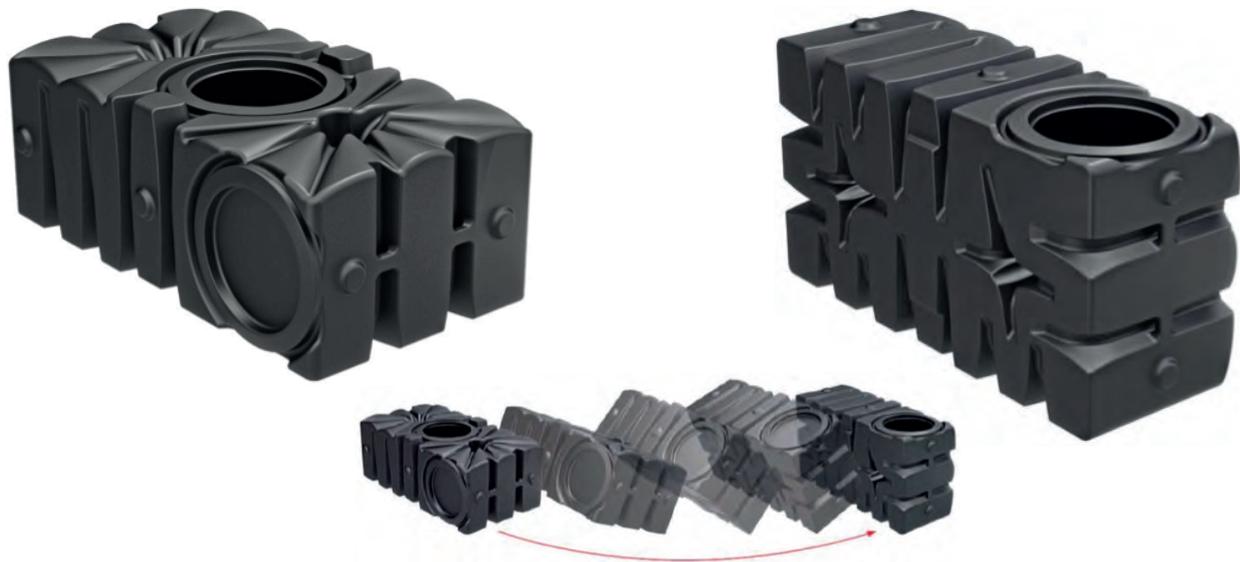


ACO Rain4me rainwater flat tank



! We give you a 25-year guarantee for the intactness of the respective buried tanks (no deformation, no leaks in the tanks)

Guarantee terms and conditions:

- Installation in full compliance with our installation and operating instructions.
- Proper loading and handling.

In case of a guarantee claim, we replace the material used free of charge and with free delivery. Any further guarantees are excluded. Defect liability claims are unaffected by this.

We recommend installation by trained skilled personnel.

All additional products purchased through ACO include separate installation instructions enclosed in the transport packaging, which must always be followed!

Request any missing instructions from us immediately; alternatively, you can download them from www.rain4me.aco

1 General information

1.1. Safety

All work must be carried out in compliance with the relevant health and safety regulations. In Germany these are the accident prevention regulations according to BGV C22. These can be viewed on the website of the construction industry accident insurance body ("Berufsgenossenschaft der Bauwi // www.bgbau-medien.de); the earthworks, tank installation and excavation work must be carried out according to DIN 18300, DIN 4124, EN 1610 and the DWA-A 139 and ATV-DVWK-A 127 standards.

Accessing the tank without appropriate soil cover is not planned and should be avoided; should it nonetheless be absolutely necessary due to the installation conditions, particular safeguards must be taken by a 2nd

person (risk of slipping or similar)

Furthermore, the relevant regulations and standards must be taken into account during installation, assembly, maintenance, repair, etc. Appropriate instructions are given in the corresponding sections of these instructions.

The entire system must be shut down (if electrical installations are mounted) and secured against unauthorised switching on before carrying out any work on the system or system parts.

The tank cover must be kept closed at all times, except when work is being carried out in the tank, otherwise there is a very-high accident risk. Any transport packagings of openings

are neither accessible nor child-safe and must be replaced with suitable covers or pipe connections immediately after delivery.

ACO offers a comprehensive range of accessory parts, which are all coordinated with each other and can be combined to form complete systems. The list of optional accessory parts can be found online at www.rain4me.aco. Use of other accessory parts can result in impairment of the system's functional capability and cancels liability for any resulting damage.

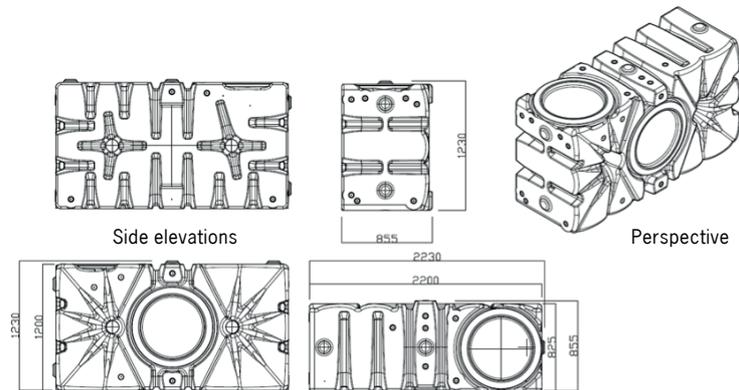
1.2 Mandatory marking

All non-potable water pipes and drawing off points must be marked by the user in writing with the words “not drinking water” or using images (DIN 1988 Part 2, Clause 3.3.2) to prevent erroneous connection with the drinking water system even after many years (the marking material, if it is not

enclosed with the delivery or is required additionally, is included in the list of accessory parts at the end of this description). Even if marked correctly, mix-ups can still occur, e.g. by children. Therefore, child-proof valves must be installed at all non-potable water tapping points.



