
2) r_{crit} = 115 l/s/ha
3) Detailed information on RAUSIKKO SediClean type S can be found in chapter "08 RAUSIKKO Chambers" on page <?>.

For advanced requirements, particularly where you need to observe the threshold values for the concentration of dissolved contaminants (e.g. copper or zinc ions), we recommend using systems designed for physico-chemical pre-treatment of precipitation water (e.g. HydroClean/HydroMaxx).

There are further types of SediClean available for connectable areas bigger than those specified here. The dimensioning of these systems is to be clarified with the REHAU Applications Engineering Department.

Note: When designing rainwater treatment systems, the DWA data sheet M-153 gives the following recommendation (issue 08/2007, para. 9): "For economic reasons, rainwater treatment systems are not designed for maximum inflow from the rainwater sewer or the drainage area. The difference between the maximum inflow and the permissible load must be kept in a rain retention reservoir or drained off to a water body without any further treatment, by using e.g. a bypass pipe."

05.01.02 RAUSIKKO SediClean

The adaptable solution: Easy to adjust the system to the dimensions of the connected surface.

The RAUSIKKO SediClean facilitates effective retention of the finest particles. It uses the force of gravity to separate contaminants from less-contaminated water. As the sedimentation volume steadily accumulates, the fine particles begin to settle.

The purified water is drained off from the top and then it undergoes percolation or further pre-treatment depending on the individual situation.

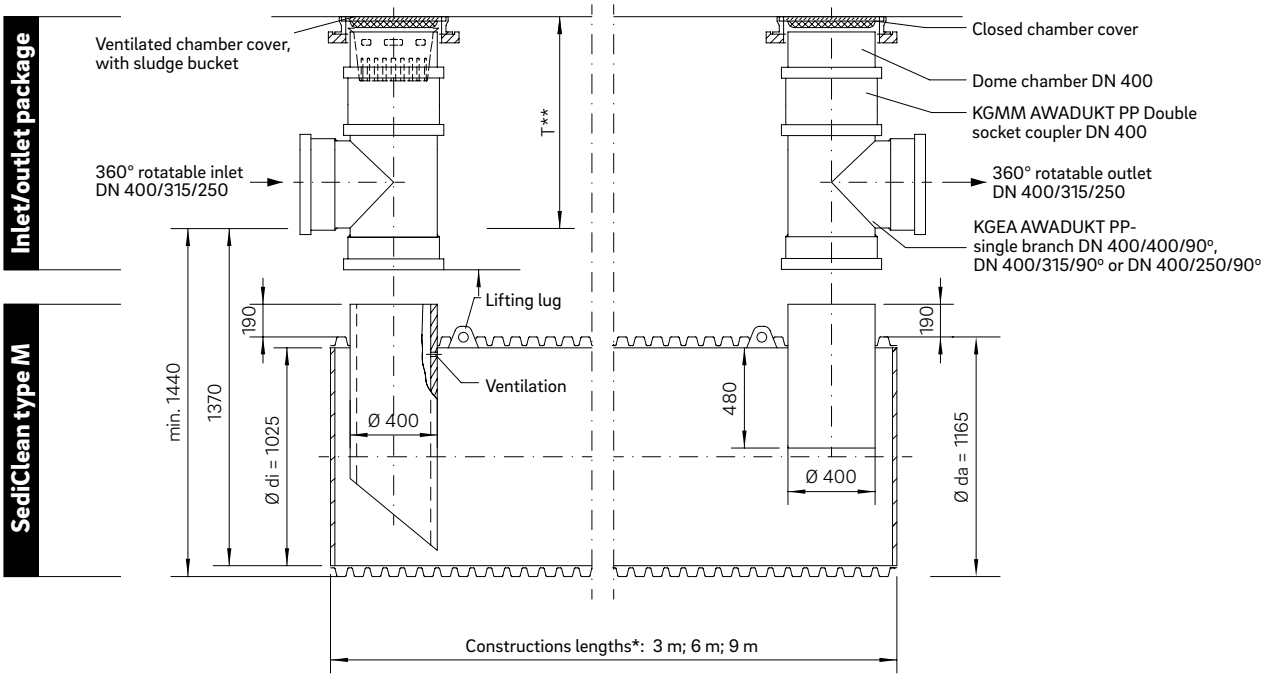
Pre-treatment options:

- Leakage value = 0.65 to 0.35 for type M (corresponding to D 24 or D 25 from DWA data sheet M 153)
- Leakage value = 0.20 for type R (corresponding to D 21 from DWA data sheet M 153)
- Maximum connectable area (A_{red}) from 400–14,500 m², for details see the table on page 90.

