

# Assembly and Installation Instructions SC model tanks

- 2,000l
- 3,000l
- 4,000l
- 5,000l
- 8,000l
- 10,000l



It is imperative to observe the items described in these instructions. In case of non-compliance, all warranty claims shall lapse. For all add-on items from GRAF, you shall receive separate installation instructions included with the transport packaging.

It is imperative to check the components for potential damage prior to transferring them into the building pit. For the operation and maintenance of the system, you shall receive separate instructions.

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## 1. Safety notice

### 1. Safety notice

The applicable accident prevention regulations in accordance with the Work Health and Safety Act 2020 (WHS Act) and Work Health and Safety (General) Regulations 2022 (WHS Regulations) must be observed during all work. The work must be performed by a licensed plumber and a second person should be present for safety reasons.

Furthermore, all relevant regulations and standards must be observed during assembly, installation, maintenance and repair. All installation of fittings and arrangements to be undertaken by a suitably qualified plumber.



The tank cover must remain closed at all times, otherwise there is an increased risk of accident.



The rain protection mounted at delivery only serves as packaging for the transport only. It must be removed immediately upon delivery and replaced by an appropriate cover (telescopic dome shaft with respective cover). Only original GRAF covers or covers approved in writing by GRAF must be used.

All GRAF manufactured tanks comply with AS/NZS 1546.1 and are subjected to our quality system which is QMS:ISO 9001 certified.

GRAF offers a wide range of accessory parts which are precisely coordinated and can be used to complete systems. The use of different accessory parts can lead to impact the functionality of the system, and to void liability for consequential damages.

## 2. Installation conditions

### 2. Installation conditions

These installation conditions comprise all Super Compact tank models which are used in a range of products which reflect different applications. The external plumbing work installation requirements (inlet/outlet connections) varies for each series and are detailed in section 4. Technical Data (the relevant DTS document is an appendix to this installation manual).

#### 2.1. Installation basics

- For trade waste applications, it is important to apply for trade waste approval before installing and GRAF can assist you with your trade waste application with the authority of jurisdiction.
- Unloading, installation, servicing, and associated works must be planned beforehand.
- The installation instructions for the tank and operation instructions for its application must be followed.
- The materials of the inlet and outlet pipes must be resistant considering specific requirements depending on the tank application.
- The condition of all components must be checked before installation and protected from damage or dirt.
- Existing pipes should be checked for matching connection heights.
- The inlet and outlet lines must be sized and installed in compliance with EN 12056 and EN 1825-2 or equivalent AS/NZS 3500.1 and AS/NZS 3500.2.
- Before backfilling the excavation, and possibly before connecting the inlet and outlet line, the system should be checked for leaks. Procedures and results of the inspection should be documented according to Commission section.
- The liquids shall not be able to escape from the system through the access points during operation, unless exempted by a relevant regulation.
- Proper ventilation of the inlet and outlet pipes according to application.
- Accessibility for cleaning vehicles and for inspection must be ensured.
- Please consult relevant authority prior to installation.

#### 2.2. Requirements for the installation site

- Site requirements must be considered (groundwater level, embankment, expected loads, etc.).
- Safety against buoyancy and flotation must be ensured.
- Special local requirements must be considered (protection area, flood prone areas etc.).
- The installation site must be frost-protected in areas subjected to it.
- The installation site should be as close as possible to the location of the source.
- The excavation base must be installed horizontally and must have sufficient bearing capacity.

## 2. Installation conditions

### 2.3. Plumbing installations

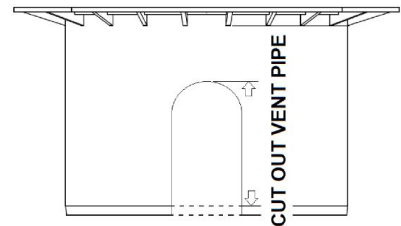
#### 2.3.1. Positioning of inlet and outlet

Positioning of the inlet and outlet lines varies for each series and are detailed in section 4. Technical Data (the relevant DTS document is an appendix to this installation manual).