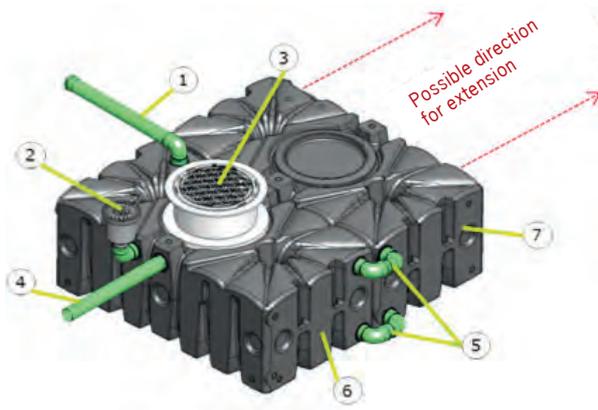
2 Technical Data



Tank	Art. No.	Weight (kg)	L (mm)	W (mm)	H (mm)	Material
Basic	103000	approx. 105	2230	1230	855	PE-LLD
Extension	103002	approx. 105	2230	1230	855	PE-LLD

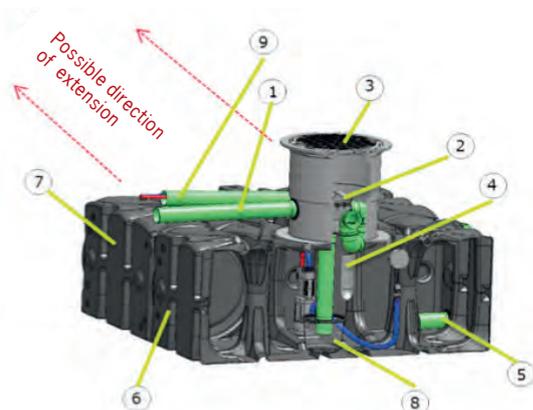
(production-related dimensional differences are possible)

3 Tank structure



Variant: lying parallel (E.g. Garden Basic variant)

- 1. Roof inflow
- 2. water connection box
- 3. dome
- 4. Overflow
- 5. Tank connection (min. 20 cm in the tank)
- 6. Basic tank
- 7. Possible extension tank



Variant: lying parallel (E.g. House & Garten Compact variant)

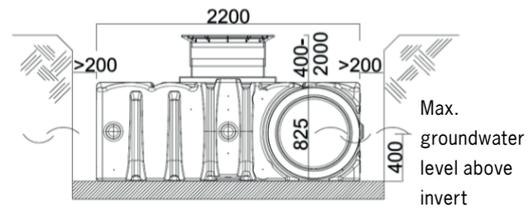
- 1. Roof inlet
- 2. Integral tank filter
- 3. High dome
- 4. Overflow
- 5. Tank connection (min. 20 cm in the tank)
- 6. Basic tank
- 7. Extension tank
- 8. Inlet flow turbulence reducer
- 9. Blank pipe with water pipe and power cable to the house

4 Installation conditions

Tank in the green area/walkonable

- lying installation variant
- maximum allowable groundwater level above invert = 40 cm

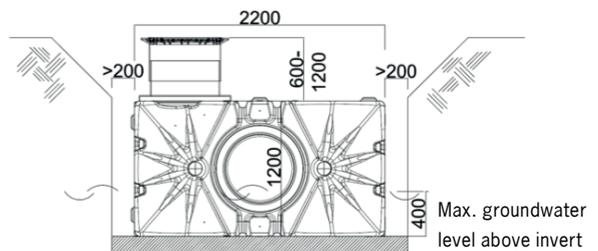
with low or high plastic neck section and optional plastic extension cover (walkonable 200kg)



Tank in the green area/walkonable

- standing installation variant
- maximum allowable groundwater level above invert = 40 cm

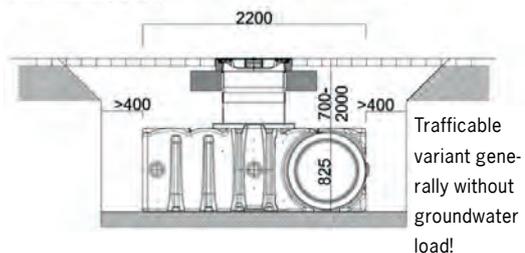
with low or high plastic neck section and optimal plastic extension cover (walkonable 200kg)



Tank in car trafficable area (maximum axle load 2.2 tonnes)

- lying installation variant only installation variant
- Groundwater loading must be excluded

with base of the high plastic neck section + adjusted extension + Saku cover (B 125)



5 Installation and assembly

General information/recommendations

- The local building control office/competent local water authority should be consulted in advance to find out whether it is necessary to submit an application for the installation of a rainwater harvesting system.
- A specialist firm for civil engineering and pipe laying should be contracted for the installation (especially for rainwater use in the house), to ensure proper and durably watertight construction!
- Equally, appropriately qualified persons or firms must be employed to make the connection to the drinking water system and the electrical connections.

All liability is excluded if the above instructions are disregarded.

