

## Installation and maintenance instructions for Li-Lo XL/XXL Rainwater Underground Tank

### DN 110:

7500 L	Order No. 390828
10000 L	Order No. 390822
15000 L	Order No. 390823
20000 L	Order No. 391810
25000 L	Order No. 391811



The points described in these instructions must be observed under all circumstances. All warranty rights are invalidated in the event of non-observance. Separate installation instructions are enclosed in the transportation packaging for all additional articles purchased from GARANTIA.

Missing instructions must be requested from us immediately.

The tank must be checked for any damage prior to insertion into the trench under all circumstances.

Missing instructions can be downloaded on <https://www.GARANTIA.com/en-au/> or can be requested from GARANTIA.

### Table of contents

<b>1. GENERAL NOTES</b>	<b>2</b>
1.1 Safety notice	2
<b>2. INSTALLATION CONDITIONS</b>	<b>3</b>
<b>3. TECHNICAL DATA</b>	<b>4</b>
3.1 Overview connection option DN 110	4
3.2 Overview tanks Li-Lo XL	4
<b>4. TANK STRUCTURE</b>	<b>5</b>
<b>5. INSTALLATION AND ASSEMBLY</b>	<b>5</b>
5.1 Construction site	6
5.2 Trench	6
5.3 Insertion and filling	8
5.4 Routing connections	8
<b>6. ASSEMBLING THE TANK DOME TELESCOPIC DOME SHAFT</b>	<b>9</b>
6.1 Assembling the tank	9
6.2 Assembling the dome shaft	9
6.3 Assembly of PE Cover (Class A)	9
6.4 Assembly of Car Module (Class B)	10
6.5 Assembly of Truck Module (Class D)	10
<b>7. ASSEMBLY OF THE ADAPTER</b>	<b>10</b>
7.1 Assembling the extension	10
<b>8. INSPECTION AND SERVICING</b>	<b>11</b>

## 1. General notes

### 1.1 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.



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



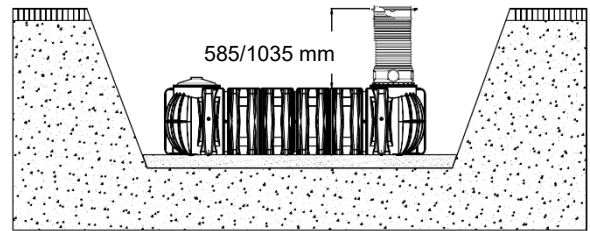
The rain protection mounted at delivery only serves as packaging for the transport only. It must be removed upon delivery and replaced by an appropriate cover (telescopic dome shaft with respective cover). Only original GARANTIA covers or covers approved in writing by GARANTIA must be used.

All GARANTIA manufactured tanks comply with AS/NZS 1546.1:2008 and are subjected to our quality system which is QMS:ISO 9001:2015 certified.

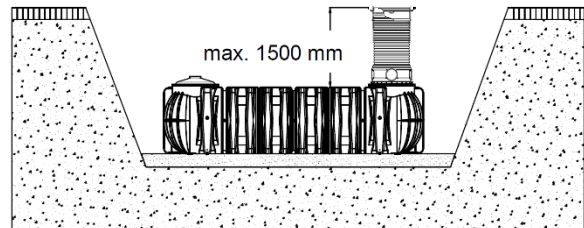
GARANTIA offers a wide range of accessory parts which are precisely coordinated and can be used to complete systems. The use of different accessory parts can lead to impact the functionality of the system, and to void liability for consequential damages.

## 2. Installation conditions

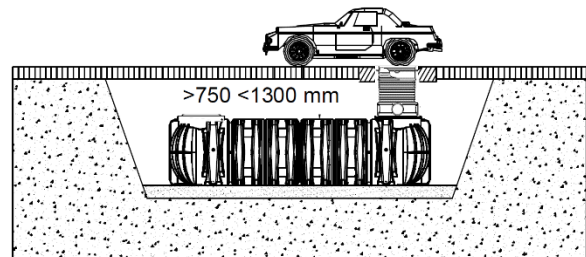
Possible coverage heights from cutting dome shaft.



In areas with pedestrian loads only (class A installations), extension riser may be used for a maximum coverage height of 1500mm.