#### 2.3.2. Venting

The tank must be vented, unless exempted by a relevant regulation, considering:

- Inlet and outlet lines must be adequately vented.
- All plumbing and venting pipework connections need to be performed as per requirements of Water Services Licensing Regulations of relevant state and the latest versions of AS/NZS 3500.1 and AS/NZS 3500.2.
- If the telescopic shaft falls in front of the vent opening, please make sure to cut out the section that obstructs the venting as shown below.
- For special requirements please consult the relevant authority.



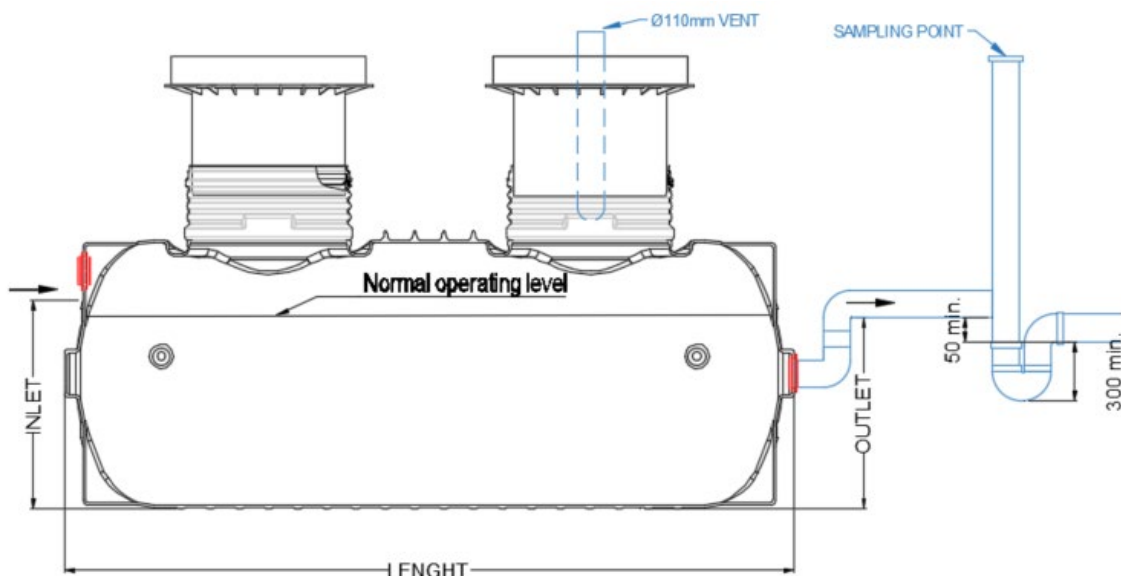
#### 2.3.3. Sampling point

For trade waste applications, the tank is to be installed with a trade waste sampling point.

- For special requirements please consult the relevant authority.

#### 2.3.4. Typical trade waste end-to-end product installation diagram

Typical drawing of site plumbing requirements and pipework / vent connections from the tank to a trade waste sampling point (TWSP). Positioning of the inlet and outlet lines varies for each series and are detailed in section 4. Technical Data (the relevant document is an appendix to this installation manual). The inlet and outlet lines must be installed in compliance with EN 12056 and EN 1825-2 or equivalent AS/NZS 3500.1 and AS/NZS 3500.2.



## 2. Installation conditions

### 2.4. Building site

The tank must only be installed in non-cohesive soil to slightly cohesive soil (cohesive soils are the clays or fine-grained soils). In case of deviating installation conditions, a ground assessment must be carried out to determine structural suitability and maximum occurring ground water levels.

The following issues must be clarified prior to installation:

- The structural suitability of the ground.
- Maximum occurring ground water levels and infiltration capacity of the ground.

