Instructions for the installation and maintenance of wastewater collection and treatment systems (oil separators, grease traps, and septic tanks)

APLAST

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CONTENTS

Installation Instructions

Thank you for the trust you have shown by choosing an Aplast product. Oil separators, grease traps and septic tanks (hereinafter referred to as "the product") manufactured by Aplast enable simple and cost-effective installation. Failure to follow the installation instructions may endanger life, cause significant material damage, and void the warranty. The digital version of the instructions is available at www.aplast.si.

1 GENERAL SAFETY INSTRUCTIONS

- Carefully follow the installation and maintenance instructions; otherwise, the warranty is void.
- Before installation, inspect the product and verify that it corresponds to your order.
- Installation must be carried out by trained and qualified personnel familiar with these instructions.
- During installation, comply with construction regulations and safety instructions applicable to such work.
- The protective cover must always be installed on the inspection opening.
- Install the product only in properly prepared construction pits and backfill according to the manufacturer's instructions.
- The selection of the cover version depends on the customer's order.
- Only additional elements prescribed or approved by the manufacturer may be installed. The warranty becomes void if other, non-approved elements are installed.
- The water temperature inside the product must not exceed 35 °C (SIST EN 476:2011).
- Perform maintenance only when retention systems are empty and electrical components are disconnected.
- Document all phases of unloading and installation with photographs; these are required for potential warranty claims.
- The products are intended exclusively for underground installation. Filling a non-installed product with water in a manner not compliant with section 4.2 is prohibited. During installation, the product must be backfilled to the top (only the upper edge of the inspection opening may remain visible).
- The images in the installation and maintenance instructions are symbolic.

The manufacturer reserves the right to modify technical product data without prior notice.
Any deviations between the listed technical data and the actual product do not constitute grounds for warranty claims.
The photos of the products are symbolically shown in blue, but the oil separators themselves are black.

2 TECHNICAL PRODUCT DATA

The presented systems—oil separators, grease traps and septic tanks—are manufactured using the rotational moulding process in standard designs in accordance with national and European standards. Dimensions and technical data for each individual product are available in the catalogues.

2.1 TECHNICAL DATA

OIL SEPARATORS and GREASE TRAPS SEPTIC TANKS

SEPTIC TANKS

3 UNLOADING

Pay special attention during unloading and handling. The tanks are equipped with lifting lugs, which must be used to attach lifting straps. Tanks larger than 20,000 L must be unloaded using a lifting beam. Ensure stability during lifting, apply symmetrical load to each lifting strap, and use a sufficient number of straps proportional to the size of the tank. Unloading with an excavator bucket or forklift tines positioned in the middle of the tank is strictly prohibited, as the length of the tank and resulting bending may cause damage. Do not push, pull, or roll the product on the ground. Store the product on a flat and smooth surface.

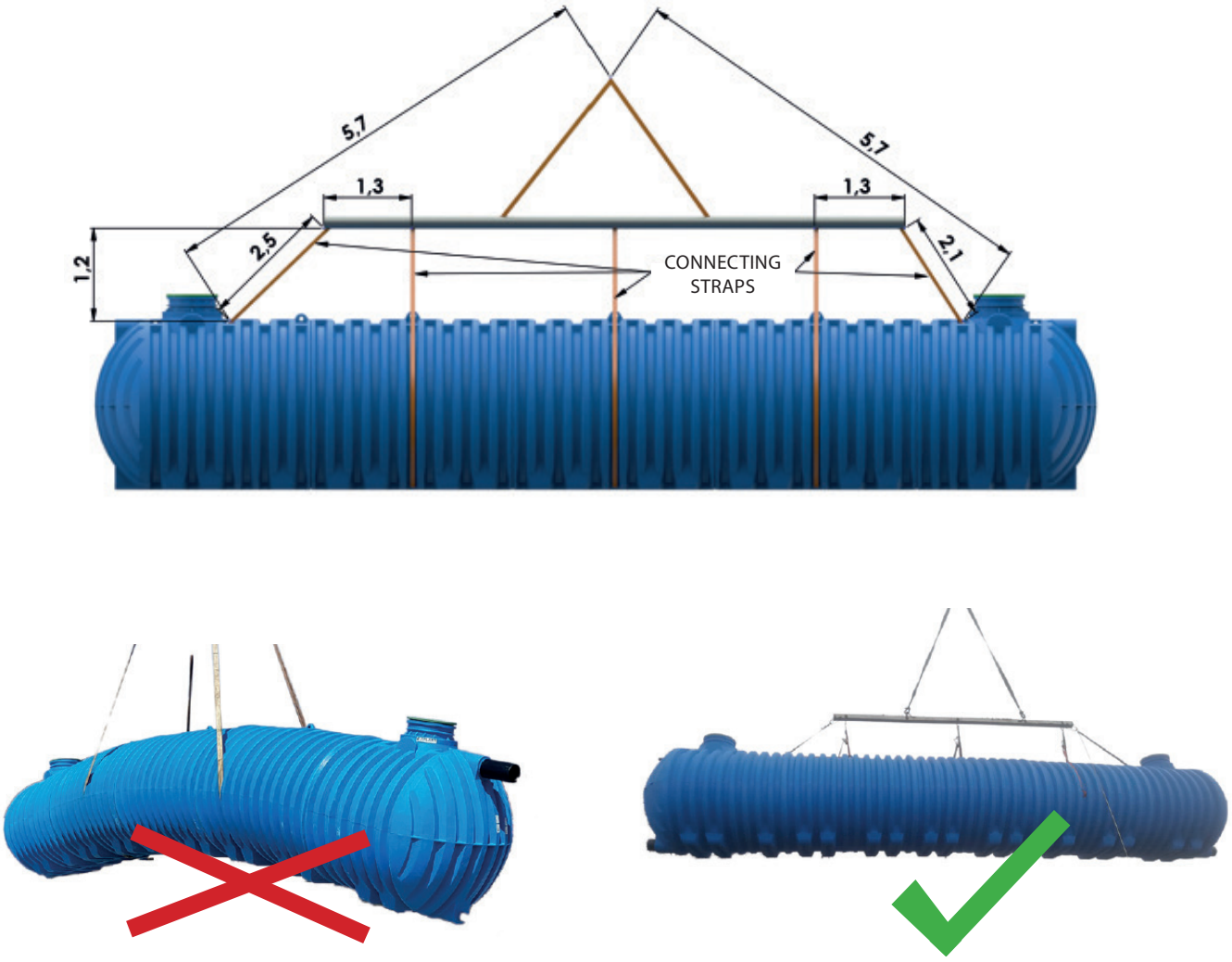


Figure 1: Lifting the product using a lifting beam and lifting straps.