5.1. Soil

The following points must always be clarified before the installation:

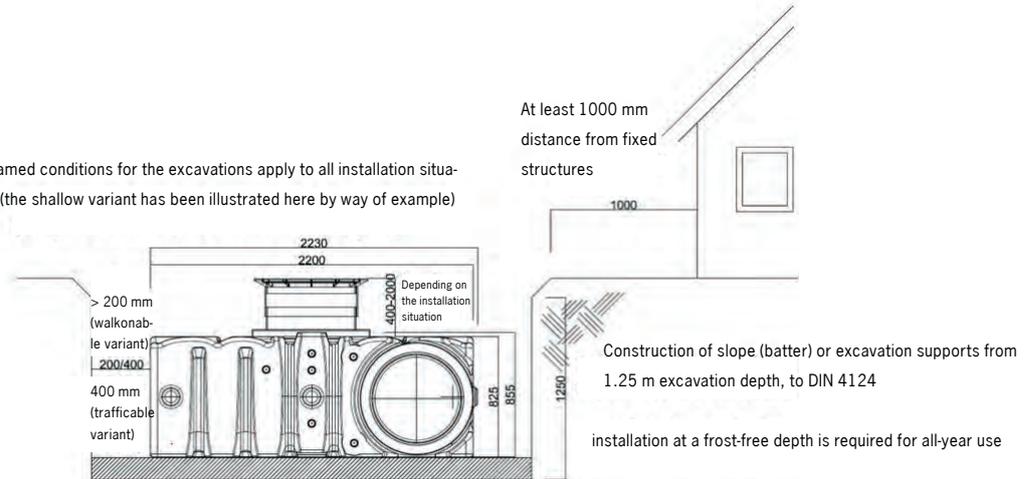
- the structural suitability of the soil to DIN 18196
- maximum occurring groundwater levels and permeability of the soil
- any types of loads that occur, e.g. traffic loads
- other factors influencing the soil (e.g. pipes and cables in the ground...)

A soils investigation report should be commissioned to determine the soil physical properties, or at the very least, the local building control office should be asked; if the soil is not tested for correspondence with the values required in the installation instructions to determine whether it is suitable, it is possible for the functional capability of the system or the tank connections to be impaired

and the liability for resulting damage to be cancelled.

5.2. Excavations

the named conditions for the excavations apply to all installation situations (the shallow variant has been illustrated here by way of example)



Installation of several tanks:

Blinding layer, gravel, max. grading range 0/5 mm stone-free, compacted

- the tanks can be positioned directly next to each other for a walkonable version
- a compacting space at least 40 cm wide must be left between the tanks for a trafficable version

Load-bearing soil is required as subsoil! The following EV2 value is required for the soil compaction: 45 MN/sqm.

To provide sufficient working space, which can also be compacted, the footprint of the excavations must exceed the tank size by ≥ 400 mm (for a trafficable variant) and by ≥ 200 mm (for a walkonable variant) on each side.

For a walkonable variant, the tanks can be placed directly next to each other, for a trafficable variant the tanks required ≥ 400 mm distance between each other.

The distance of the excavations from fixed structures must be at least 1.00 m.

From excavation depth > 1250 mm, the excavations must be battered with a slope to DIN 4124 (with or without excavation supports – depending on the requirements and situation)

The depth of the pit must be dimensioned so that the maximum soil cover (see section 4 – installation conditions) above the tank is not exceeded.

For all-year round use of the system, the tank and the water-carrying parts of the

system must be installed at a frost-free depth. In general the frost-free depth is approx. 600 mm (Northern Germany) to approx. 1200 mm (Austria); contact the competent authority for the place of installation for more precise information.

A layer of gravel (max. grading range 0-5 mm stone free, approx. 100-150 mm thick) is laid and compacted as the subbase/blinding layer.

5.2.1 Hillside location, slope, etc.

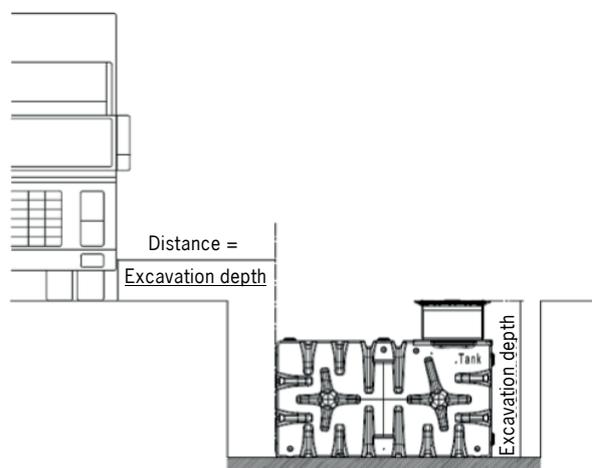
If the tank is installed in the immediate vicinity (< 5.00 m) of a hill, hillside or slope, a structurally designed retaining

wall must be built to absorb the soil pressure; the wall must protrude above the tank dimensions by at least 500 mm

and be a minimum distance of 1000 mm from the tank.

5.2.2 Installation next to trafficked areas (e.g. roads)

If the underground tanks are installed next to traffic areas, which is used by heavy vehicles (over 3.5 t) (e.g. adjacent road), the minimum distance of the tank from these areas should be at least equal to the excavation depth.



5.3 Connection of several tanks/tank wall pipe penetrations

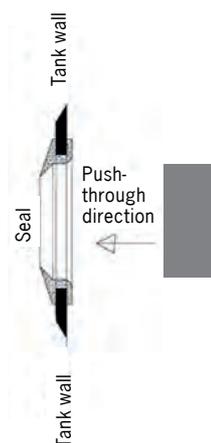
Two or more tanks are connected via the mounting surfaces on the long or short sides by means of installed special seals and KG pipes (to be provided on site; recommendation: KG 2000 pipe (green)); the openings, if not already made in the factory, must be made only using the core drill bit supplied or that can be ordered as an accessory part.

