

Assembly and Installation Instructions

Trade Waste Range 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 be voided. 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. It is necessary to also fully observe the relevant operational manual for additional checks before starting operations.

Table of Contents

1. Safety notice	2
2. Installation conditions	3
2.1. Installation basics	3
2.2. Requirements for the installation site	3
2.3. Plumbing installations	4
2.3.1. Positioning of inlet and outlet	4
2.3.2. Venting	4
2.3.3. Sampling point	4
2.4. Building site	5
2.4.1. Earth cover	5
2.4.2. Site embankments, clearances, and excavation	6
2.4.3. Groundwater and cohesive soil (e.g., clay soil)	7
2.4.4. Requirements for Class A installations (AS 3996)	7
2.4.5. Requirements for Class B installations (AS 3996)	7
2.4.6. Requirements for Class D installations (AS 3996)	8
2.4.7. Requirements for Class E and G	8
3. Assembly and Installation	9
3.1. Excavation	9
3.2. Positioning of the tank	9
3.3. Backfill instructions	9
3.4. Installation of potential extension riser and GRAF tank dome	10
3.5. Installation of the shaft structures	11
3.5.1. Class A loads installations	11
3.5.2. Class B loads installations	11
3.5.3. Class D loads installations	11
3.6. Commissioning	12

1. Safety notice

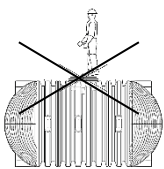
1. Safety notice

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.



Do not walk on the tank and on the protection cover. The protection cover mounted at delivery only serves against rain and dust during transport and until the actual intended cover can be safely installed.



Only original GRAF covers or covers approved in writing by GRAF must be used. Please confirm that all requirements were fulfilled prior lid installation (earth cover, venting, sampling point, etc).

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.

Drawings and lifting instructions must be observed while planning unloading from transport provider and lifting to excavation trench. Servicing and associated works should also be planned beforehand, among other reasons, to provide accessibility for cleaning vehicles and ensure correct operation.

Please consult relevant authority prior to installation.

3. Assembly and Installation

2. Installation conditions

These installation conditions comprise all Super Compact (SC) model tanks 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 the product drawings.

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.
- Procedures and results of the Commissioning should be documented according to Commission section of this manual.
- 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.

3. Assembly and Installation

2.3. Plumbing installations

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.

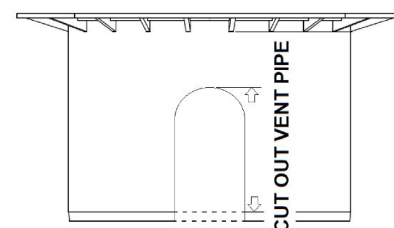
2.3.1. Positioning of inlet and outlet

Positioning of the inlet and outlet lines varies for each series and are detailed in product drawings.

2.3.2. Venting

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

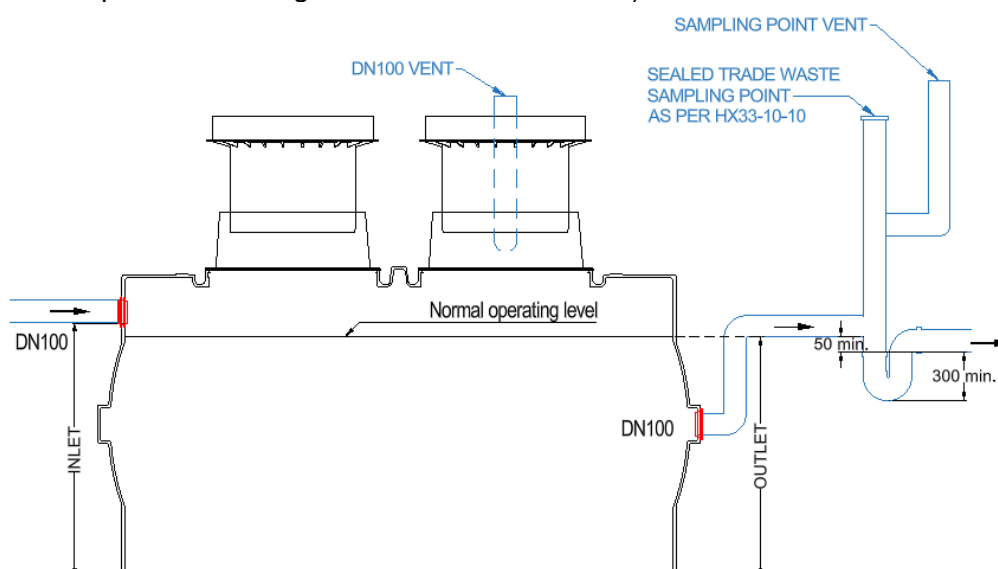
- Inlet and outlet lines must be adequately vented.
- If the telescopic shaft falls in front of the vent opening, please make sure to cut out the section that obstructs the venting as shown.
- For special requirements please consult the relevant authority.