#### 2.4.1. Earth cover

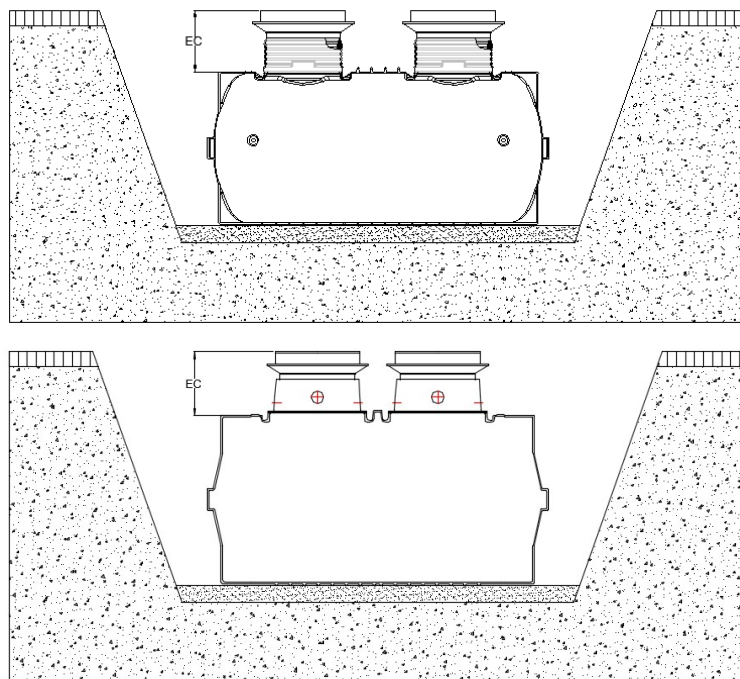
- Under pedestrian areas not subject to traffic load or high groundwater

Earth cover	2000l	3000l	4000l	5000l	8000l / 10000l
EC Min	380 mm	380 mm	380 mm	380 mm	380 mm
EC Max	1500 mm	1500 mm	1200 mm	1200 mm	1500 mm

- Under trafficable areas (class B and class D) or areas subject to high groundwater

Earth cover	2000l	3000l	4000l	5000l	8000l / 10000l
EC Min	700 mm	700 mm	700 mm	700 mm	700 mm
EC Max	1500 mm	1500 mm	1200 mm	1200 mm	1500 mm

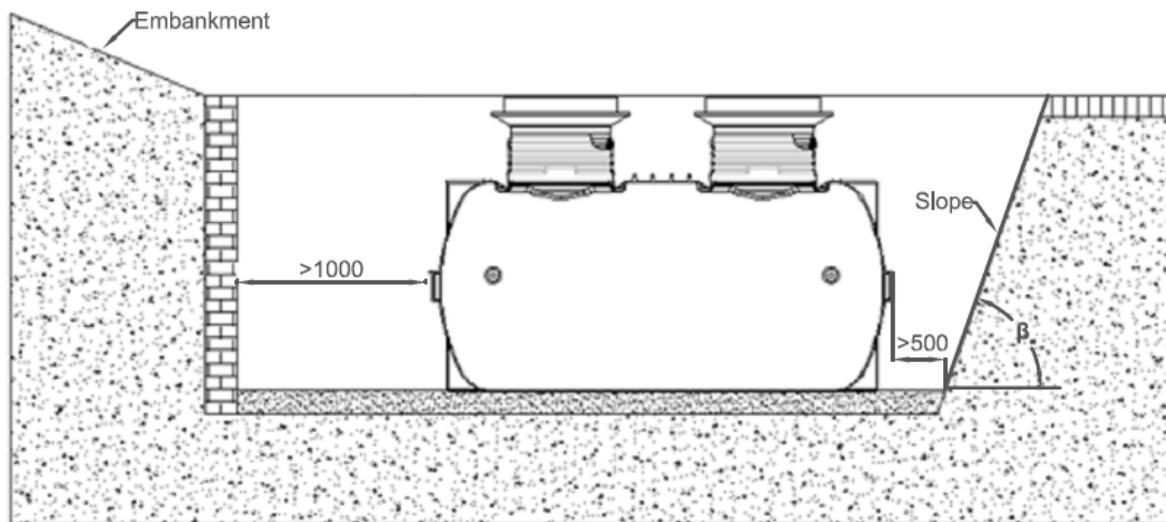
Note: Lint Arrestor Tanks has a minimum earth cover of 1025 mm due to lint trap components.



## 2. Installation conditions

### 2.4.2. Site embankments, fixed structures clearances, and excavation slope

The building site must be horizontally even and must provide adequate load-bearing capacity. The clearance to fixed structures must be at least 1000 mm. If the tank is in proximity (less than 5 m) to a mound or embankment (greater than 5°), a statically calculated retaining wall must be built to absorb the active earth pressure. If there is no embankment on site or if its more than 5m away from the excavation pit, a slope with the angle  $\beta$  must be applied according to the following table.