Depending on the installation situation, the holes only the corresponding visible drill markings are to be used for the holes and then one rubber lip seal

inserted in each. The groove of the seal must enclose the tank wall and be flush with it. The sliding direction is shown on the right (in the direction of the preformed rubber lip).

The laying of the pipes must comply with the following standards: DIN 1986 and EN 752.

The pipes should each protrude into the tank by 20 cm.



5.4 Insertion and backfilling

V.1) Lying installation –

possible extension on the long side:

Both the overflows in the bottom area and the piping for the ventilation in the upper area are laid to the side outside the tanks by assembling straight pipe lengths and bends in the corners (1 x 90° (87°), 2 x 45° or 3 x 30°); for installation of the seals/pipes, see sketch above



V.2) Lying installation –

possible extension on the short side:

The overflows in the bottom area are positioned at the side outside the tanks, for ventilation in the upper area, one straight pipe length is inserted between the butt surfaces at 90° (87°) angle; this should be ≥ 50 cm long for the ventilation, so that when the tanks are pushed together it is ensured that despite holding on tight to the pipe from the outside, ultimately at least 20 cm pipe protrudes into each tank. For further comments, see Section V.1



V.3) Standing installation –

possible extension on the long side:

Both the overflows and the piping for the ventilation are positioned at the side outside the tanks by assembling straight pipe lengths and bends in the corners; For further comments, see Section V.1



V.4) Standing installation –

possible extension on the short side:

The overflows in the bottom area are positioned to the side outside of the tanks, for the ventilation in the upper area a straight length of pipe is inserted between the butt surfaces at 90° (87°) angle; for further comments see Section V.1





Important: the tanks can only be positioned directly next to each other for the walkonable variant; for a trafficable installation variant the tanks must be positioned with at least 40 cm distance between each other, so that the area between can be compacted!

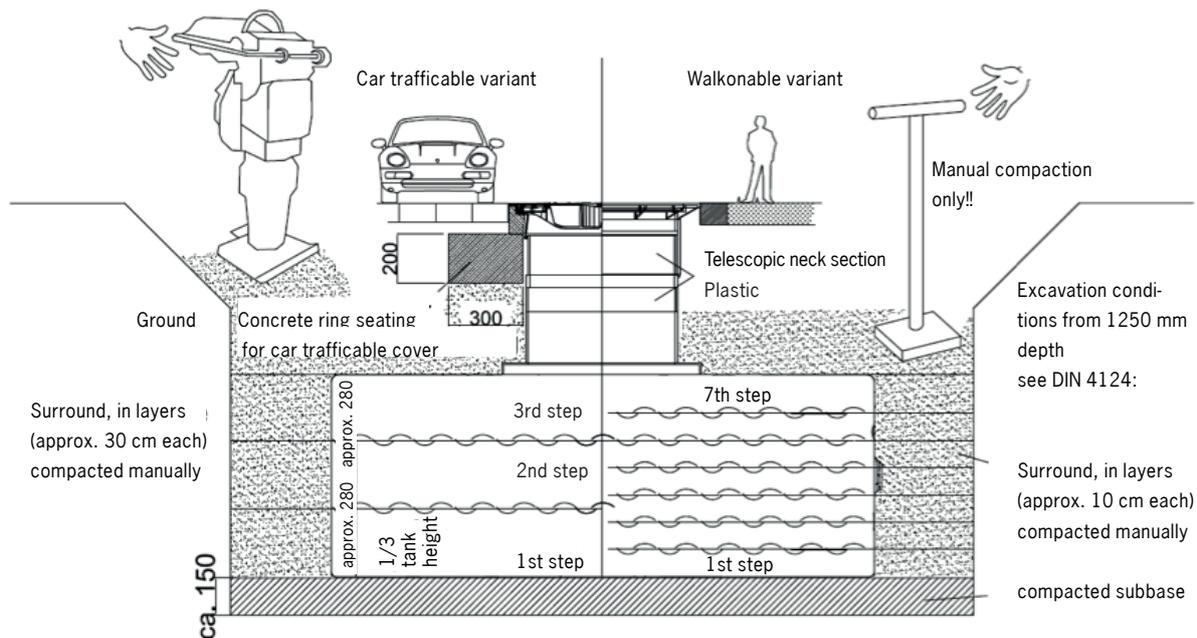
The tank/tanks must be placed in the prepared excavations carefully using suitable equipment so that they do not hit each other.

To prevent deformations, before each fill layer the tanks should be filled up to the relevant level with water; at the same time, ensure that any overflows to other tanks are already connected and a uniform water level sets in. The side surround (gravel 0-5 mm, stone free) and at least 20 cm above the tanks is then

placed and compacted; walkonable variant: in max. 10 cm steps, manual compaction using a hand tamper trafficable variant: in max. 30 cm steps with mechanical compaction (at the side using a small vibrating plate, above with max. 1000 size vibrating plate); ensure that the mechanical compaction equipment does not come into direct contact with the tank.

A load-bearing base course made of recycled concrete or crushed rock 0-32

must be laid for a paving block surface (compact with max. 3000 vibrating plate); max. 4 cm crushed sand or grit us used as the paving block bedding layer. Manual compaction is not possible in the two continuous narrow hollow webs, here slurring must be used.