2.3.3. Sampling point

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

- Typical trade waste product installation (positioning of the inlet and outlet lines varies for each product drawing and it must be observed):



- Consult the relevant authority to confirm design requirements. When not specified by relevant authority, please consult guidelines available in Water Corporation webpage:
 - Trade Waste Sampling Point (HX33-11-30) drawing, and
 - Sealed Trade Waste Sampling Points (HX33-10-10) drawing.

3. Assembly and Installation

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

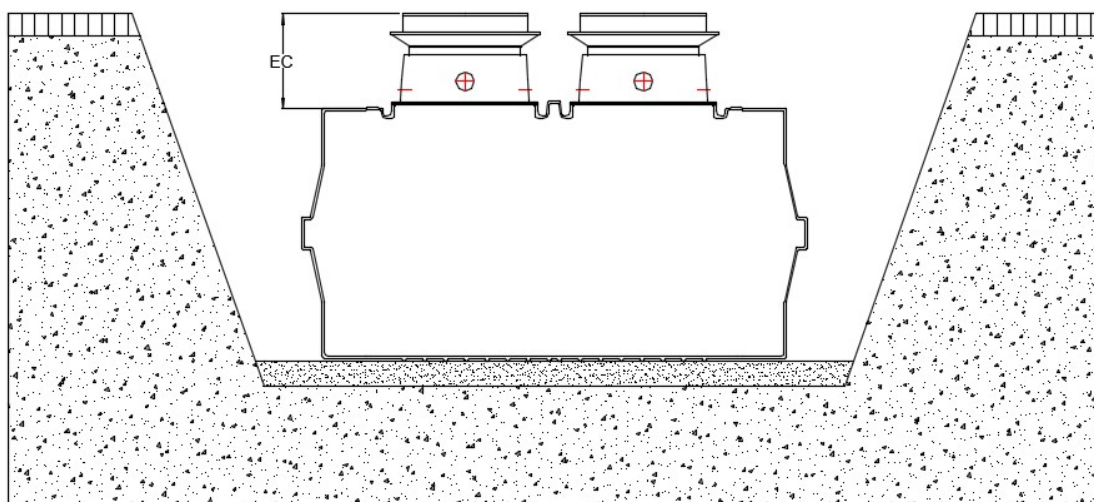
- Under pedestrian areas not subject to traffic load or high groundwater

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

For the Lint Arrestor product specifically, Lint Arrestor Tanks has a minimum earth cover of 1025 mm due to lint trap components.



The earth cover dimensions referred by this manual are measurements from the shoulder of the tank until the cover level as illustrated above.