4 EXCAVATION WORKS

The presented products are intended for underground installation. The products can be equipped with standard components, allowing adaptation according to specific requirements or preferences. The following instructions must be observed:

Markings of the tanks and their sizes:

TYPE DESIGNATION TANK SIZES:	TANK DIAMETER:
Tank L	1400 mm
Tank XL	1750 mm
Tank XXL	2300 mm

Installation of the product under pedestrian or trafficable surfaces (axle load up to 2.2 t)

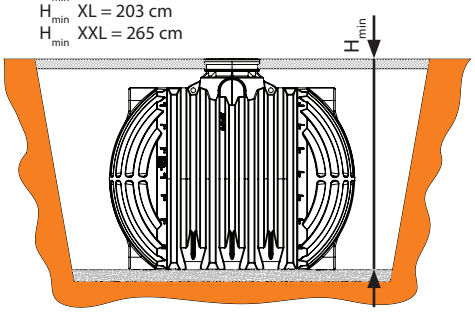
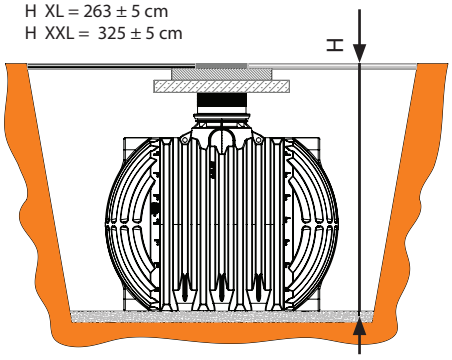
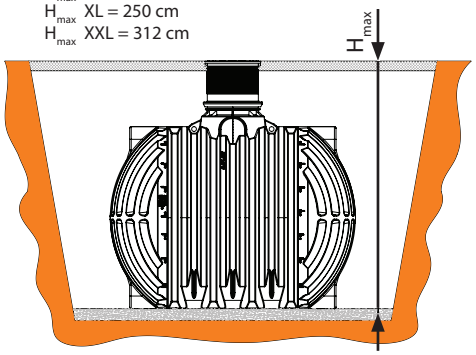
	Pedestrian surfaces	Trafficable surfaces (axle load up to 2.2 t)
Minimum installation depth	H_{min} L = 173 cm H_{min} XL = 203 cm H_{min} XXL = 265 cm 	H L = 233 ± 5 cm H XL = 263 ± 5 cm H XXL = 325 ± 5 cm 
Maximum installation depth	H_{max} L = 220 cm H_{max} XL = 250 cm H_{max} XXL = 312 cm 	

Table 1: Overview of product installation under pedestrian or trafficable surfaces

Installation of tanks in close proximity

When installing tanks next to each other, a minimum spacing of 60 cm in all directions must be observed.

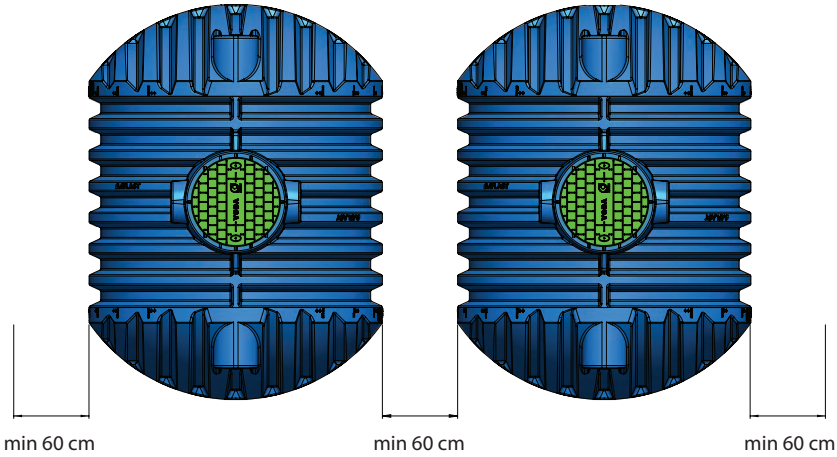


Figure 2: Installation of tanks in close proximity

4.1 EXCAVATION AND PREPARATION OF THE CONSTRUCTION PIT

Excavate the construction pit in accordance with Figure 3. The maximum installation depth must allow for the required thickness of the sand or concrete bedding and the height of the tank. The footprint of the construction pit must exceed the tank dimensions by at least 60 cm on all sides. We recommend using geotextile, placed between the soil and the granular backfill material.

The bedding must be solid, compacted, and level, made of:

- crushed aggregate with grain size from 0 to 16 mm, or
- rounded aggregate (gravel) with grain size from 0 to 32 mm, or
- a concrete slab.

The appropriate bedding thickness is between 20 and 30 cm. The bedding must be compacted to 45% Proctor density.

CRUSHED MATERIAL:
CRUSHED AGGREGATE,
grain mix 0–16 mm

ROUNDED MATERIAL:
RIVER GRAVEL,
grain mix 0–32 mm

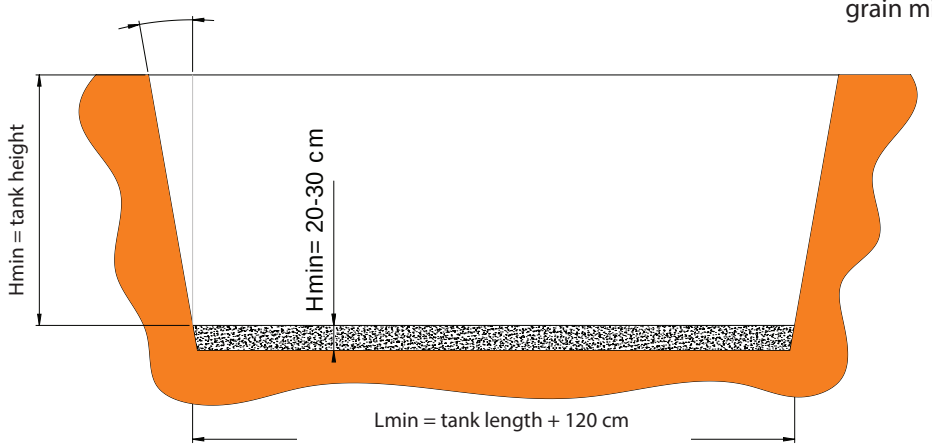


Figure 3: Construction pit

4.2 POSITIONING AND BACKFILLING

Use crushed or rounded aggregate containing a grain mix of 0–16 mm (crushed material) or 0–32 mm (rounded material) for backfilling the product. During installation, ensure that construction machinery does not deform the product due to its weight or operation.