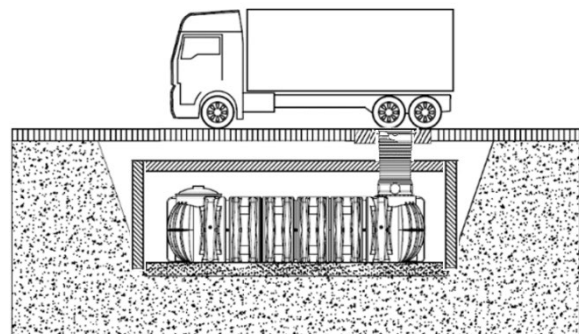


In areas driven by vehicles up to 3.5 tonnes (class B installations), cover heights may be from 750mm to 1300mm.



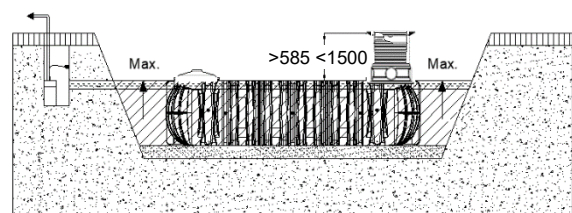
In areas driven by heavy duty vehicles (class D installations), cover heights may be maximum 500mm.

**Please note:** a self-supporting steel-reinforced concrete plate must be installed.



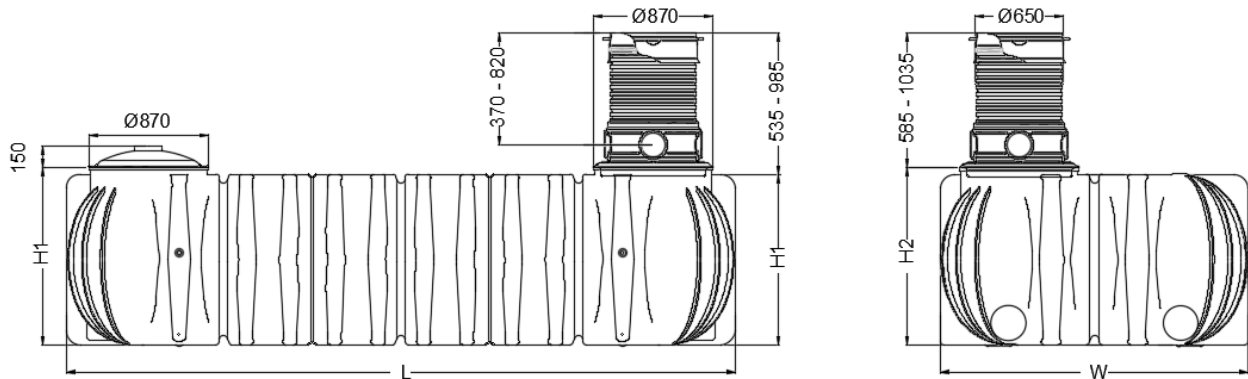
In areas where groundwater is of concern, (additionally to the requirements specified above) the permissible immersion depth for the tank in up to the shoulder of the tank.

(not under passable areas)