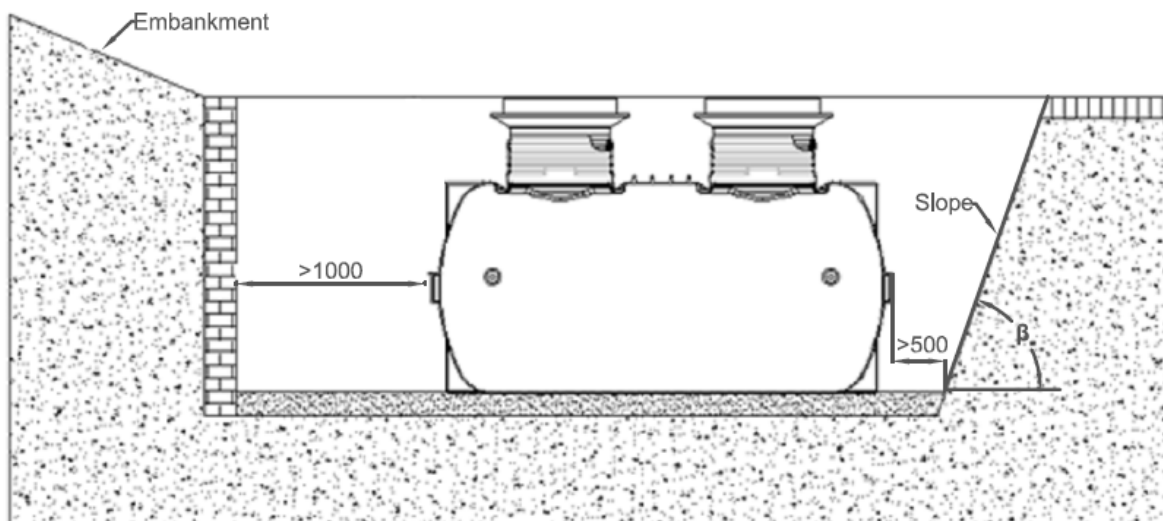
3. Assembly and Installation

2.4.2. Site embankments, clearances, and excavation

The building site must be horizontally even and must provide adequate load-bearing capacity. 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. To leave adequate workspace, the ground surface of the building pit must exceed the tank dimensions by 500 mm minimum, and further allowance is required for the trade waste sampling point. The depth of the pit must be dimensioned so that the installation complies with the minimum and maximum earth cover. 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 calculated retaining wall must be built to absorb the side loads. If there is no embankment on site or if its more than 5m away from the excavation pit, a slope with the angle β must be applied according to the following table, unless a more restrictive requirement applies to the site.

Soil type	Required slope β 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	$\leq 80^\circ$

The illustration bellow shows an excavation pit in proximity of an embankment and clarifies the reference point for angle β .

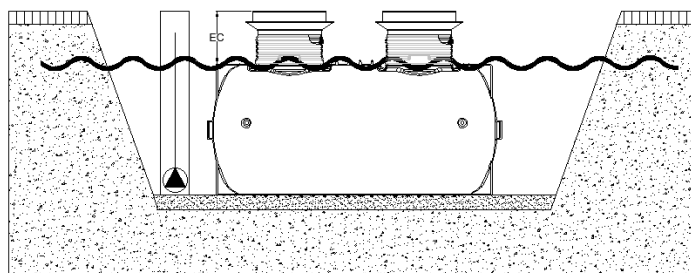


If the site is subjected to groundwater, a larger pit is required to accommodate the drainage solution. Further installation requirements regarding groundwater are presented in the next section.

3. Assembly and Installation

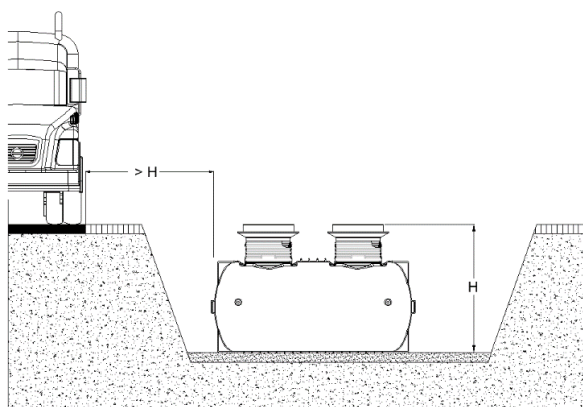
2.4.3. Groundwater and cohesive soil (e.g., clay soil)

If the groundwater levels exceed the shoulder of the tank (and for 8,000 L and 10,000 L tanks, the limit is instead 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. The illustration clarifies what is meant by shoulder of the tank.



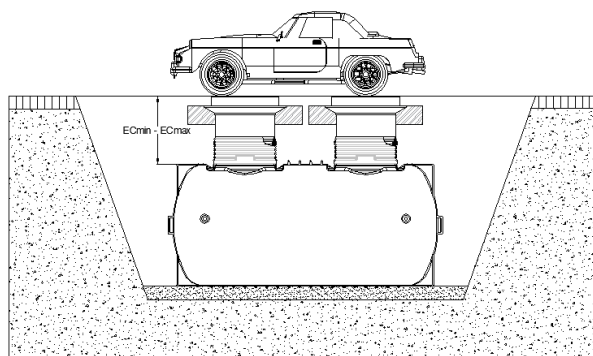
2.4.4. Requirements for Class A installations (AS 3996)

If there is no traffic over the tank area, the clearance to the trafficable areas must be equal or greater than the building pit depth. Further clearances might be applicable depending on site conditions. Class A cover installation is depicted in section 3.4.1.