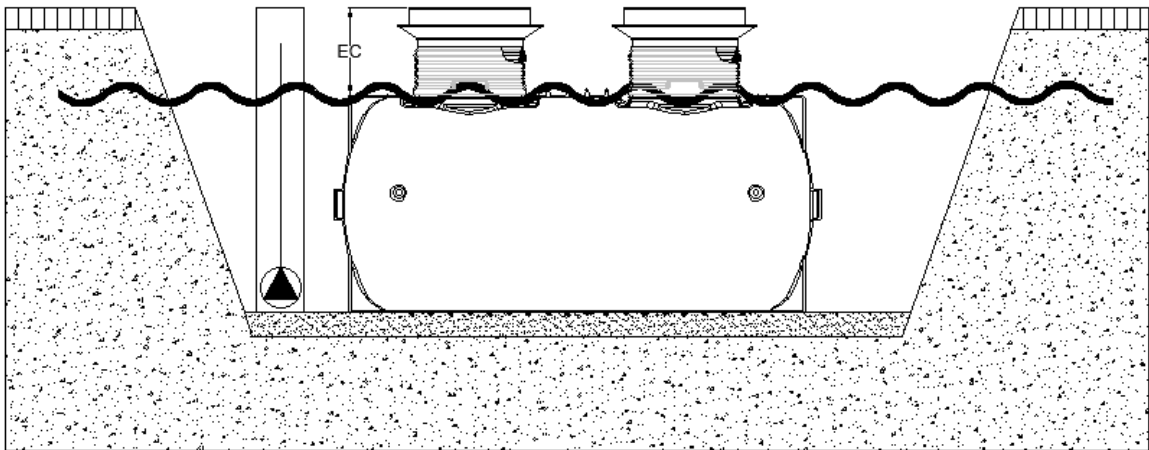


Soil type	Required slope $\beta$ angle
Non-cohesive or soft, cohesive soil	$\leq 45^\circ$
→ If tank must be suitable for car traffic	$\leq 50^\circ$
Stiff or semi-firm, cohesive soil	$\leq 60^\circ$
Rock	$\leq 80^\circ$

### 2.4.3. Groundwater and cohesive soil (e.g., clay soil)

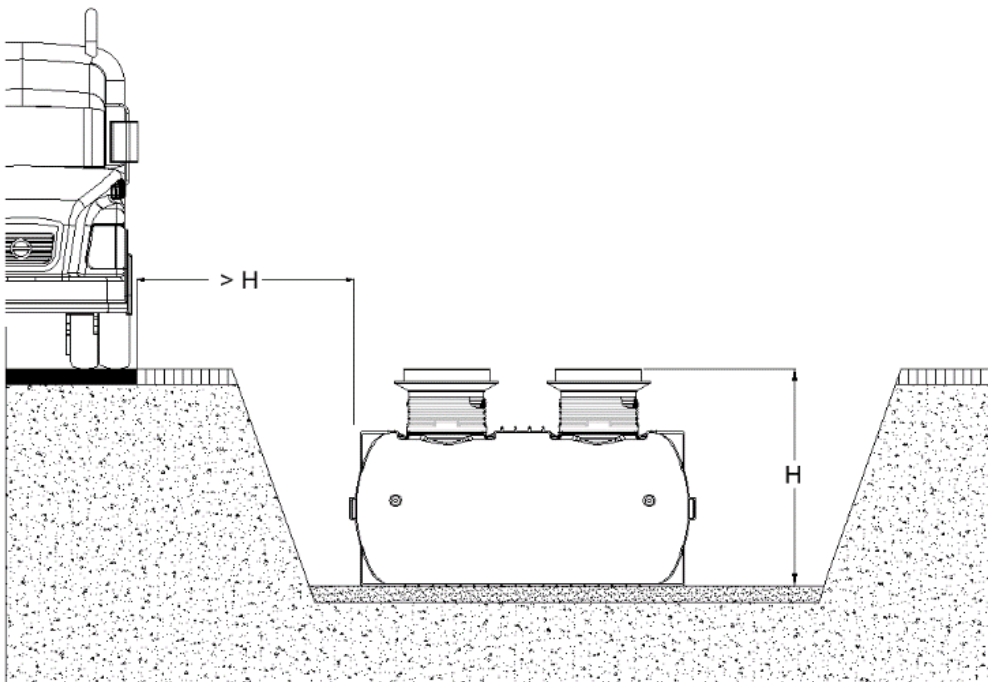
If the groundwater levels exceed the shoulder of the tank (and for 8,000 L and 10,000 L tanks, the limit is 1500mm from the bottom), even if only occasionally, it must be drained. The drainage line may end up in a vertically installed DN 300 pipe, equipped with a submersible pressure pump that drains the excess water. The pump must be inspected at regular intervals.