The use of backfill material that does not comply with the required specification may cause damage to the tank. The use of soil, sand or frozen material is prohibited.

Place the product into the prepared construction pit. First, fill the tank with 30 cm of water. Then fill the space between the tank and the bedding using hand tools (Figure 4). Continue backfilling and compacting the backfill material around the tank in layers of 30 cm in height and 60 cm in width, compacted to 95% Proctor density. Repeat this sequence in 30 cm layers up to the top edge of the inspection opening (Figure 5).

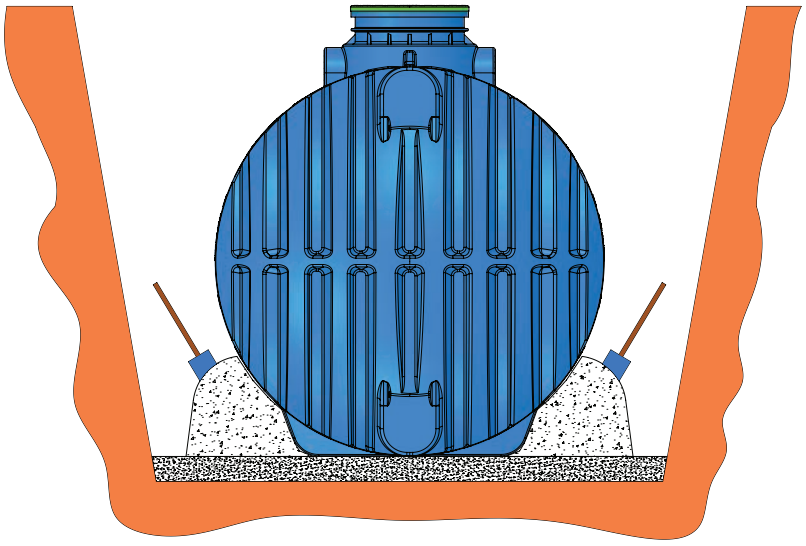
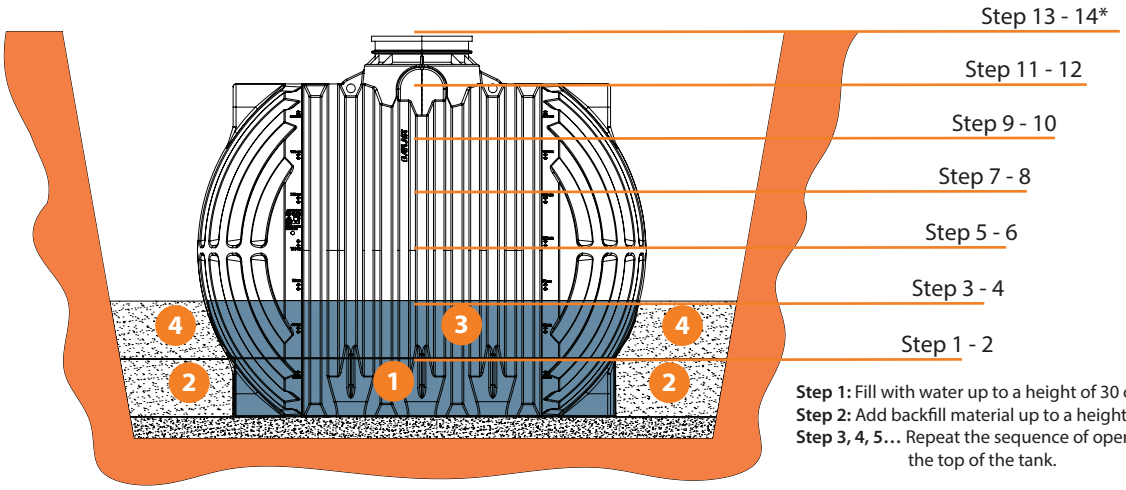


Figure 4: Lateral compaction of the product



Step 1: Fill with water up to a height of 30 cm
Step 2: Add backfill material up to a height of 30 cm
Step 3, 4, 5… Repeat the sequence of operations up to the top of the tank.

* The number of steps depends on the height of the tank; the height of each step is always 30 cm.

Figure 5: Sequence of operations during backfilling

The connection pipeline must be properly installed and supported, meaning it must be laid in such a way that it does not transfer any vertical or horizontal loads onto the inlet and outlet fittings of the tank. The pipeline must be self-supporting — it must rest on its own bedding.

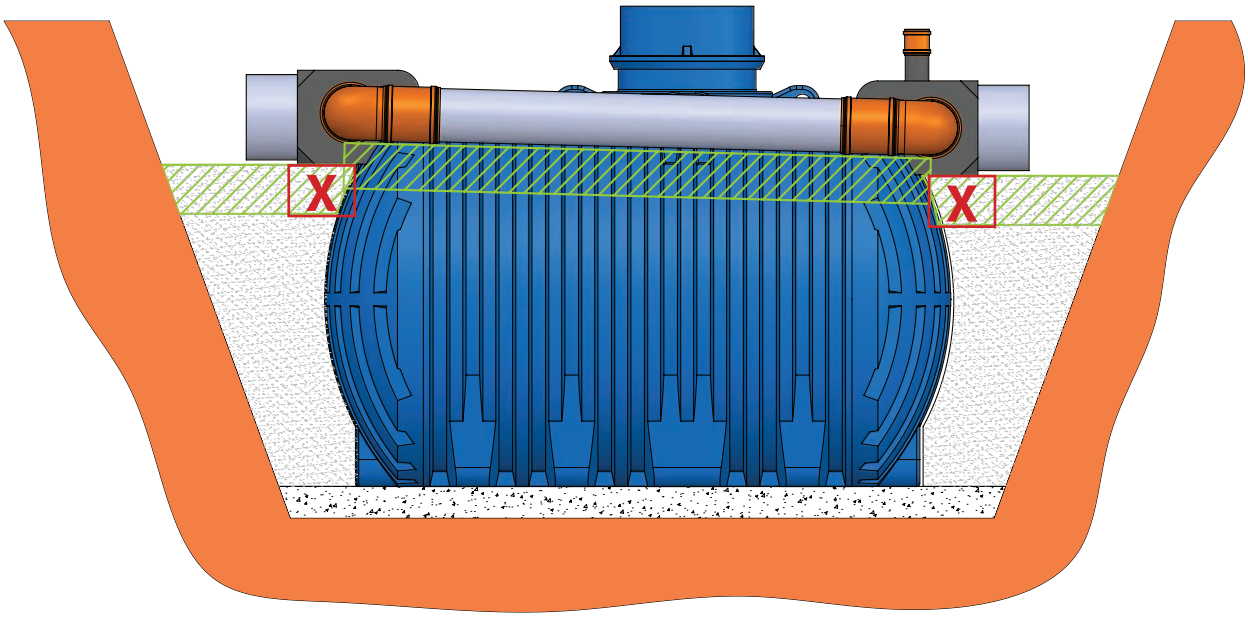


Figure 6: Areas where the backfill layer must be carefully placed and compacted.
The area marked with X must be executed with dry concrete.