2.4.5. Requirements for Class B installations (AS 3996)

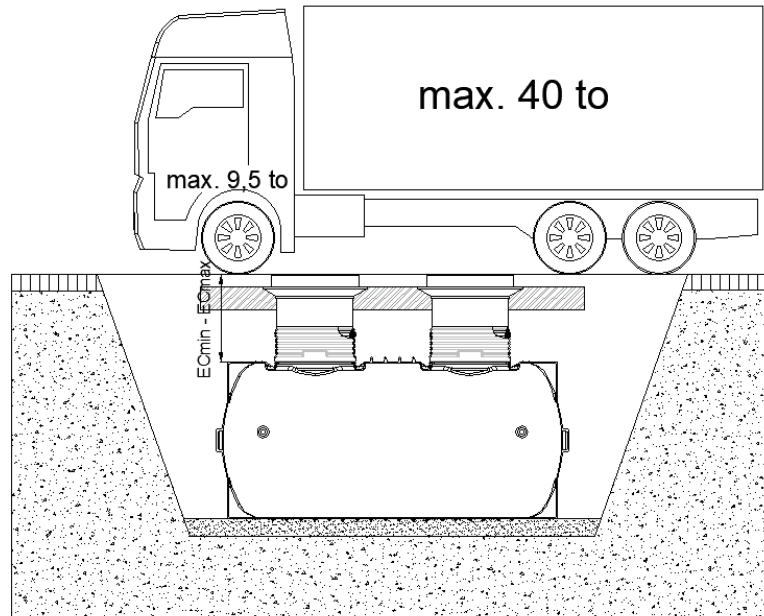
In case of car traffic, an appropriate cover according to AS 3996 class B must be used. In addition, the lid must be installed with a concrete collar. In reference to this, please see section 3.4.2.



3. Assembly and Installation

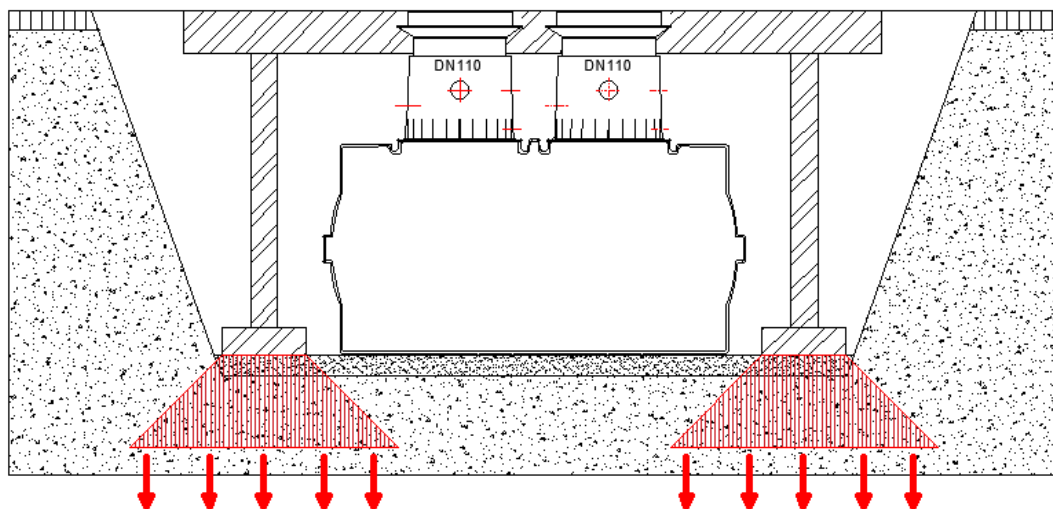
2.4.6. Requirements for Class D installations (AS 3996)

In case of heavy truck traffic, an 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 loads

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. The lid cover and its installation for these loads would also need to be specified by the assigned engineer.



3. Assembly and Installation

3. Assembly and Installation

3.1. Excavation

The excavation must comply with all requirements investigated while assessing the installation conditions specified on section 2.4.2. Site embankments, clearances, and excavation. The excavation work, in itself, is out of GRAF scope so, ultimately, the required workspace in the excavation pit, trenching procedure, and hazard controls should be aligned with the Safe Work Method Statement (SWMS) put in place for the specific installation.