## 2. Installation conditions



### 2.4.4. Requirements for Class A installations (AS 3996)

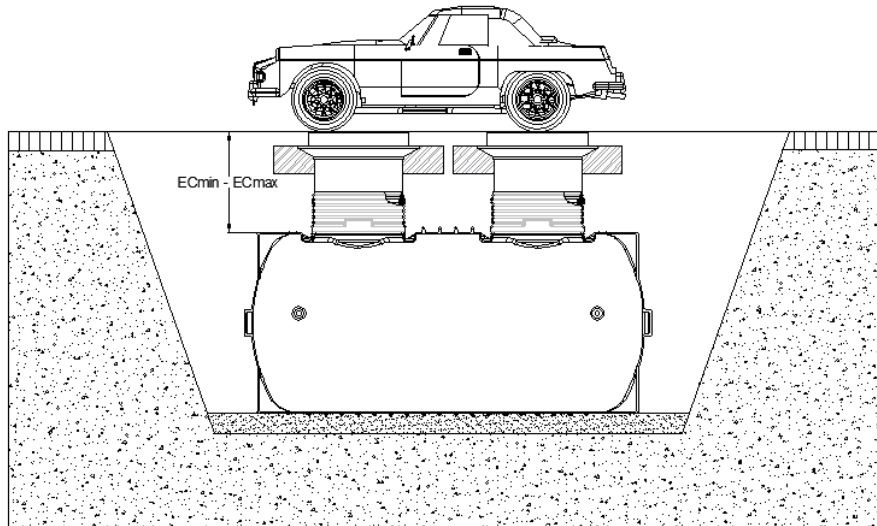
If there is no car traffic over the tank area and no-load distribution plate is installed, the clearance to the passable areas must correspond with the building pit depth. In reference to this, please see section 3.4.1.



### 2.4.5. Requirements for Class B installations (AS 3996)

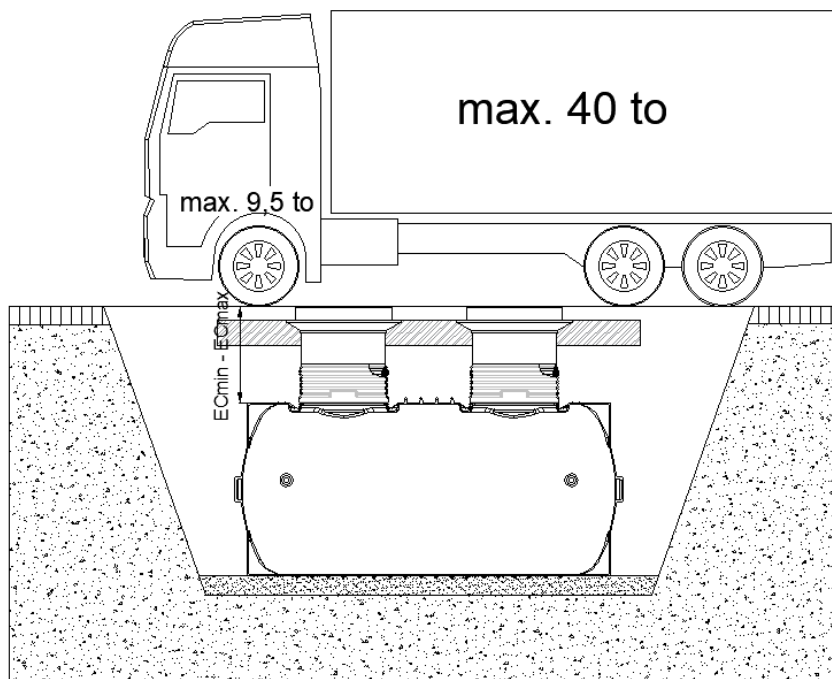
In case of car traffic, an appropriate cover according to AS 3996 class B must be used. In addition, the lid must be installed with a concrete collar. In reference to this, please see section 3.4.2.