4.3 INSTALLATION UNDER PEDESTRIAN SURFACES

Follow the instructions in sections 4.1 and 4.2. Create the initial backfill using the prescribed material up to at least 10 cm above the crown of the tank (Figure 4). The final backfill should be completed with soil up to the top edge of the inspection opening.

Recommendation: We recommend using geotextile between the sand layer and the soil layer.

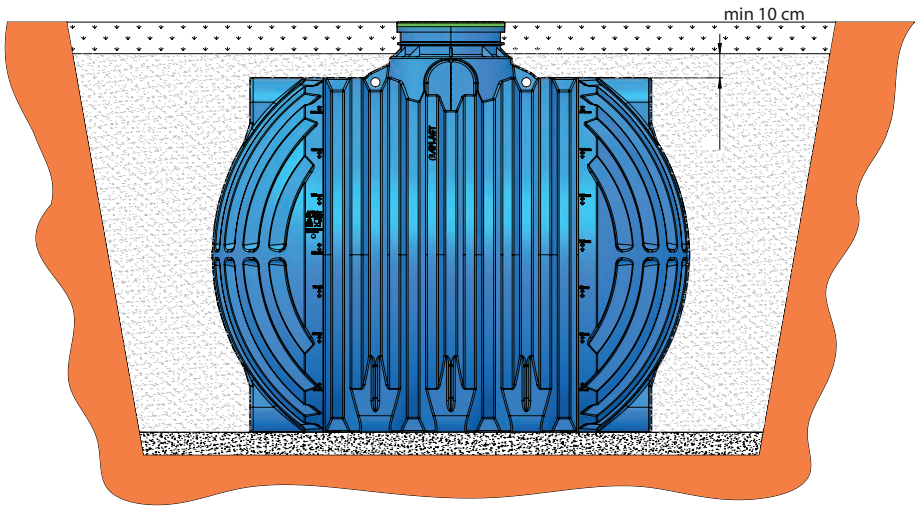


Figure 7: Minimum backfill of the product with specified backfill material before applying the final soil layer.

4.4 INSTALLATION UNDER TRAFFICABLE SURFACES

The products may be installed under trafficable surfaces under certain conditions. In addition to following the instructions in sections 4.1 and 4.2, the instructions in this section must also be observed.
Use a cast-iron cover or any other cover with a load-bearing capacity suitable for the specified area in accordance with EN 124-1. The cover is installed in a reinforced-concrete ring. The RC relieving ring must be installed above the product as shown in Figure 8.
The RC ring must not rest on the tank neck; the clearance must be at least 40 mm. The RC ring, together with the cover, provides effective protection against overloading of the tank.
Install the PE protective cover on the tank as well.

Recommendation: We recommend using geotextile between the sand layer and the soil layer.

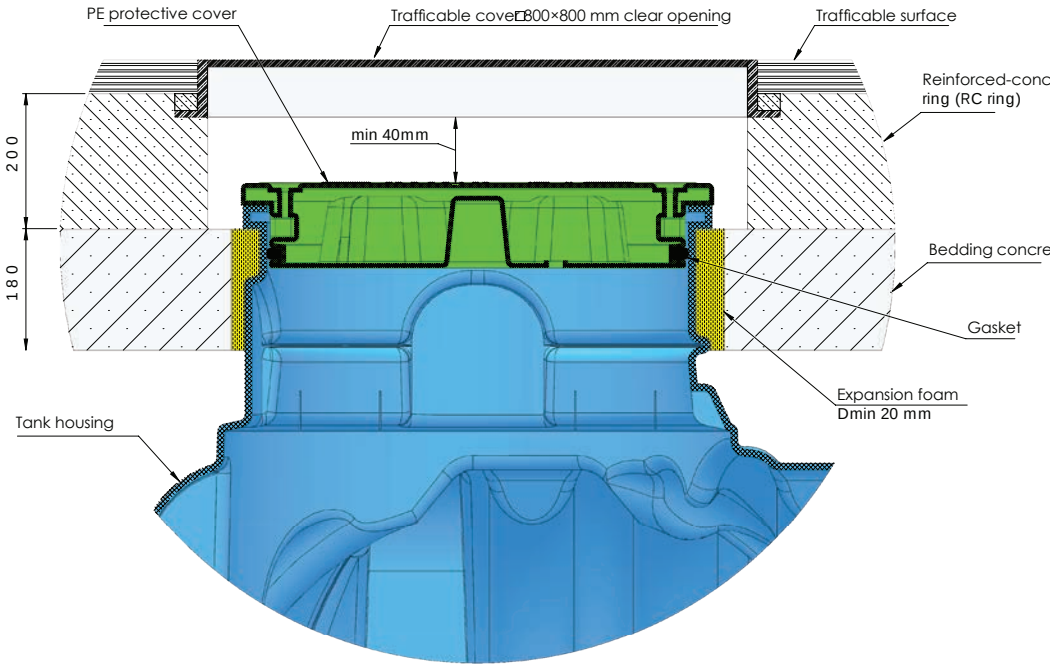


Figure 8: Detail of installation of the reinforced-concrete (RC) relieving ring

Vehicles with an axle load up to 2.2 t

The product allows installation under trafficable surfaces for vehicles whose static axle load does not exceed 2.2 t. For this type of use, an additional backfill height of 50 cm must be provided, which is achieved by installing an additional ring (Section 5.3). The installation of the product is shown in Figure 9.