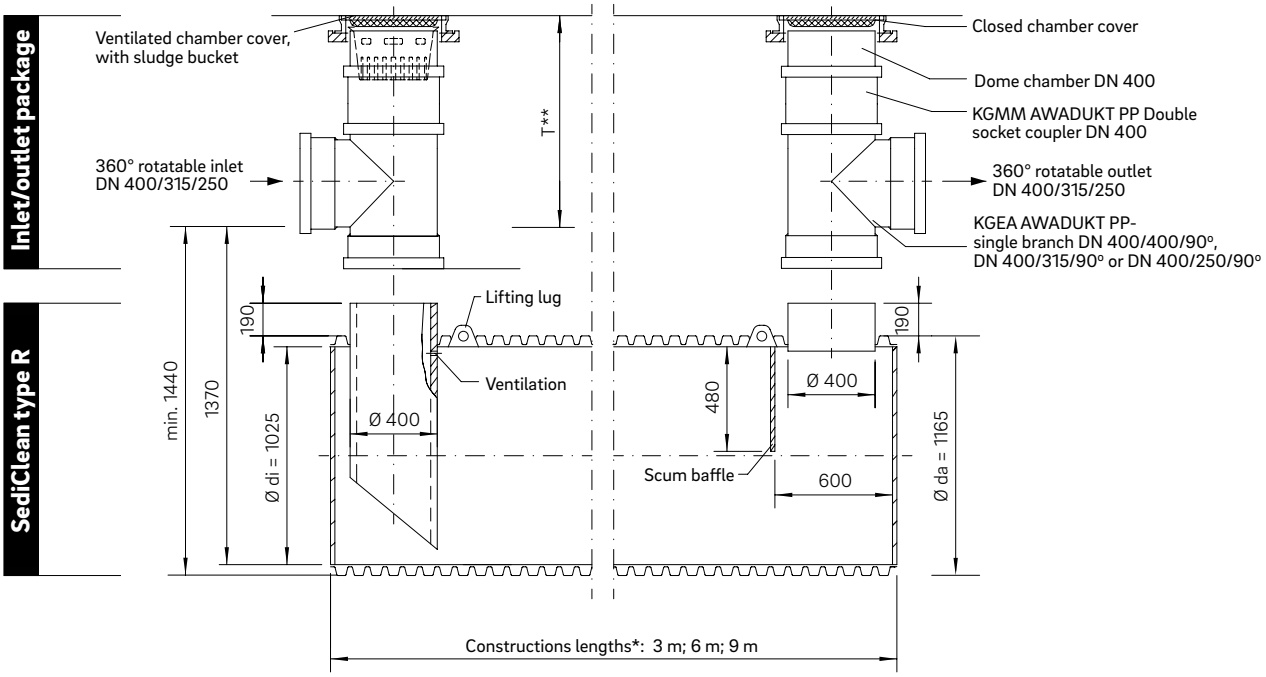
Construction:

- Horizontal cylinder in various lengths = variable sedimentation area
  Here, the product name denotes the type and the length of the cylinder (e.g. M3 = type M, cylinder length 3 m).
- KG DN 400, 315 or 250 inlet (connection of smaller diameters possible using reducing fittings).
- Installation below surfaces that are driven over is not a problem (cast covers of class D 400 in product range).
- In case of type R (structure as per RiStWag [Guidelines for structural measures on streets in water protection areas]), there is an additional scum baffle for reducing vertical flow at the outlet.
- The SediClean type M/R is also available with a manhole DN 1000.