### 3. Technical data

#### 3.1 Overview connection option DN 110

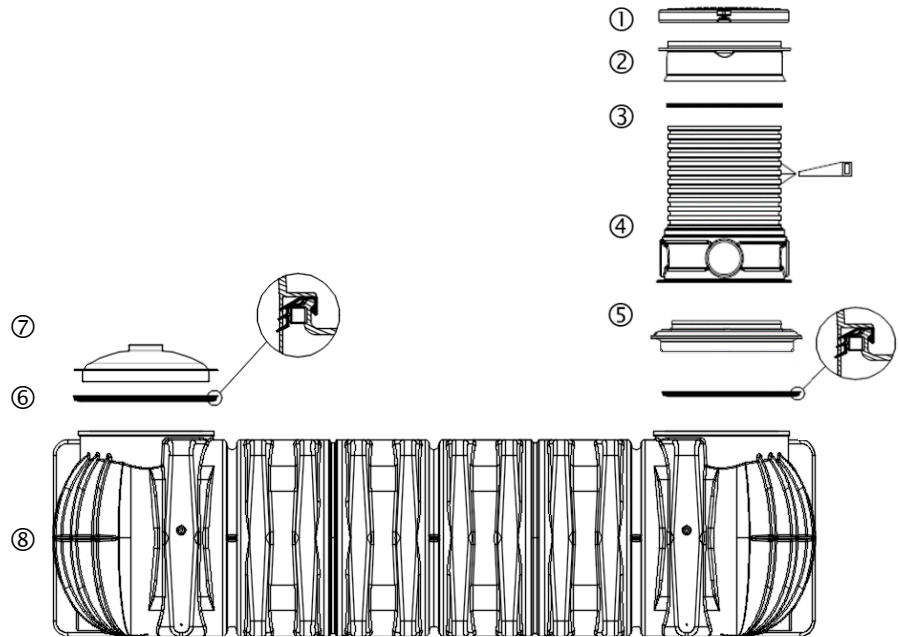


#### 3.2 Overview tanks Li-Lo XL

Tank	7500 L	10000 L	15000 L
Art. No.	TBA	TBA	TBA
Weight	390 kg	460 kg	710 kg
L	3600 mm	4900 mm	7500 mm
W	2250 mm	2250 mm	2250 mm
H <sub>1</sub>	1250 mm	1250 mm	1250 mm
H <sub>2</sub>	1300 mm	1300 mm	1300 mm
H <sub>tot</sub> *	2285 mm	2285 mm	2285 mm

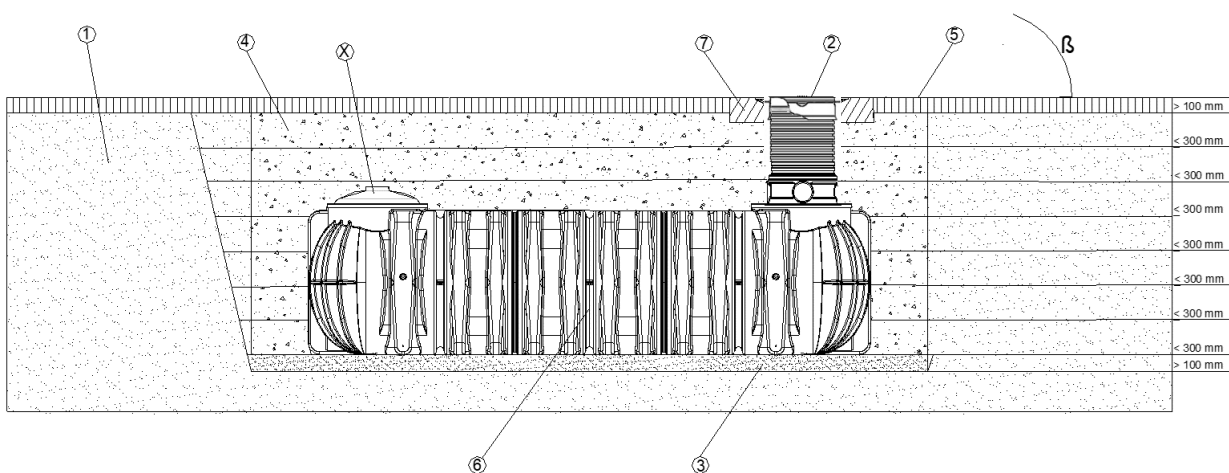
## 4. Tank structure

- ① GARANTIA Cover
- ② GARANTIA Access (can be inclined by 5°)
- ③ Profile seal
- ④ Li-Lo XL dome (can be rotated by 360°)
- ⑤ Li-Lo XL adaptor
- ⑥ Tank seal
- ⑦ Tank access plug
- ⑧ Li-Lo XL tank



## 5. Installation and assembly

- ① Subsoil
- ⑤ Covering layer
- ② GARANTIA Cover
- ⑥ Li-Lo XL Rainwater Underground Tank
- ③ Compacted foundation
- ⑦ Concrete layer for passable surfaces
- ④ Surrounding (round-grained gravel, max. grain size 8/16)



## 5. Installation and assembly (continuation)

### 5.1 Construction site

Under all circumstances, the following points must be clarified prior to installation:

- The structural suitability of the ground
- Maximum groundwater levels which occur and drainage capability of the subsoil
- Types of loads which occur

An expert ground report should be requested from the local planning authority to determine the physical characteristics of the subsoil.