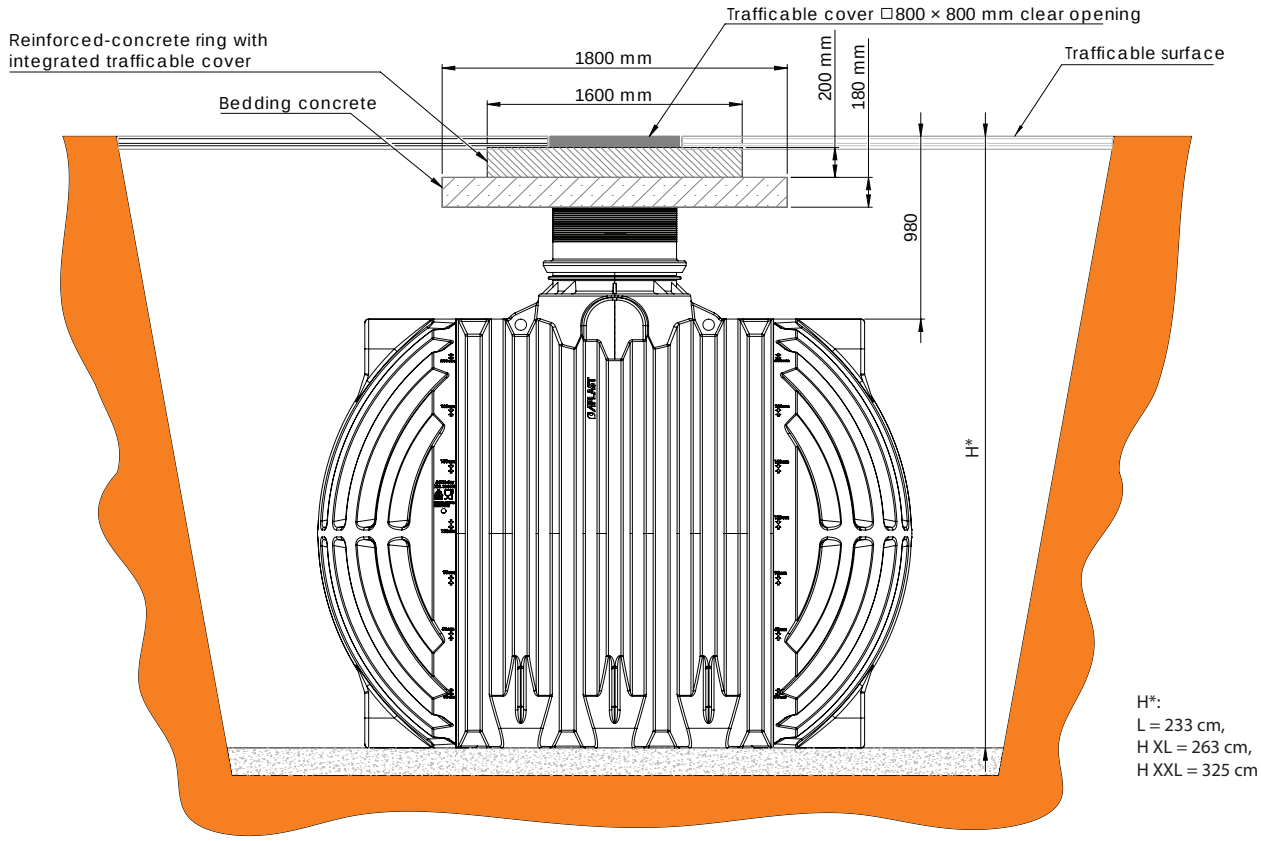


Figure 9: Installation under trafficable surfaces for vehicles with an axle load up to 2.2 t

Vehicles with an axle load above 2.2 t

When installing the product under trafficable surfaces for vehicles whose axle load exceeds 2.2 t, a reinforced-concrete (RC) slab must be constructed above the product. A product installed under trafficable surfaces must be properly protected, as it cannot withstand roadway dynamic loads on its own. The appropriate RC slab is determined by a structural analysis, as shown in Figure 10. The execution of the works must be defined by an authorized structural engineer. Technical support can be obtained from the manufacturer.

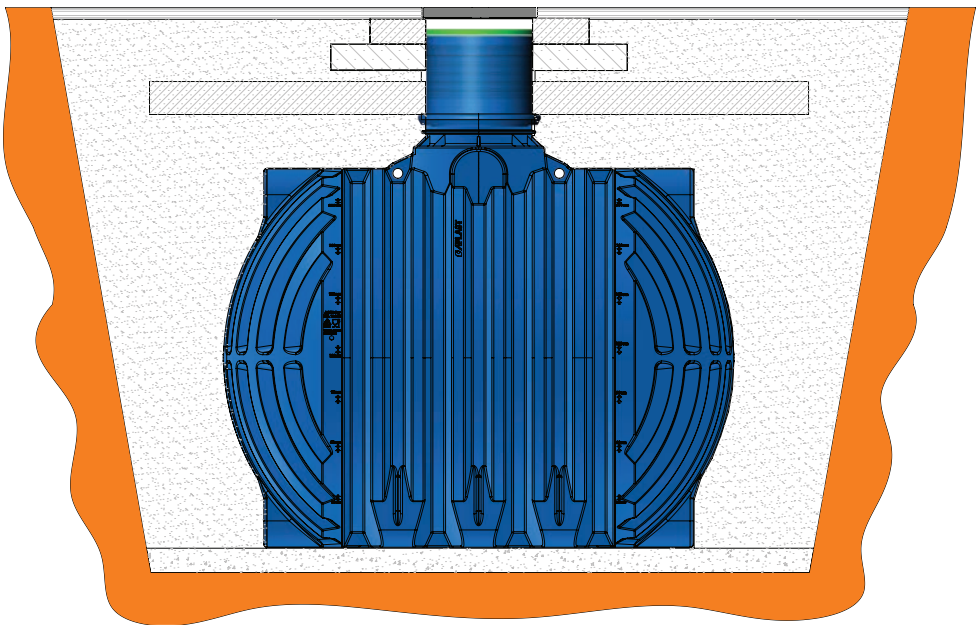


Figure 10: Example of installation under trafficable surfaces

4.5 INSTALLATION IN CASE OF GROUNDWATER OR SEEPAGE WATER

When installing the product in areas where groundwater is present, its level must be taken into account and the product must be installed in accordance with these instructions. During construction works or installation, groundwater must not be present, and appropriate measures must be taken to ensure a dry working environment. During the preparation of the construction pit, we recommend installing geotextile between the soil and the granular backfill material.

The groundwater level acting on the tank may reach a maximum of up to the mid-height of the tank (measured from the bottom of the tank), as shown in Figure 11. In areas where a higher groundwater level is present or expected than the permitted level, additional measures must be implemented to maintain the required level. The appropriate groundwater or water level must be ensured throughout the entire service life of the product.