## 2. Installation conditions



### 2.4.6. Requirements for Class D installations (AS 3996)

In case of heavy truck traffic, a appropriate cover according to AS 3996 class D must be used. In addition, a load distribution plate must be provided on site. In reference to this, please see section 3.4.3.

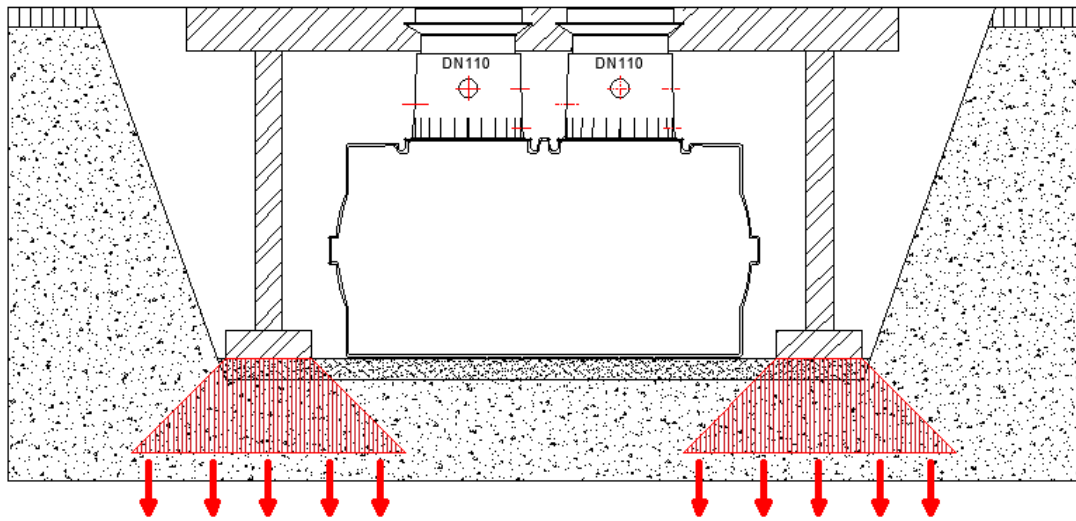


### 2.4.7. Requirements for Class E and G

Higher load classes are generally possible when a self-supporting concrete bridge is constructed from reinforced concrete. The concrete bridge must have foundations that do not transfer loads to the tank. Additionally, the concrete bridge must be dimensioned large enough to avoid transferring lateral traffic loads to the tank.



## 2. Installation conditions



## 3. Assembly and Installation

### 3. Assembly and Installation

#### 3.1. Excavation

To leave adequate workspace, the ground surface of the building pit must exceed the tank dimensions by 500 mm on each side. The depth of the pit must be dimensioned, so that the installation complies with the minimum and maximum earth cover. A layer of a least 150 mm thickness of compact grounded gravel (grain size between 8mm to 16 mm) must be laid down as a substructure. In reference to these installation conditions, please see section 2.4.

#### 3.2. Positioning of the tank

The tank installation must be shock-proof and lifted by adequate equipment into the prepared pit. The tank must be lifted completely empty, without dome, shaft, and cover.

GRAF provides the sling to be used for unloading. The sling is supplied in a length that allows the tanks to be around 1.5m away from lifting hook. Please ensure the sling is fed through a rib so the tank is securely lifted.