5.5 Laying the connections

The inlet pipe from the house to the tank must be laid with a gradient of at least 1% in the direction of flow; the overflow pipe from the main tank in the direction of the sewer or infiltration system should have a steeper gradient than the inlet pipe. The tank overflow must be protected against backflow according to DIN 1986:

a) for a pure stormwater sewer with a backflow stop

b) for a combined water sewer by means of a lifting plant.

The ACO system chain has diverse additional products for both subsequent seepage and for protection against backflow.

(www.aco-hochbau.de; here you will also find the responsible sales representative) All intake and pressure pipes and control cables are to be laid in a blank pipe (KG or similar), which must be laid with a gradient to the tank and as straight as

possible without deflection. Any bends required in this pipe length must be made with maximum 30° fittings, to avoid kinks in the pipes and cables.

Important:

The above-named blank pipe must be connected to an opening above the maximum possible water level.

6 Installing the dome

6.1 Installing the dome

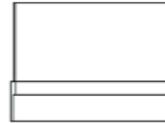
Products



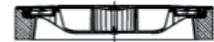
High sliding neck section
(with built-in tank filter for
house & garden)
with walkonable cover



low sliding neck section
with walkonable cover

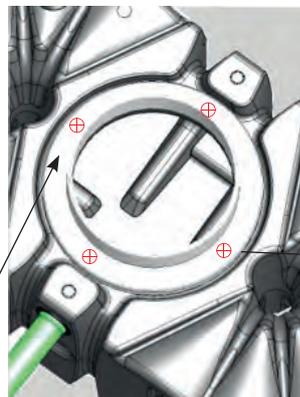


alternatively:
neck section extension

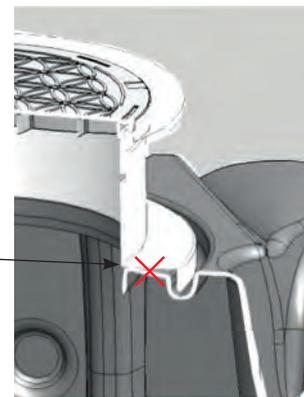


alternatively:
walkonable cover

Depending on the type, the telescopic dome section enables continuous adjustment of the underground tank to the existing ground levels with between 400 mm and 700 mm soil cover and can be modified to fit precisely by installing the dome extension. The base of the dome is placed on a predefined edge on the underground tank (at least 4 self-tapping screws cross-wise); a sealing tape should be attached under the base (included in the scope of supply), so that the changeover between the dome and tank is formed as jointless as possible; if the self-adhesive sealing tape is not already installed, it should be attached to the edge of the base in a ring shape. If the high telescopic dome is delivered with an installed integral tank filter, there are 2 screws on the outside as transport locks for the sliding area. These screws can be removed and screwed back in on the inside of the dome to secure its position. After backfilling the soil the screws should be removed again to prevent possible risk of injury in the dome access.



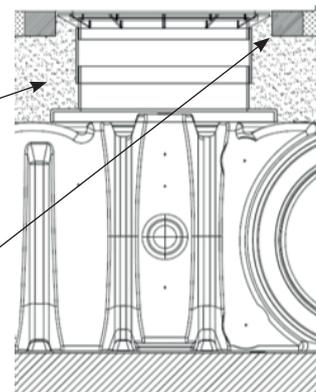
The further steps described under Section 6.2 - 6.4 are then completed.



Finally, the selected cover is put on; the threaded fastening on the cover must be tightened so that it cannot be opened by a child!

6.2 Walkonable variant

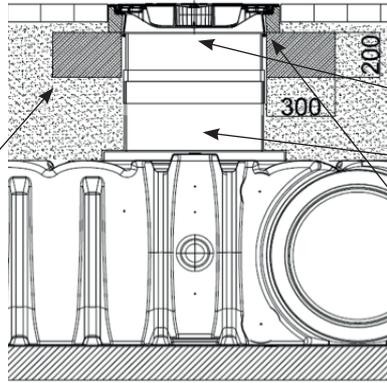
To prevent the transfer of loads onto the tank, the telescope of the dome must be filled with gravel (max. grading range 0/16) in layers and uniformly compacted **by hand**. Care must be taken not to damage either the dome or the tank, to ensure the long-term leaktightness of the installation. The cover can be surrounded with paving blocks or similar, the remaining area should be grassed.



The procedure is the same for the water extraction box.

6.3 Trafficable variant

If the tank is installed under an area driven on by cars, only an appropriately approved cover can be used, which must be installed decoupled from the tank. A ring-shaped support 300 mm wide and 200 mm high made of concrete C 20/25 must be made for the SAKU cover that can be ordered as an accessory. Alternatively, a precast concrete ring with similar dimensions can be installed. Further instructions are given in the separate installation and operating instructions enclosed with the cover.



The dome is made up of the following parts:

- dome extension (see 6.5); this must be shortened up to the bottom of the SAKU
- Bottom part of the high telescopic dome (see 6.1)

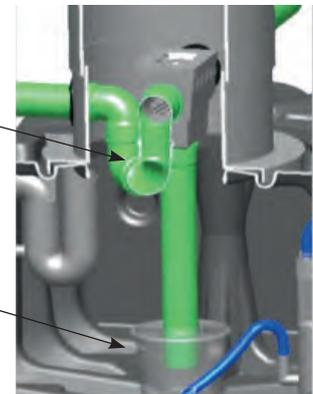
A sealing tape can/should be inserted at the top edge of the dome extension, to permanently and flexibly seal the joint between the plastic dome and the concrete frame (not included in the scope of supply).