### 5.2 Trench

To ensure that sufficient space is available for working, the base area of the trench must exceed the dimensions of the tank by > 100 mm on each side; the distance from solid constructions must be at least 1000 mm.

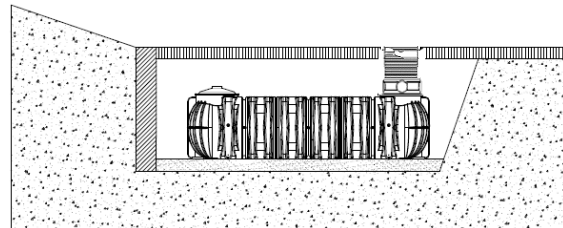
If the depth of the trench is > 1250 mm an embankment must be designed. The construction site must be horizontal and plane and must guarantee sufficient load-bearing capacity.

The depth of the trench must be dimensioned so that the max. earth coverage (see section 2 – Installation Conditions) above the tank is not exceeded. To use the system throughout the entire year, it is necessary to install the tank and those parts of the system which conduct water in a frost-free area.

A layer of compacted, round-grain gravel (grain size 8/16, thickness approx. 100 - 150 mm) is applied as the foundation.

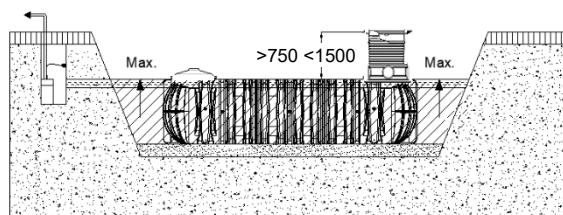
#### 5.2.1 Embankment

On installation of the tank in the immediate vicinity (< 5 m) of an embankment, a statically calculated supporting wall must be erected to absorb the soil pressure. The wall must exceed the dimensions of the tank by at least 500 mm in all directions and must be located at least 1000 mm away from the tank.



#### 5.2.2 Groundwater and cohesive (water-impermeable) soils (e.g. clay soil)

If it is anticipated that the tanks will be immersed deeper into the groundwater than its max. immersion depth (see table), sufficient dissipation must be ensured. Dissipation of the drainage water (e.g. via an annular drainage system) is recommended in the case of cohesive, water-impermeable soils.



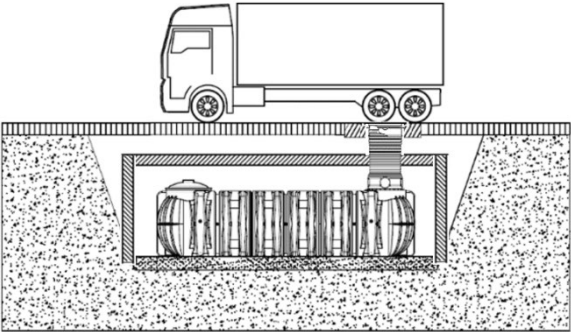
Tank	7500 L	10000 L	15000 L
max. immersion depth	1250 mm	1250 mm	1250 mm

## 5. Installation and assembly

### 5.2.3 Installation for supporting heavy duties vehicles

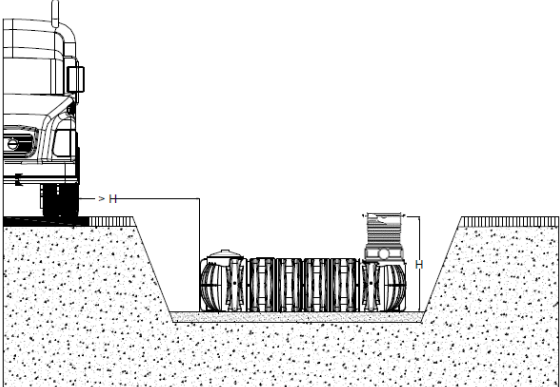
The shaft can only be driven over by heavy duty vehicles in conjunction with a self-supporting, iron-reinforced concrete plate. To ensure that no additional forces or effects are transferred to the tanks, the dimensions and strength of the concrete plate must be statically calculated.