The installation should only be conducted given that the excavation pit is deemed safe for the works to be performed and sufficiently sized to cover all conditions specified, otherwise the tank cannot be installed.

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 to prevent risk of falling objects.

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.



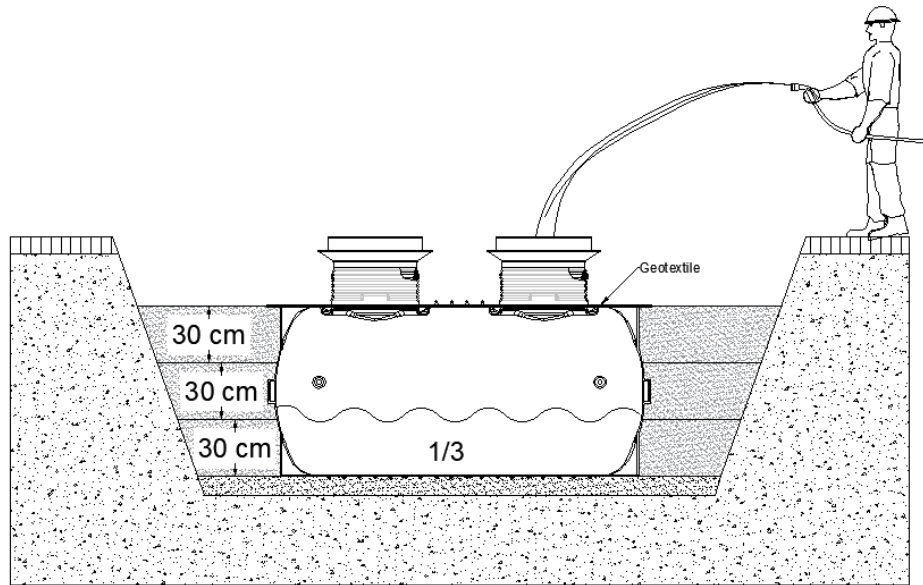
Please consult dimensions and weight of selected product in its drawing while planning unloading.

The tank must be positioned in the pit in such a way that the inlet is aligned along the axis of the inlet line and as per the instructions in section 2.3. Plumbing installations.

3.3. Backfill instructions

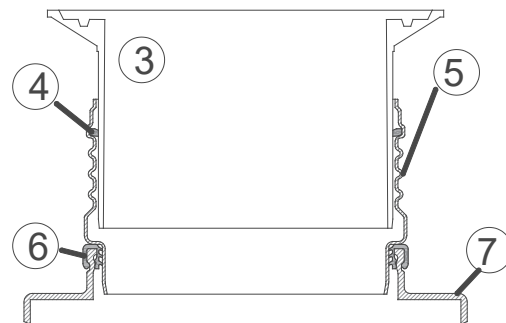
To avoid deformations of the tanks, the filling of the tank and the filling of the building pit should be carried out simultaneously. Before filling the excavation, the tank will be filled up to 1/3; then the excavation is filled with layers of a maximum of 30 cm (grounded gravels with a maximum grain 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. A geotextile is recommended to protect the tank from the backfill material.

3. Assembly and Installation

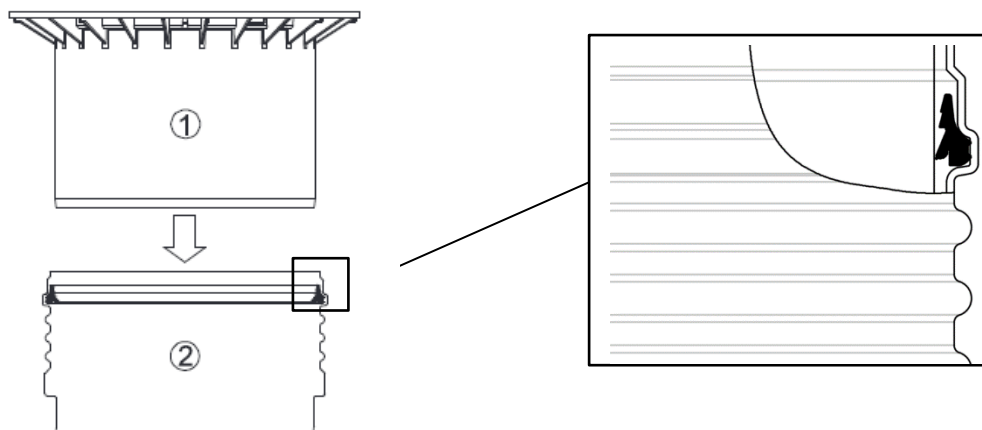


3.4. Installation of potential extension riser and GRAF tank dome

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.