6.4 Integral tank filter

If an integral tank filter is used (and it is not preinstalled), it must be installed in the dome with KG pipe DN 100 through prepared openings with inserted seal (see also sketch of seal in Section

5.2.4); a trap must be formed as an odour trap.

The inlet to the tank is then made vertically from the filter in the Inlet flow turbulence reducer.



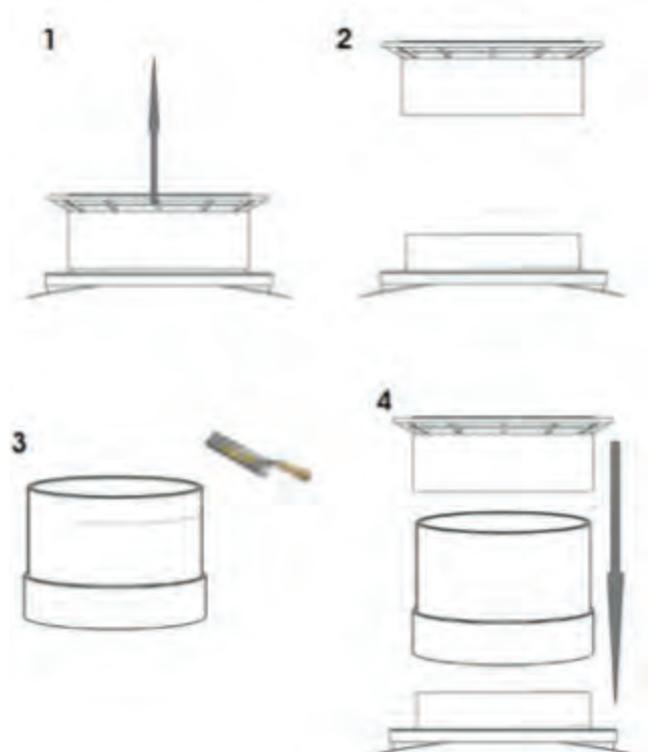
6.5 Alternative dome extension

If required, a dome extension can be installed.

The main dome parts are not changed, the height adjust is made solely via the dome extension.

The upper part of the dome is lifted off, the bottom part remains on the tank; after determining the precise height between the ground level and neck section edge, the dome extension is shortened if necessary using a suitable saw. The dome extension is now positioned between the bottom and top dome parts.

The further procedure is described in sections 6.1 - 6.3.



7 General installation aid for complete packages

The brochures are a good installation aid and provide a way of finding out which parts belong together.

Please follow the instructions enclosed with the individual devices.

- Install the underground tank as described in the installation instructions.
- Connect the downpipes, which are to be connected to the underground tank, to the rainwater inlet at the underground and connect the overflow to the drainage sewer, the infiltration system or other drainage systems.
- If you have purchased a house system, to supply your toilet and/or washing machine with rainwater, or you would like to install a level indicator in the house for your garden system, lay a DN 100 KG pipe/KG 2000 pipe from the house connection at the underground tank to the house service connection room in the building. Please ensure that the blank pipe is laid with at least 2% gradient to the underground tank, so that condensation cannot run into the building. If possible, use max. 30° or 45° bends and branches (e.g. to the water extraction box), so that the rainwater hoses do not kink.
- A wall penetration seal/gland should be used to seal the KG pipe in the house; the seal is inserted directly in the DN 100 KG pipe.
- In the House and Garden packages, the opening for the water connection box (if it is not ordered separately) must be closed off using an appropriate KG pipe and cover.
- The emergency overflow at the top of the tank must be shortened if necessary, so that the skimmer edge lies below any other openings. This ensures that the surface water flows away, rather than standing, for example, in the top tank connection or in one of the blank pipes (e.g. to the water extraction box of the garden packages).
- Depending on the features included in the package, the installation procedure is as follows:

a) House and Garden Professional: install the fully automatic rainwater control in the plant room/service connection room in the house and lay the suction (intake) hose from here to the underground tank (through a corresponding blank pipe)

b) House and Garten Compact:

place the underwater pressure pump in the underground tank. Use a rotproof rope or similar to secure the pump from above in the neck section and to place it upright in the tank. It also makes it easier to remove the pump from the tank if necessary.

Lay the rainwater pressure hose (through a blank pipe with slope to the underground tank) from the pump to the service connection room in the hose and connect it via a shut-off ball valve to the rainwater pressure pipe to your toilet, washing machine, etc.

In the next step you connect the drinking water pressure pipe to the free drinking water pressure pipe and connect the inlet socket of the topup supply to the underground tank using HT and KG pipes.

IMPORTANT: Ensure slope to the underground tank! It is advisable to form a trap as an odour trap. If the top-up pipe is not positioned with adequate backflow protection, a backflow safety valve should be installed. (e.g. ACO Triplex DN 50, mounted on the wall in front of the wall penetration). Lay the pump cable and the cable from the float switch of the drinking water topup from the underground tank to the service connection room in the house.

IMPORTANT: Now plug the intermediate connector of the float switch in the socket and the connector of the solenoid valve on the intermediate connector.

IMPORTANT: If there is no water in the underground tank, water runs into it until the float switch in the underground aligns upwards and the solenoid valve closes.

As soon as there is sufficient water in the underground tank (pump completely covered) please plug the connector of the underwater pressure pump into a power socket. The system begins to operate and the pump fills all rainwater pressure pipes in the house.