If you have any questions in this regard, please contact your GARANTIA-Team.



### 5.2.4 Installation adjacent to surfaces used by heavy duties vehicles

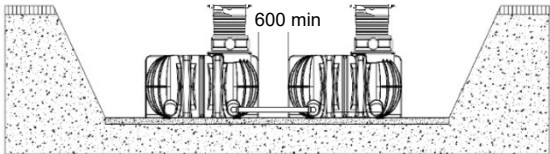
If the underground tanks are installed adjacent to surfaces which are used by heavy vehicles weighing over 3,5 t, the minimum distance away from these surfaces is at least the depth of the trench.



### 5.2.5 Connection of several tanks

Two or more tanks are connected via the assembly surfaces by means of GARANTIA special seals.

The apertures must be drilled to the corresponding size using GARANTIA special crown bit.



It must be ensured that the distance between the tanks is at least 600 mm. The pipes must project at least 200 mm into the tanks.

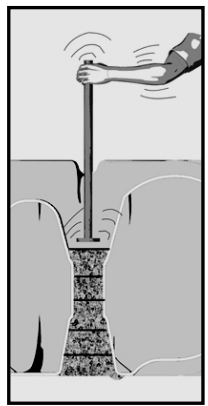
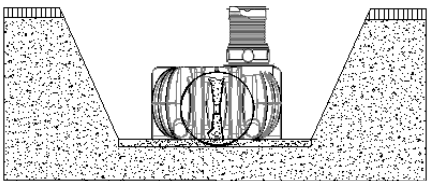
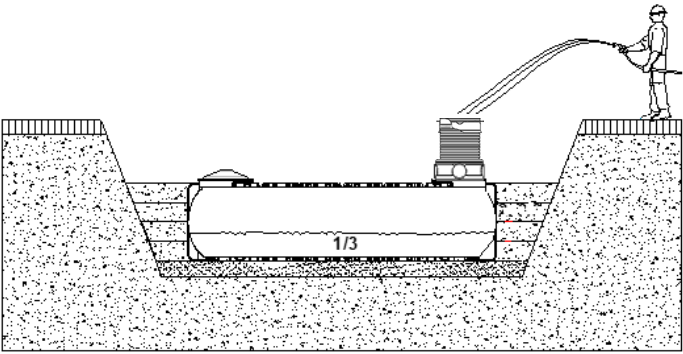
## 5. Installation and assembly

### 5.3 Insertion and filling

The tanks must be inserted, impact-free, into the prepared trench using suitable equipment. To avoid deformities, the tank is filled 1/3 with water before filling in the tank surrounding.

Afterwards the surrounding (round gravel, max. grain size 8/ 16) is then filled by max. 30 cm compacted layers.

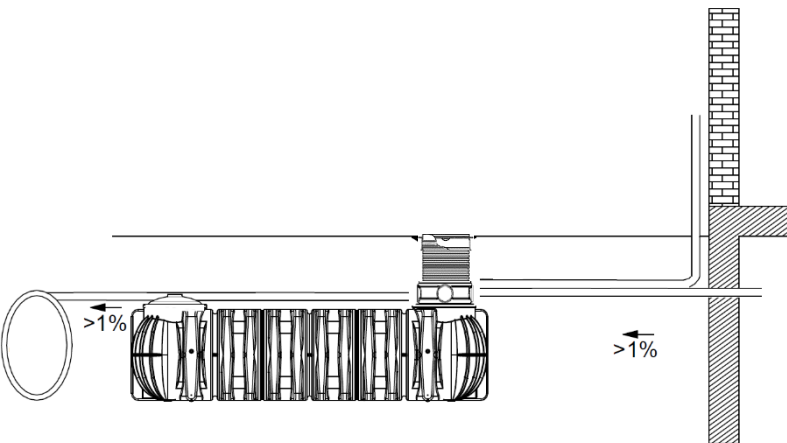
**The individual layers as well as the medial support column must be well-compacted (manual tamper).** Mechanical compaction machines must not be used under any circumstances as they create the risk of damaging the tank during compaction. The surrounding towards the trench must be at least 100 mm wide.