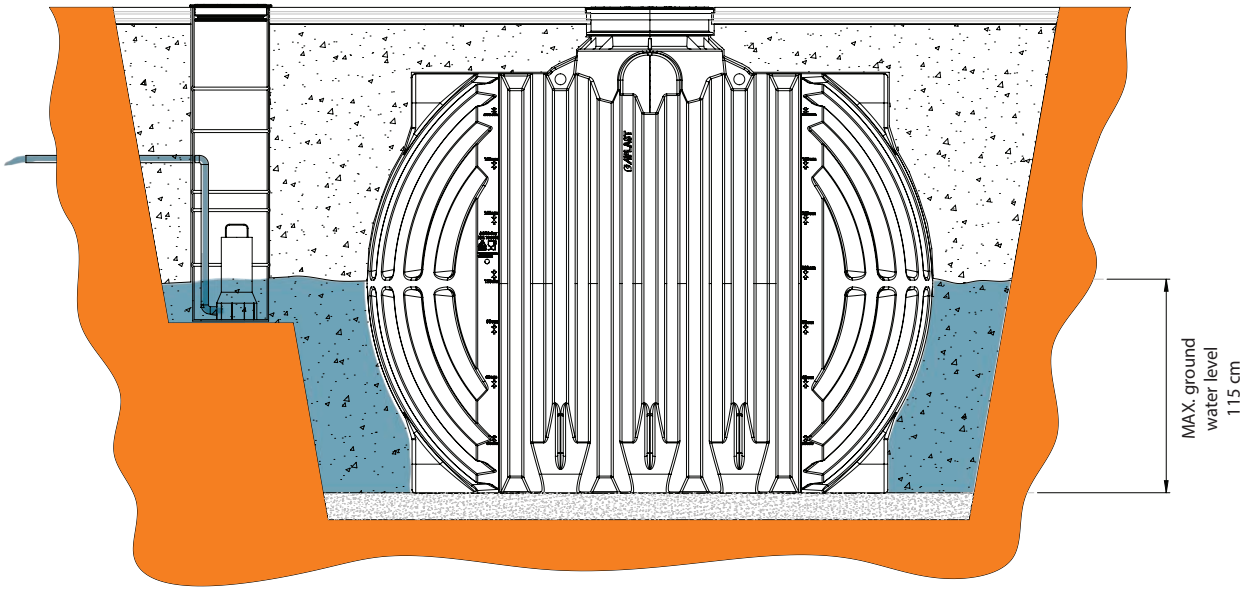


Figure 11: Example of installation in areas with groundwater presence

In the case of installing the product in the described areas, the product must be anchored. For this purpose, use stainless-steel (INOX) straps, which are fixed into the previously prepared concrete base. The required number of straps is shown in Table 1. The INOX strap may encircle the tank body, but it must not apply tensile force that could deform the tank.

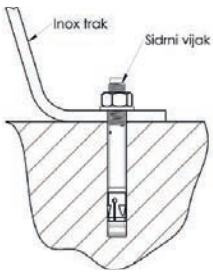


Figure 12: Detail of connection using INOX strap

Figure 13: Mounting straps for storage tanks

Table 1:

Housing of oil separator	L straps – short	L straps – long	XL straps – short	XL straps – long	XXL straps – short	XXL straps – long
2.000 l - L		2 pcs				
2.500 l - L		2 pcs				
3.000 l - L	2 pcs					
3.500 l - XL				2 pcs		
5.000 l - XL			2 pcs			
6.000 l - XL			2 pcs			
7.000 l - XL			2 pcs			
8.000 l - XL			4 pcs			
10.000 l - XL			3 pcs	2 pcs		
12.000 l - XL			3 pcs	2 pcs		
8.000 l - XXL						2 pcs
10.000 l - XXL						2 pcs
12.000 l - XXL					2 pcs	2 pcs
16.000 l - XXL					2 pcs	2 pcs
18.000 l - XXL					2 pcs	2 pcs
20.000 l - XXL					2 pcs	2 pcs
22.000 l - XXL					4 pcs	2 pcs
24.000 l - XXL					4 pcs	2 pcs
26.000 l - XXL					4 pcs	2 pcs
28.000 l - XXL					4 pcs	2 pcs
30.000 l - XXL					4 pcs	2 pcs
36.000 l - XXL					6 pcs	2 pcs
38.000 l - XXL					6 pcs	2 pcs
40.000 l - XXL					7 pcs	2 pcs
46.000 l - XXL					8 pcs	2 pcs
50.000 l - XXL					10 pcs	2 pcs

4.6 INSTALLATION ON UNSTABLE SLOPES

If installation is planned in an unstable area, installation conditions must be ensured in such a way that the product is not affected by soil pressure or soil creep. This is achieved by constructing appropriate reinforced-concrete (RC) retaining walls (Figure 14). The dimensions of the retaining wall, the amount of reinforcement, and the required drainage must be determined by an authorized structural engineer.

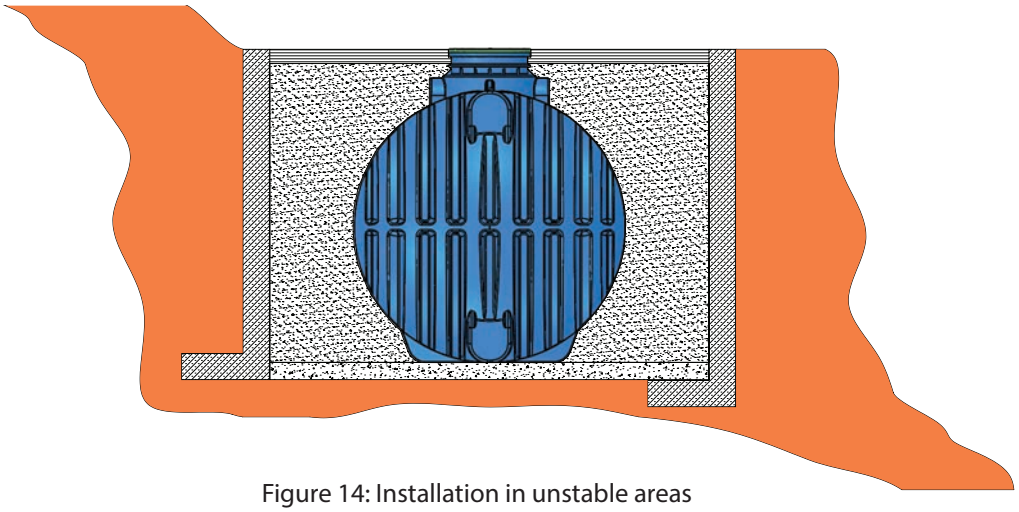


Figure 14: Installation in unstable areas

4.7 INSTALLATION OF THE PRODUCT IN CASE OF ADDITIONAL FILL

Up to the permitted increase of 0.5 m

A deeper installation can be achieved by using an additional ring. The ring is also used when the level of the backfill material needs to be adjusted to the height of the surrounding area. The product may be raised by up to 0.5 m, i.e., one ring may be used. Install the ring in accordance with section 5.3 of these instructions. If a ring is already installed on the product at the factory, it determines the final height. If its height is 250 mm, one more ring of the same height may be added, provided that the total height does not exceed 500 mm.