IMPORTANT: Check beforehand that all threaded fasteners, connections, and hose clamps are properly tightened. Please ensure that after all pipes have been filled, the pump in the underground tank switches off and only switches on again if you open a load (toilet flushing).

c) Garden Plus:

Find a suitable place for your water connection box near the underground

tank and lay a protective pipe/blank pipe, e.g. KG pipe DN 100/KG 2000 from the tank to the water connection box. When laying the blank pipe, it is advisable to lay the rainwater pressure hose from the underwater pressure pump to the water connection box at the same time through the blank pipe and to connect it to the ball valve. Now connect the hose to the pump and lay the pump cable in a reserve blank pipe to a power socket. Please use a rotproof rope or similar to secure the pump at the top of the neck section in the underground tank. It also makes it easier to remove the pump if necessary. As soon as you have tightened all connections and hose clamps, the ball valve in the water connection box is closed and the underground tank is filled with water, plug the pump connector into a power socket.

IMPORTANT: The pump starts up and as soon as the pressure has built up in the pipe the pump switches off again. If you now open the ball valve, the pump is switched on automatically and vice versa. To make the system winterproof, disconnect the pump plug from the power socket and open the ball valve in the water connection box. Your system is now winterproof.

d) Garden Basic:

Find a suitable place for your water connection box near the underground tank. Lay the suction hose through a KG pipe/KG 2000 pipe DN 100 laid for this purpose to the water connection box. Feed the suction hose through the perforated bottom of the water connection box and fix a hose coupling above the bottom. This prevents the hose from slipping into the tank. Fill the pump and the entire suction hose with water and connect the hose in the water connection box to the short hose piece with coupling at the pump (intake side at front). Connect, e.g. a garden hose, to the discharge side at the top. As soon as you now plug the connector into a power socket and if necessary throw the switch, the pump pumps water. Disconnect the connector or throw the switch back to switch off the pump. To make the system winterproof, disconnect the suction hose from the hose piece of the pump and stow it in the water connection box. Remove the pump, drain it completely and place the pump in a dry, frost-free and well ventilated place. Your system is now winterproof.

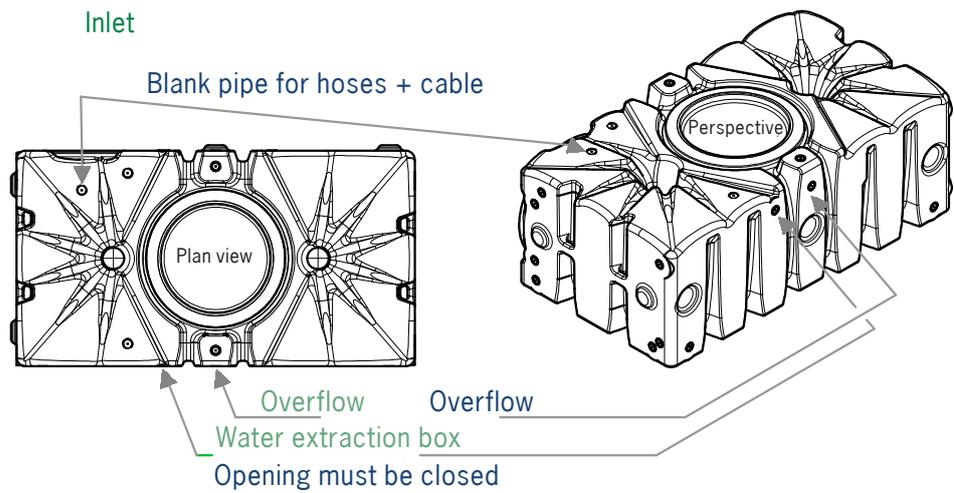
8 Note: Installing modular system tanks

Using the prepared openings in the tank

Horizontal installation:

Garden use only

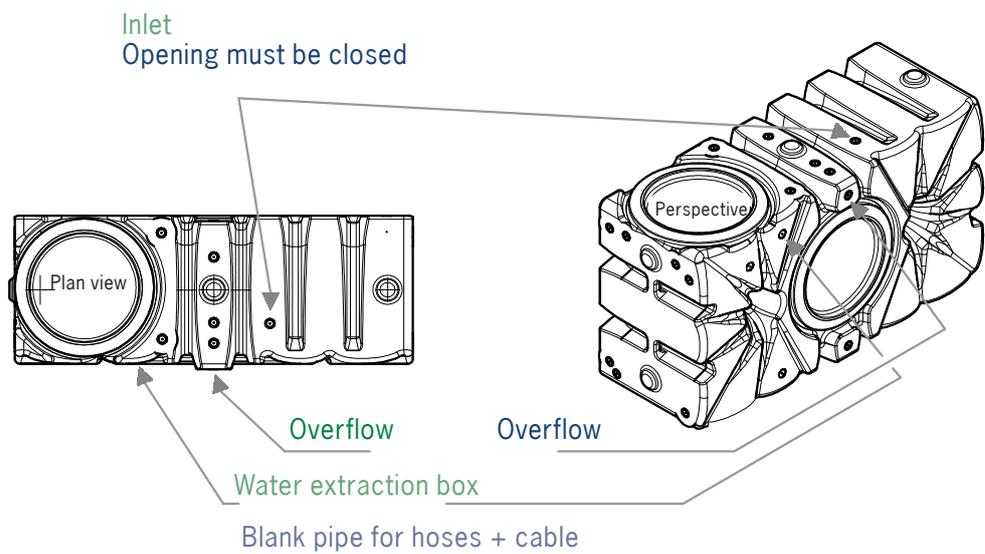
House & garden use



Upright installation:

Garden use only

House & garden use



9 Inspection and maintenance

Regular inspection and qualified maintenance increase the operating and functional reliability, lengthens the use period and prevents structural damage and unscheduled repairs. Failure to comply with the intervals named in the

following can cause impairment of the system's functional capability and liability for resulting damage is cancelled.