### 5.4 Routing connections

All feed and overflow pipes must be routed with a decline of at least 1% in the direction of flow (possible, subsequent settling must be taken into consideration in this case).

All suction, pressure and control lines must be routed in an empty pipe, which must be routed as straight as possible, without bending, to the tank with a decline. Necessary bends must be formed using 30° moulded sections.



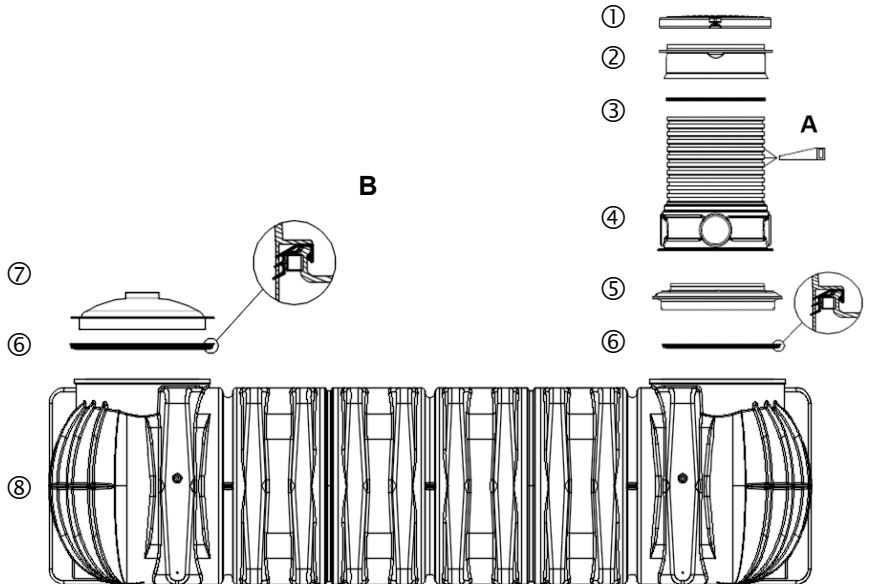
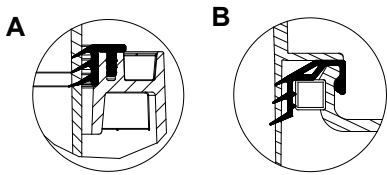
**Important:** The empty pipe must be connected to an aperture **above** the max. water level.



## 6. Assembling the tank dome telescopic dome shaft

### 6.1 Assembling the tank

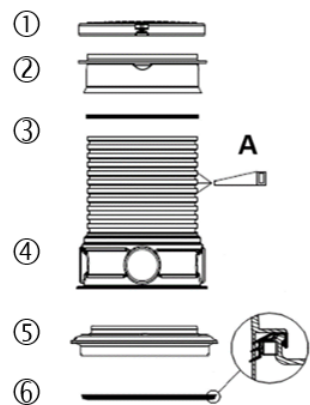
Prior assembly, the enclosed seal is locked onto the tank neck's profile "B". The tank dome is then locked to the tank neck. It is essential to make sure that the upper seal "A" (pre-assembled) is correctly installed.



### 6.2 Assembling the dome shaft

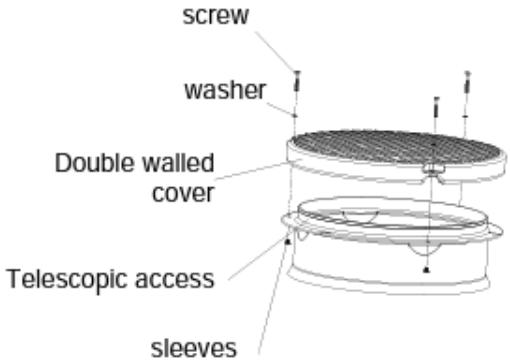
The dome shaft enables adaptation of the tank to given site surfaces with earth coverage of between 585 mm and 1050 mm. Tank dome (can be rotated by 360°).

For assembly purposes, the enclosed profile seal is inserted into the tank dome's sealing groove and is coated generously with soft soap (do not use mineral oil-based lubricants, as these attack the seal). The dome is then greased, inserted and aligned with the surface of the site.