For deeper installations, within the applicable installation window, extension risers must be used. To insert the riser ②, soft soap is needed. The profile seal is inserted into the highest groove of the extension riser and greased generously. Afterwards push the telescopic shaft ① into the riser and adapt it to the planned area surface.



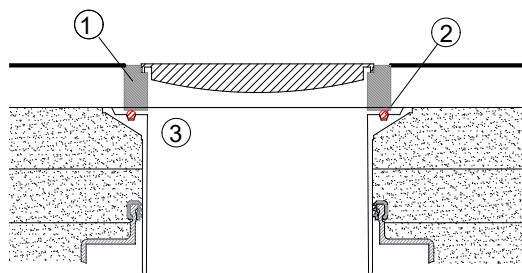
3. Assembly and Installation

3.5. Installation of the shaft structures

Please confirm that all requirements were fulfilled prior lid installation (earth cover, venting, sampling point, etc). The rain protection mounted for transport is then replaced by the permanent lid according to one of the following installation instructions depending on the applicable load which the tank will be subjected to.

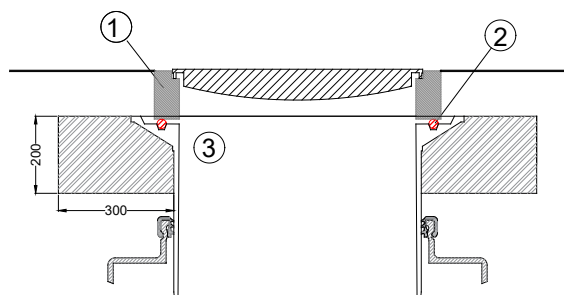
3.5.1. Class A loads installations

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 ② 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.



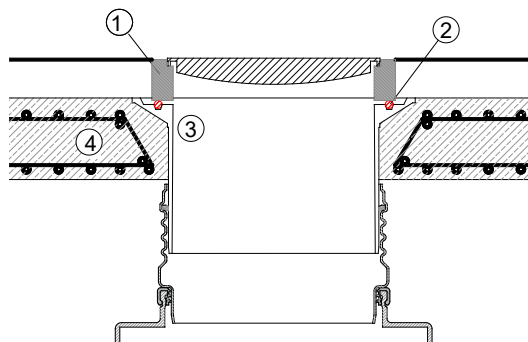
3.5.2. Class B loads installations

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.



3.5.3. 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

3.6. 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 person¹ 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.

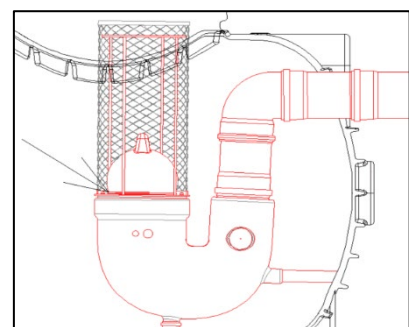
In the event that the system is not watertight, GRAF must be notified immediately. Any claims under the warranty can only be made if the completed commissioning report is provided signed by a qualified person. Any issues relating to watertightness identified after the installation shall be deemed the responsibility of the customer.

Once it has been confirmed that the system is watertight, **the remaining water up to the outlet pipework line must be retained as the initial filling**. Should it become necessary to pump out the tank contents, the tank must be filled with clean water 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 also fully observe operational manual for additional checks before starting operations.

For the Oil Water Separator product specifically, fill the U-bend: while filling the tank with water, once the float is sufficiently submerged, gently lift the float to open the device allowing the float to float freely.



Fill U-bend: while filling the tank with water, once the float is sufficiently submerged, gently lift the float to open the device allowing the float to float freely.

¹ Qualified persons are external experts or appraisers with the proven expertise and equipment to operate, maintain, and test systems. In select cases, large companies may use internal experts who hold equivalent qualifications, possess the right equipment, and can act independently regarding their testing duties.