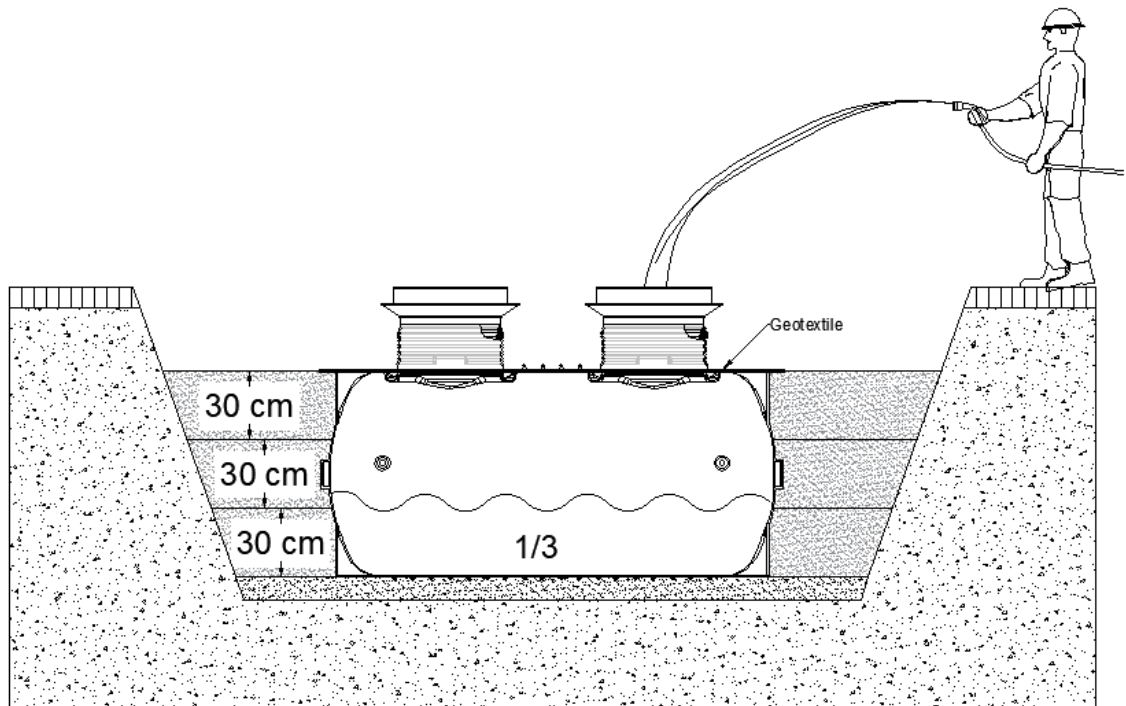
Please consult dimensions and weight available in section 4. Technical Data attached while planning unloading.

The tank must be positioned in the pit in such a way that the inlet is aligned along the axis of the inlet line. Positioning of the inlet and outlet lines in section 4. Technical Data.

#### 3.3. Backfill instructions

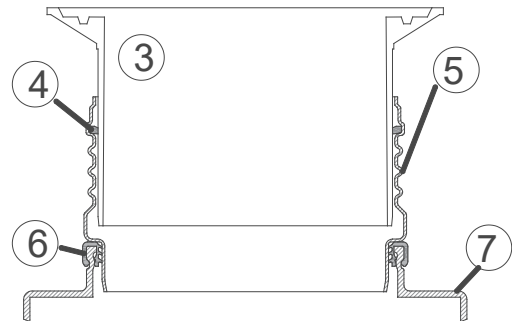
To avoid deformations of the tanks, the filling of the tank and the filling of the building pit should be carried out simultaneously. Before filling the excavation, the tank will be filled up to 1/3; then the excavation is filled with layers of a maximum of 30 cm (grounded gravels with a maximum grain size of 8/16) up to the tank's upper edge. The individual layers must be compacted well (manual compactor). To prevent damage to the tank, the use of mechanical compacting equipment is not permitted at any time. A geotextile is recommended to protect the tank from backfill material.

### 3. Assembly and Installation



#### 3.3.1. Installation of adaptors and GRAF tank dome

The profile gasket (6) must be mounted onto the tank opening (7), and the tank dome (5) inserted as far as the stop. Before inserting the tank dome, the seal must be lubricated. The seal (4) is mounted into the tank dome and the relevant telescopic shaft (3) is inserted as instructed in the next section.



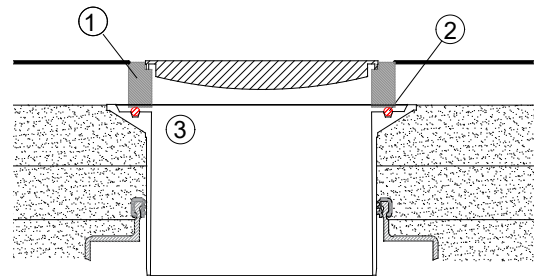
#### 3.4. Installation of the shaft structures

Only GRAF shafts and GRAF lid covers are allowed.