### 6.3 Assembly of PE Cover (Class A)

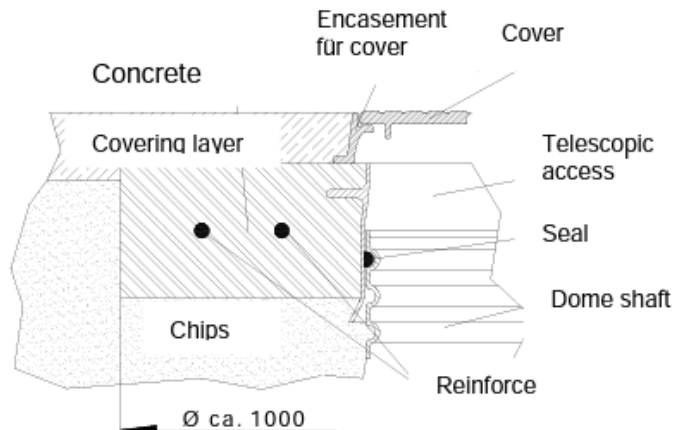
The PE Cover must remain locked (child proof) in position except when working in the tank. The three sleeves are guided and hammered from below into the holes of the telescopic attachment and screwed from above with 5 to 6 turns. Finally place the cover in position and screw into place so that it is child proof. The washers prevent the screws from cutting into plastic material of the cover.



## 6. Assembling the tank dome telescopic dome shaft (continuation)

### 6.1 Assembly of Car Module (Class B)

When the tank is installed in areas traversed by light traffic (max. total load 3.5 ton) the telescopic assembly must be embedded and supported by reinforced concrete (Load classification B25 = 250 Kg/m<sup>2</sup>). The concrete encasement must be uninterrupted, 300 mm (11.8 inch) wide and approximately 200 mm (7.9 inch) deep. Subsequently, the concrete frame as well as the cast iron cover (class B) supplied with the product are fitted. The earth covering above the tank must be not less than 700 mm (27.6 inch) and a maximum of 1000 mm (39.4 inch).



### 6.5 Assembly of Truck Module (Class D)

When installing below surfaces driven on by HGVs, the telescope is lined as described in 6.4. The concrete rings (diameter 600 mm) and a cast frame with star-shaped load distribution are then installed to support the cast cover. The cast frame must have a contact area of approx. 1 m<sup>2</sup>. To extend the shaft, the riser (max. useful length 300 mm) can be used.

**Please note:** Can only be driven over with HGV, if a self-supporting, steel -reinforced concrete plate is installed!

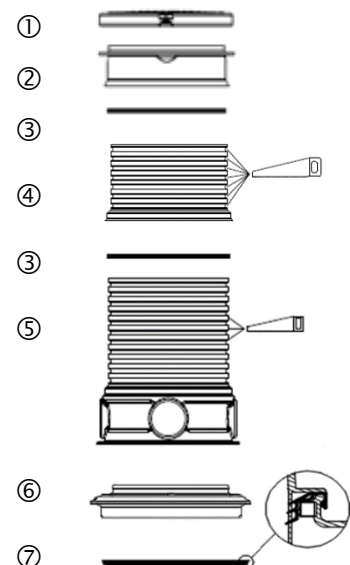
## 7. Assembly of the adapter

### 7.1 Assembling the extension

For larger coverage heights an extension is needed. To insert the extension into the tank dome, soft soap is needed. Into the highest groove of the extension the profile seal is inserted and greased generously. Afterwards push the telescopic dome shaft into the extension and adapt it to the planned area surface.

**max. earth-cover 1500 mm**

- ① GARANTIA Cover
- ② GARANTIA Access (can be inclined by 5°)
- ③ Profile seal
- ④ Li-Lo extension riser
- ③ Profile seal
- ⑤ Li-Lo XL dome (can be rotated by 360°)
- ⑥ Li-Lo XL adaptor
- ⑦ Tank seal



## 8. Inspection and servicing

The entire system must be checked for leaks, cleanliness and stability at least every three months.

The entire system should be serviced at intervals of approx. 5 years. In this case, all parts of the system must be cleaned and their function checked. Servicing should be carried out as follows:

- Drain the tank completely
- Clean surfaces and internal parts with water
- Remove all dirt from the tank
- Check that all internal parts are firmly seated.