Above the permitted height (more than 0.5 m)

For installations where the planned fill height exceeds 0.5 m, the product must be installed with a relieving slab. The structural design of the relieving slab and its installation method must be specified by a certified structural engineer. In this case, to increase the installation height, use DN 1000 rings with an eccentric dome, positioned eccentrically relative to the tank inspection opening (Figure 15).

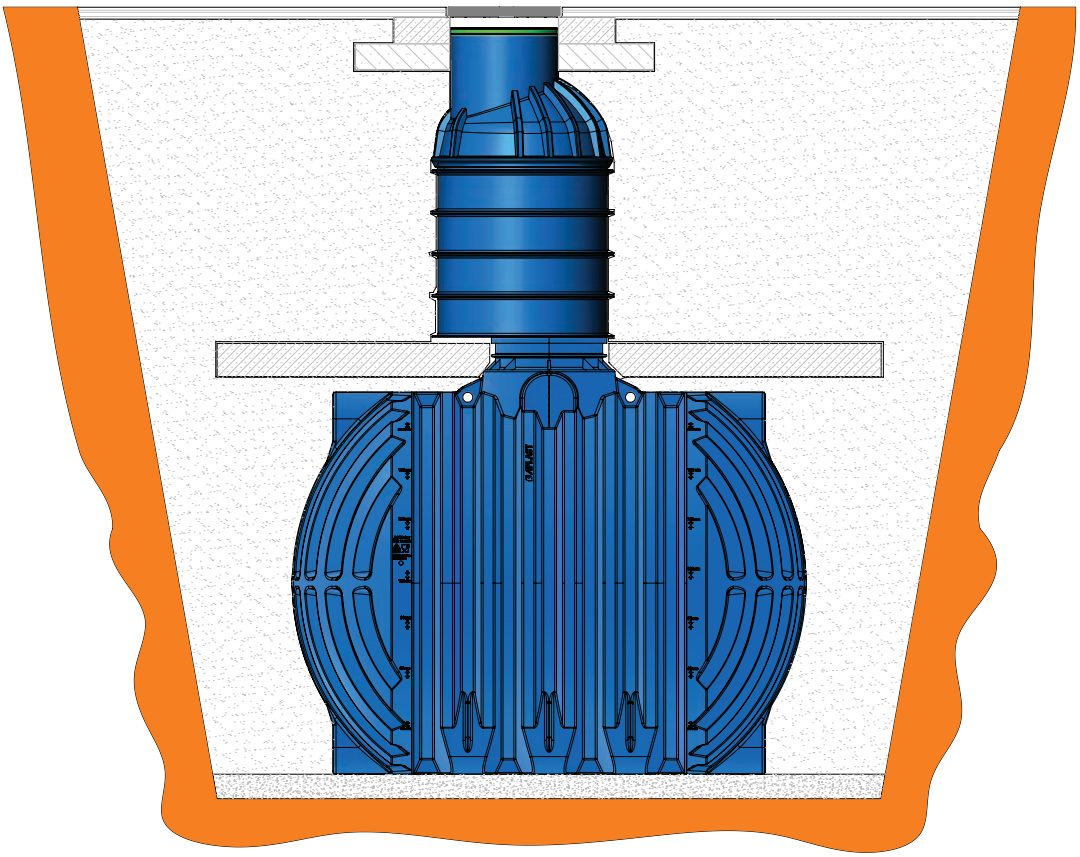


Figure 15: Installation in case of fill height exceeding the permitted limit

5 INSTALLATION OF ADDITIONAL EQUIPMENT

In addition to the pre-installed equipment, the products may be fitted with additional standard elements on site. For this purpose, only standard APLAST fittings may be used. All inlet and outlet pipes must be laid with a minimum slope of 1% in the direction of flow (settlement must also be taken into account). All suction and pressure pipes, as well as control cables, must be routed through a protective conduit. When pumps are used, ensure adequate air supply — a cover with a ventilation opening may be used (Figure 17).

5.1 INSTALLATION OF CONNECTIONS

All basic tank designs include designated connection surfaces where inlet seals can be installed or polyethylene pipes can be welded. The installation of connections (if required) must be carried out by a qualified professional.

5.2 INSTALLATION OF THE PROTECTIVE COVER

Some products are equipped with a factory-installed protective PE cover. Before each installation, clean the protective cover and apply a food-grade lubricant to the gasket. The protective cover is optionally available with a lock (Figure 16). A cover with a ventilation opening is also optionally available (Figure 17).

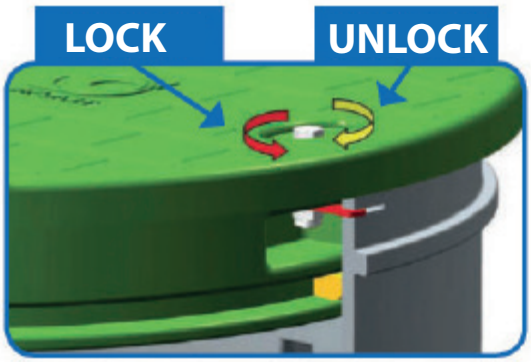


Figure 16: Cover with integrated lock

5.3 INSTALLATION INSTRUCTIONS FOR ADDITIONAL ELEMENTS (RINGS OR EXTENSIONS)

When installing the product with additional backfill, the tank can be raised using standard rings or extensions by a maximum of 50 cm. Before installing a standard ring, the technological rim of the inspection opening must be removed (Figure 18); afterwards, the ring can be installed (Figure 19). When installing an extension, removal of the technological rim is not required (Figure 20).