RAUSIKKO SediClean Type M



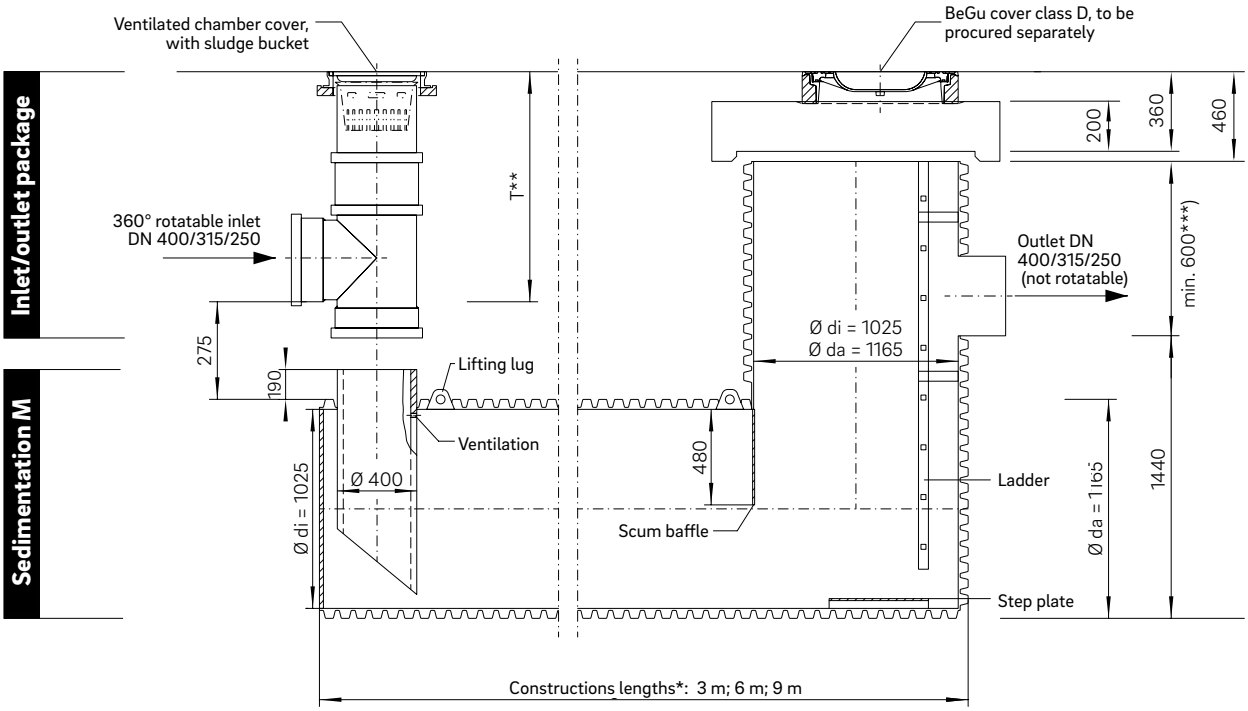
RAUSIKKO SediClean Type R



*Other construction lengths possible using the extensions for the SediClean base body (see following table).

**For minimum and maximum base depths, see the table on page 93; a vertically offset inlet is possible with a drop structure or an additional double socket coupler.

RAUSIKKO SediClean type M/R with manhole DN 1000



*Other construction lengths possible using the extensions for the SediClean base body (see following table).
**For minimum and maximum base depths, see the table below.
***Over 1160 mm with chamber extension.

	Inlet package	**Minimum and maximum base depth D*** **Inlet/outlet** KG DN 250	KG DN 315	KG DN 400
SediClean with DN 400 chambers	with PP DN 400 extension with L = 3 m	830 mm ≤ D ≤ 2000 mm	965 mm ≤ D ≤ 2050 mm	1050 mm ≤ D ≤ 2150 mm
	with PP DN 400 extension with L = 6 m	830 mm ≤ D ≤ 3500 mm	965 mm ≤ D ≤ 3550 mm	1050 mm ≤ D ≤ 3650 mm
SediClean with DN 1000 manhole	with PP DN 400 extension with L = 1 m	830 mm ≤ D ≤ 1500 mm	965 mm ≤ D ≤ 1550 mm	1050 mm ≤ D ≤ 1650 mm
	with PP DN 400 extension with L = 3 m	830 mm ≤ D ≤ 3500 mm	965 mm ≤ D ≤ 3550 mm	1050 mm ≤ D ≤ 3650 mm

*Please take the structural analysis of the inlet and outlet pipes into account when determining the installation depth.

RAUSIKKO SediClean systems can be loaded with SLW 60 under a minimum coverage of 80 cm and a max. installation depth of 4.0 m. Installation conditions different from those listed above and also installation carried out below the max. groundwater, impounded water or stratum water level need to be considered on case-by-case basis and should be clarified with the REHAU Applications Engineering Department.