

# Installation manual

## Uponor Technical chambers



# Contents

1. Intended use.....	3
2. Delivery and acceptance check.....	3
3. Storage and transport.....	3
4. Before installation.....	3
5. Lifting.....	4
6. Electrical connections .....	7
7. Commissioning .....	7
8. Maintenance .....	7
9. Recycling.....	7
10. Project specific data.....	8
11. Contact information.....	8
12. Operation journal for Uponor Technical chamber .....	9

## 1. Intended use

Uponor technical chambers are built and designed according to customer's needs. The chamber body is watertight, fast, and easy to install and self-anchoring. When built, installed, and maintained properly, its lifespan can be anticipated to be up to 100 years.

Technical chambers are usually placed underground and insulated if needed.

The raw material of the double-layer container is polyethylene. Its chemical qualities and durability are excellent and there's no risk of corrosion. The inside of the chamber is light-colored for easier inspections and other maintenance and operation work.

## 2. Delivery and acceptance check

The delivery time and other aspects of technical chamber is agreed between customer and supplier. The information regarding the specific date and delay terms are communicated to the customer in order confirmation.

The chamber must be overall checked at the delivery. Flaws or damages caused by transport or storage must be documented to the consignment note. Possible flaws that are noted after the delivery must be communicated within 7 days or at the latest 7 days after the flaw has occurred.

## 3. Storage and transport

The technical chamber is to be stored on a flat platform in its original packaging. It should always be handled with care. The chamber body might get slippery in rain and in cold weather conditions. Handling and installation of the chamber should be avoided at -20° C weather.

The chamber or any products or pipes connected to it should never be dropped, thrown, or dragged. Note that especially during the wintertime any kind of striking or hitting the chamber or respective products and pipes should absolutely be avoided.

Prevent any kind of connection between the chamber and chemicals, gasoline or diesel or a source of heat. Protect the chamber and respective products from mischief during the storage.

The chamber, pipes and other products shall be protected from any pointy or sharp burdens during delivery or storage – note especially the transportation platforms. The transportation platform shall be clean and flat, and it should not have any pointy or sharp objects. Sliding or bending of the chamber or its respective pipes and products shall be prevented. When binding the load, wide cargo straps shall be used. Using of cables, wires or chains is prohibited.

When implementing normal operating and maintenance work in the chamber, all personal gear and tools shall be clean, appropriate, and according to the work in progress.

## 4. Before installation

Before installing the technical chamber or possible connective equipment it must be checked for damages or any flaws by transportation. Usually, the customer is responsible of handling the chamber and other equipment and installing at the site.

The customer is responsible of following:

- Arranging a suitable location point for the technical chamber in cooperation with

local authorities, if permits or other needed

- Easy access for transport equipment to site
- Arranging suitable and adequate lifting gear on site
- Arranging relevant electrical and other connective work (welding etc)
- Excavation and fill on site with suitable materials and by suitable methods.

Any work on site, including excavation and filling, shall be done in compliance with respective legislation and regulations.

## Trench

If the ground on site is poorly permeable by water (for example clay), installing draining into the trench should be taken into consideration. The chamber body is self-anchoring, so there's usually no need for extra precautions against ground water's buoyancy forces.

When digging the trench, special care and consideration shall be pointed into following the site plan, working safety and qualified personnel to have the base and filling done on-site as fluently and sustainably as possible. Trench work shall be done according to respective legislation and regulations. When installing the technical chamber, it is especially important to handle connected parts with care. To mitigate the risk of malfunction or other harm it is important to secure the straightness of the chamber before and during the installation. During installation it shall be secured that the surface water doesn't have access inside the chamber at any point (through maintenance lids for example). The eventual height difference between ground level and maintenance lids shall be at least 200 mm.

## 5. Lifting



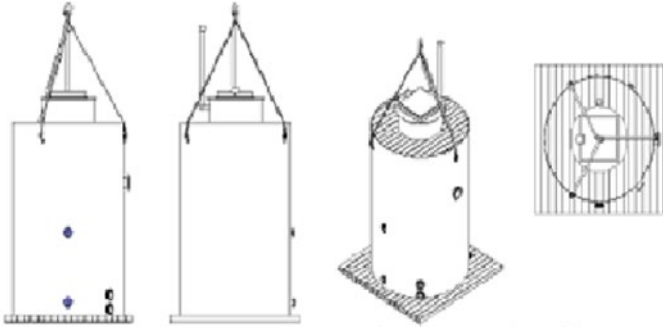
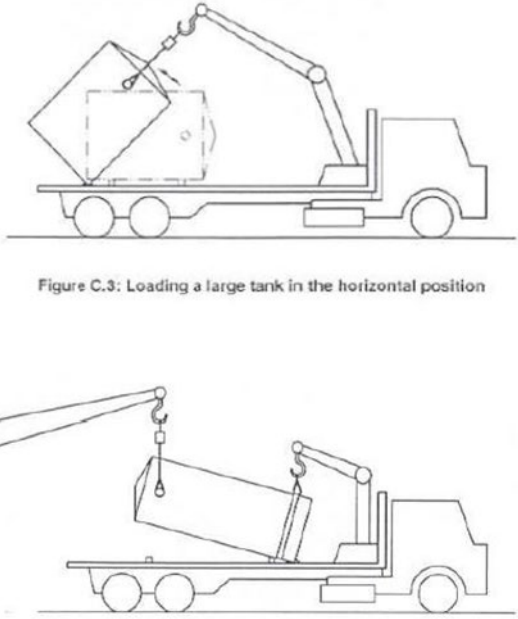
There are numerous different hazards concerning lifting of the chamber. To mitigate them, lifting should always be planned carefully. Special liftings, such as heavy liftings, lifting of a big object or joint liftings require written plan.