The owner of the installation can carry out the inspections themselves.

Servicing and maintenance must be

carried out by competent persons and documented.

The following time periods should be considered:

Monthly inspection

- Actuate the manual emergency seal at any backflow stops installed
- Check the wastewater lifting plant, if installed, for operability, leak tightness, external corrosion

Six-monthly inspection

- Check roof outlets and overflows for unobstructed flow and leaktightness; clean dirt traps; check heating if installed
- Check roof gutters and downpipes for leaktightness, cleanliness, fixing, heating if installed and protective coating; clean the screens
- Visual check of the switching cycle of the non-potable water pump for operability and leaktightness
- Test the system controls by monitoring a switching cycle of the pump system
- Check odour traps for cleanliness, water level, leaktightness and if applicable, ability to shut them off

Yearly inspection

- Check the condition of the filter in the filter system
- Check the store for cleanliness, leaktightness and stability
- Check the safe distance (water level) of the inlet and overflow, if applicable, visual check of the ventilation (air supply and removal)
- Compare the level in the store with the level indicator
- Check the visible pipes and cables for condition, leaktightness, fixing and corrosion
- Check the water meter for function and leaktightness
- Check for leaktight connection of the backflow valve/backflow flap (by manual actuation), if installed
- Check the wastewater lifting plant for operability, leaktightness, corrosion, if installed
- Check any drawing off fittings for leak tightness and possible changes to the water with regard to odour, colour and suspended substances
- Check the flushing operation of flushing devices (toilet cistern, flush valves, etc.), correct the flushing water volume if necessary
- Check the marking of all pipes and drawing off points

Yearly maintenance

- Clean the filter/filters
- Controlled trial run of the non-potable water pump with test before, during and after the trial run, electrical fusing of the pump system according to VDE regulations, possible inlet pressure of the diaphragm tank, leaktightness of the mechanical seal of the pump, function of the backflow valve, pump and flow noises, leak tightness of the system and fittings, cleanliness of the system, corrosion of the system parts
- Controlled trial run of the system controls with testing before, during and after the trial run:
System switching on and off points, topup water supply (solenoid valve)
- IF wastewater lifting plant installed, check for leaktightness, function, check the level switching, set heights of on, off and alarm level, check the flow preventer for leaktightness

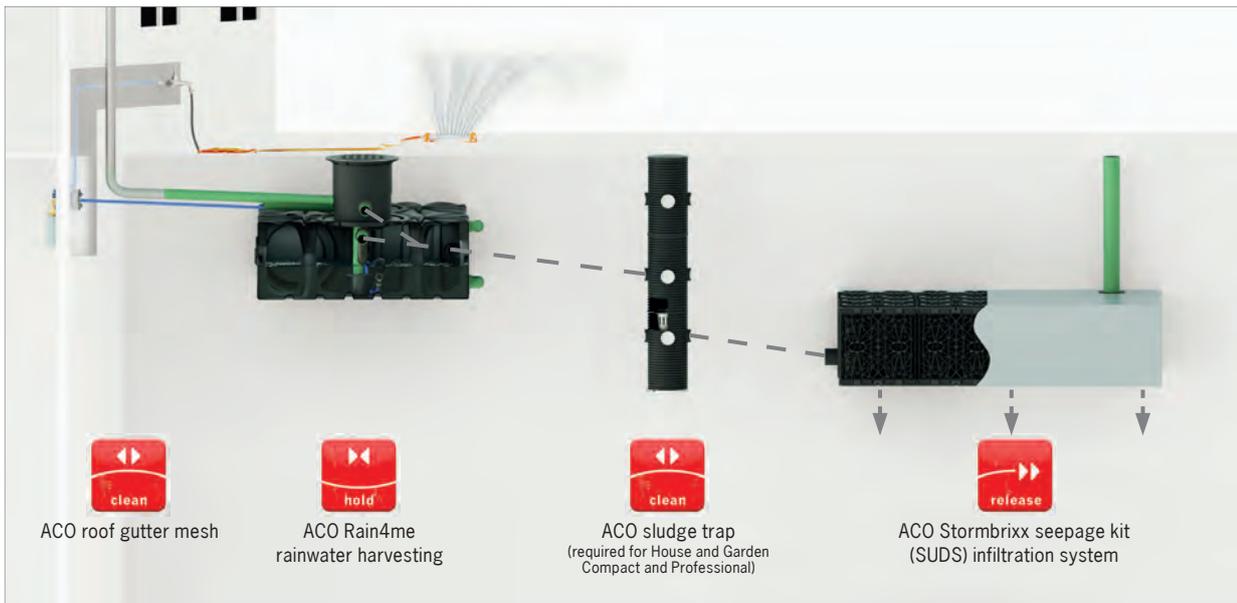
Maintenance every 10 years

- Draining of the rainwater storage tank, cleaning the inside surfaces of the tank, removing any sediment (basic tank)

9 Note: We recommend the ACO Stormbrixx seepage kit for infiltration of excessive rainwater

The piping from the tank to the sludge trap and on to the Stormbrixx must be laid with at least the same pipe diameter as the inlet pipes to the tank and with at least 2° gradient.

Application example



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