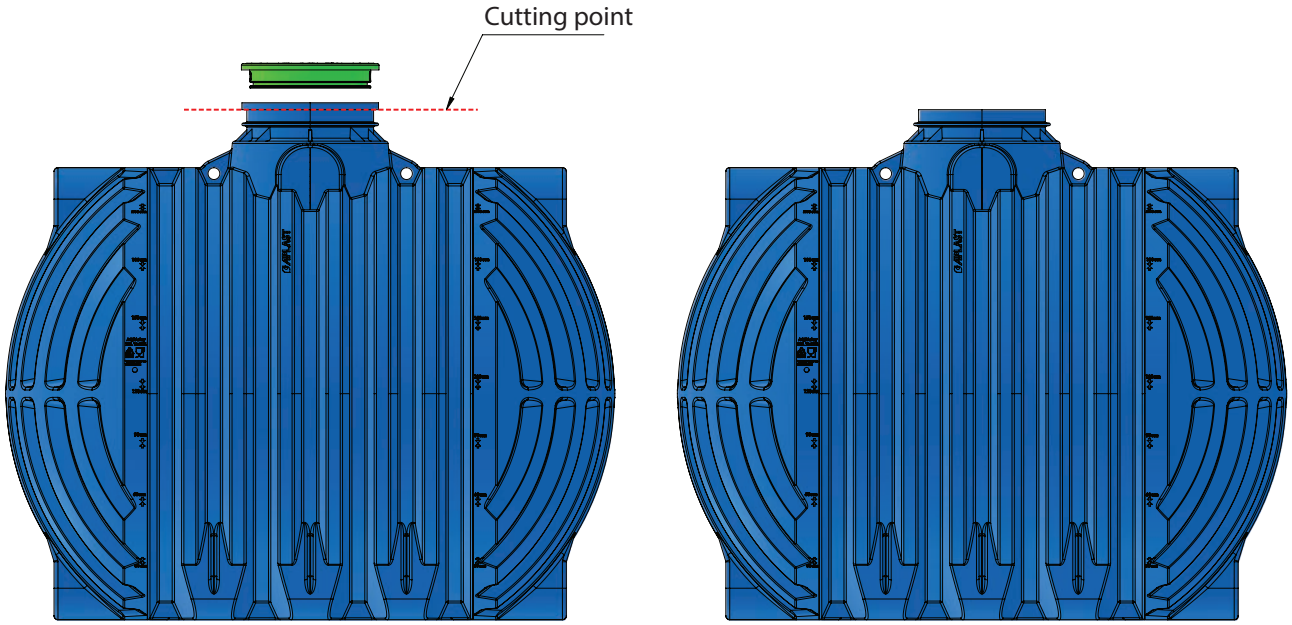


Figure 18: Cutting point of the technological rim

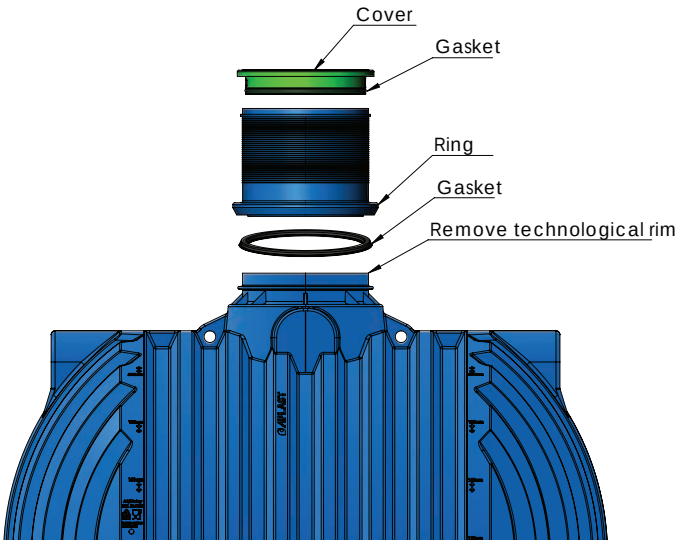


Figure 19: Option for ring installation

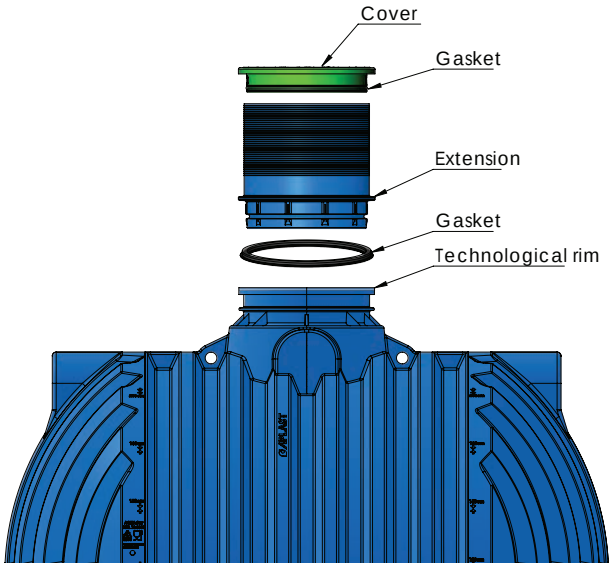


Figure 20: Option for extension installation

6 MAINTENANCE INSTRUCTIONS

During the use of the product, regular monitoring and inspection of the system's operation are required. Depending on the product type — oil separator, grease trap, or septic tank — the prescribed operating and maintenance instructions for each specific product must be observed. These are available on the manufacturer's website. In general, the following applies to all products:

Maintenance work may only be carried out by a person professionally trained to maintain such systems. Please observe the following guidelines:

- For safety reasons, at least two persons must be present at the same time.
- Ensure a safe working environment, including appropriate safety and life-protection conditions for performing maintenance.
- Disconnect all electrical power sources before starting maintenance work.
- Before cleaning, completely empty the product.
- Clean the interior of the tank if necessary.
- Perform a visual inspection for possible interior damage. In case of detected damage, consult the manufacturer.
- Check the pipes, inlet and outlet connections, and installed systems.
- Before reinstalling the cover, lubricate the gasket with a food-grade lubricant and place it onto the tank. The cover must always remain closed.
- Wastewater that may adversely affect the properties of polyethylene (e.g., firefighting water) must be emptied from the product as soon as possible and treated appropriately.

7 PRODUCT RECYCLING

At the end of the product's service life, it must be handed over to an authorized waste management company. The product (the material type is indicated on the item) is fully recyclable. By doing so, you contribute to the preservation of the natural environment, the reduction of ecological impact, and a sustainable approach to resource management.

PE - LD

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