### 3. Assembly and Installation

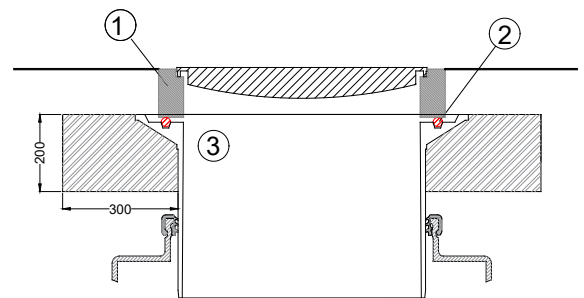
#### 3.4.1. Class A loads installations

To prevent transferring loads onto the tank, the non-trafficable telescope shaft is backfilled with layers of grounded gravels (maximum grain size 8/16) and compacted evenly. Subsequently a tubular seal is inserted into the groove of the non-trafficable telescopic shaft (3). Finally, the pedestrian cover lid (1) is placed and bolted. This lid should not be submitted to more than 150kg.



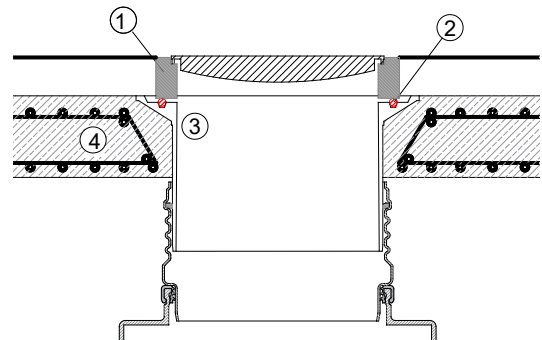
#### 3.4.2. Class B loads installations

If the tank is installed underneath an area with car traffic (class B), concrete underlay (property class N25) must be placed in the collar area around the trafficable telescopic shaft. The circumference of the concrete layer to be filled in must be at least 300 mm wide and approx. 200 mm high. Afterwards, a tubular seal (2) is inserted into the groove of the trafficable telescopic shaft (3). At last, the class B cover lid (1) is placed. This lid should not be submitted to loads higher than the traffic of licensed vehicles up to 3,500kg.



#### 3.4.3. Class D loads installations

A load distribution plate (property class N40) must be installed around the trafficable telescopic shaft for installations in areas with heavy load traffic (class D). An adequately compacted, anti-capillary and draining base course must be installed underneath the load distribution plate. Afterwards, a tubular seal (2) is inserted into the groove of the telescopic shaft (3). At last, the class D cover lid (1) is placed. This lid should not be submitted to loads higher than the traffic of licensed vehicles up to 8,000kg.



### 3. Assembly and Installation

#### 3.5. Commissioning

Each tank is delivered with an identification plate pre-installed in the shaft, to be seen by lifting the lid. If there isn't one in place already, please contact GRAF Australia immediately.



Once the tank has been installed, the entire system must be checked for leaks in accordance with the requirements from the relevant authorities. To do this, the inlet and outlets are sealed watertight and the whole system is filled with clean water. If full baffles are present, attention for the volume increment be evenly across the tank. A qualified person<sup>1</sup> must then check whether the tank, all joints and all pipe connections are watertight. Confirmation of watertightness should be recorded by the person carrying out the test. This should be arranged by the building project manager or the construction company.

In the event that the system is not watertight GRAF must be informed immediately; any complaints regarding watertightness made at a later date shall be disregarded.

Once it has been confirmed that the system is watertight, the water is drained or pumped out until it only reaches to the lower lip of the outlet. The remaining water must be retained as the initial filling. Should it become necessary to pump the tank out completely, the plant must be filled with clean water before commissioning until no further rise in the water level can be discerned.

The access must be covered by an original GRAF lid cover as per installation requirements.

It is necessary to fully observe operational manual for additional checks before starting operations.

Commissioning must be documented in a commissioning report. Any claims under the warranty can only be made if the completed commissioning report is provided.

<sup>1</sup> Qualified persons are employees of independent companies, appraisers or other institutions who have the proven necessary expertise for the operation, maintenance and testing of systems to the extent mentioned here, as well as having the necessary technical equipment for testing systems. In isolated cases and in large companies the tests may be carried out by internal, independent qualified persons from the operating company who are not bound by instructions in relation to their area of responsibility and who hold equivalent qualifications and have the appropriate equipment.