The following instructions are the main guideline for lifting Uponor Technical chambers.

- Only approved, checked and intact gear and equipment shall be used in liftings
- The chamber shall not be lifted with wires or other gear that might scratch or harm the surface
- Before start, the lifting capacity marked on the respective lifting gear shall be checked. The lifting gear shall be capable to handle the load at a minimum.
- The lifting must not be made over individual(s)
- The lifting jacks shall only be operated by specifically educated and selected personnel
- The lifting yokes are on the sides of the chamber under the lid cone.
- To avoid damage on the surface of the chamber the lifting should be operated with lifting belts and hanging loops made of artificial or other soft materials
- Parts attached to the chamber body (by welding or other) should be noted and handled with care when lifting
- The weight of the chamber and balance points shall be checked before adjusting

lifting gear and lifting. If the balance point is not marked on the chamber body, it is in the middle of the chamber (width and height wise).

- The lifting gear should be set as open- or tightening lifting around the chamber
- A test lift shall be performed to height about half meters before the actual lift. If needed, the lifting shall be adjusted according to the balance points
- When lifting, normal instructions and principles concerning lifting belt angle and shape coefficient shall be considered.

<p>The lifting yokes for the belts and hanging loops are in the bottom of the chamber. Their spots have been marked on the body with this sign:</p>	
<p>Chamber shall be lifted from the balance points. If there are no balance point markings, the balance point is in the middle. The balance point is marked on the sides of the chamber with this sign:</p>	
<p>Lift the technical chamber as illustrated in the pictures: Wrap cargo wraps around the chamber body on self-tightening loop.</p>	
<p>Position the lifting wraps at about <math>\frac{1}{3}</math> x height of the chamber. The minimum width of the wrap is 75 mm. Another elevating gear can be used to help the lifting. Ensure the safety and suitability of the lifting gear and follow the lifting plan. See illustrations:</p>	 <p>Figure C.3: Loading a large tank in the horizontal position</p> <p>b) The tank is lifted clear using both cranes</p>

## 6. Electrical connections

The condition of the electric device shall be monitored before starting any installations.



It is highly important to make sure that the electrical center is only to be opened and operated by professional personnel – except electrical cabins that are not locked with a key. Locked electrical installations, maintenance and programming may only be opened or done by authorized personnel.

Electric cables shall be installed only through cable inlet.

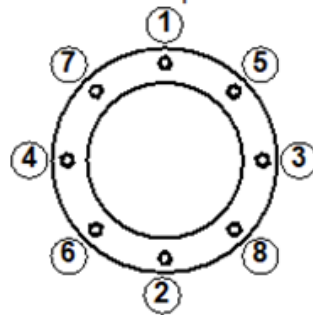
## 7. Commissioning

Documenting the commissioning actions is recommended.

The recommended order of bolt tightening is as in the picture:

The first tightening round shall be done by torque that is approximately half of the final tightness.

The tightness of flanges shall be checked, and the bolts tightened with a torque wrench.



## 8. Maintenance

Documenting the maintenance actions is recommended.

The chamber body is practically free of maintenance, but it should be kept clean and free of clutter and the chamber body as well as equipment checked visually for any flaws.

In the wintertime the maintenance lids and their surroundings shall be kept free from ice and snow. The ground frost insulation and/or thermal insulation of pipes can be done if needed according to a respective plan and concerning rules and regulations. The final landscaping is to be done by the customer.

The customer might consider preparing for exceptional circumstances, such as power outage, with spare power source and / or –connection.

Components and equipment shall be monitored and inspected according to suppliers' rules and recommendations.

## 9. Recycling

Full plastic chamber body can be recycled as such by companies specialized in recycling plastic complexes into products, that don't require drinking water approval and allow using recycled raw materials. Up-to-date list of such companies can be viewed from local plastic manufacturers associations web pages.

## **10. Project specific data**

Project specific data consist of e.g., type drawings, material certificates, recorded tightness studies, technology-specific manuals, and list of spare parts for example. They are selected and delivered to customer according to selected solution.

## **11. Contact information**

[country specific contact information]



