

A large, dark green, ribbed cylindrical water storage tank is being lowered into a trench by a crane. Two workers in hard hats and work clothes are visible at the base of the tank, one appearing to be adjusting a vertical support structure. A white label is attached to the side of the tank. The background shows a construction site with dirt and some trees under a clear sky.

FTW[®]-FRANK Drinking Water Storage Systems

Safe and durable polyethylene system solutions.



FTW[®]-FRANK Drinking Water Storage Systems

High-quality. Low maintenance. Sustainable.

With our FTW[®] system we offer cost-effective, high-quality DVGW-compliant polyethylene solutions for the catchment and storage of drinking water. The polyethylene material has proven itself in past decades due to its outstanding properties, including for the transport of drinking water, and is increasingly displacing conventional materials in storage structures.

FTW[®] constructions are prefabricated in the factory and flexible in design. This means that customer wishes can be implemented quickly and cost-effectively and short construction times realised on site. Subsequent changes or extensions are just as feasible as the simple dismantling of temporary storage containers.



Functional principle

From the source to the drinking water reservoir to end consumers

En route from the source to the consumer, our drinking water passes through a wide variety of stages. Depending on the method used, source collection wells or transfer chambers are used to collect water. Here, the water is subjected to rough cleaning and fed into a storage reservoir. Depending on the water quality, it may be necessary for the drinking water to pass through a water processing plant before it reaches the end consumer. Our FTW® system is deployed for all these areas.



The FTW® system contains three modules: the source collection well, the water chamber and the Controls and instruments chamber. These can be adjusted to meet individual requirements and put together quickly and easily.



Spring water collection chamber

The individual source infeeds are collected in separate chambers in the spring water collection chamber and brought together into a collecting basin for extraction via a stilling basin with measuring equipment.

Water chamber

The drinking water is collected and stored in the drinking water reservoir. Generally, it is built as a horizontal tube equipped with supply, removal, emptying and overflow and also air and breather pipes. In addition, a pressurised door provides access to the storage chamber and an inspection glass permits checking of the stored drinking water.

Controls and instruments chamber

The controls and instruments chamber is directly connected to the water chamber. The controls and instruments chamber houses all shut-off valves and air filters. Optionally, it can also house pressure-boosting equipment and water processing equipment.

Our services

We support you in every phase of your project, including directly on site, in order to implement the best possible drinking water storage system for your specific requirements.



FTW[®] Spring water collection chamber

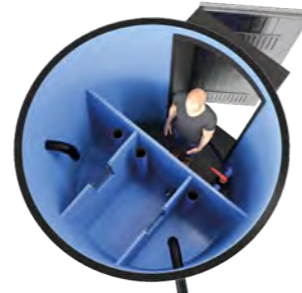
Modular. Lightweight construction.

The spring water is collected and checked in spring water collection chambers and then transferred on to a storage reservoir. The number of source infeeds generally dictates the structure of the chamber.

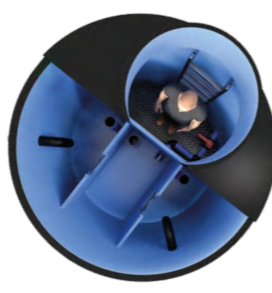
Every collection tank ❶ contains a removable transfer pipe ❷. Removing this pipe prevents the collection tank from being filled and water from getting into the supply tank ❸. This makes it possible to clean each basin separately. Depending on the location of the spring water collection chamber, it may be accessed either via a stainless steel door fitted to the side or a dome from above. In any case, the access area is above the water level.



Customised solutions
Thanks to our range of preconfigured combinations, we are able to offer you tailor-made, yet cost-effective solutions. The lightweight construction also permits setting up in locations being difficult to access.



Spring water collection chamber with side access



Spring water collection chamber with access via dome



Spring water collection chamber with three collecting basins



Spring water collection chamber with four collecting basins



FTW[®] Drinking water reservoir

Easy handling. Short construction times.

Inside the water chamber, the supply pipe is fed from the ceiling to the end of the water chamber. The discharge pipe is located on the separating wall opposite the controls and instruments chamber in order to guarantee the greatest possible mixing of the stored water. Lighting for the water chamber can be affixed either to the ceiling or underwater. A pump sump with an emptying pipe in front of the separating wall can serve to completely empty the water chamber.

Our FTW[®] drinking water reservoirs can be adapted in shape depending on storage needs and the available space.

In order to keep construction times on-site to a minimum, the storage construction is pre-assembled at the factory as far as is possible,

Typical designs



Water reservoir with controls and instruments chamber. Access via dome.



Water reservoirs to the left and right with the controls and instruments chamber in the centre and access from the side.



Water reservoirs arranged in parallel with central access to the controls and instruments chamber.



Water reservoirs arranged in parallel with side access to the controls and instruments chamber.



FRANK drinking water reservoirs and spring water collection chambers are manufactured exclusively from KTW-tested and DVGW-approved raw materials. The low-maintenance, smooth surface impedes micro-bacterial growth and encrustations.



FTW[®] Controls and instruments chamber

Customized. User-friendly.



All necessary valves and measuring equipment are connected to the pipes in the controls and instruments chamber. The air filter for the water chamber is also located in the controls and instruments chamber. If necessary, pressure-boosting or water processing unit and electrical switching cabinets can also be accommodated here. The divided and removable gratings in the bottom area provide a firm footing and easy movement inside the controls and instruments chamber.

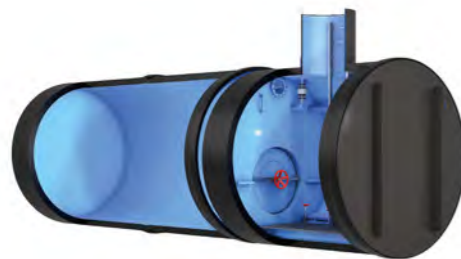
Valves
The valves can be deployed with both manual and electrical actuation. Remote control via a process control system is guaranteed by the electric drives.



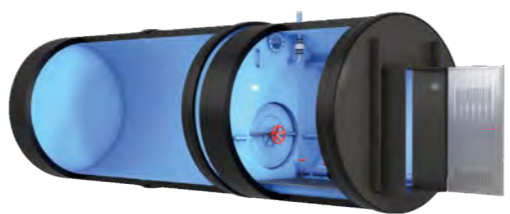
Water chamber

Controls and instruments chamber in the centre with side access

Water chamber



Controls and instruments chamber on the side with access from above



Controls and instruments chamber on the side with access from the front



Examples of applications

FTW® storage constructions can be implemented in almost any conceivable geometry.



Controls and instruments chamber with pressure-boosting equipment



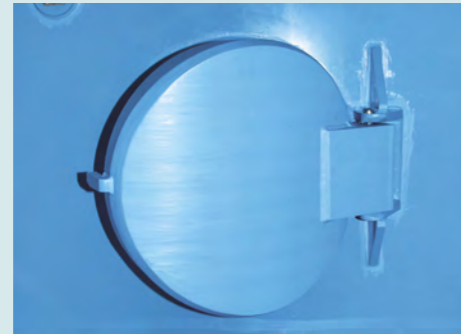
Controls and instruments chamber with stainless steel piping



Controls and instruments chamber with pressurised PE door in the separating wall leading to the water chamber



Measuring weir to determine the capacity in a spring water collection chamber



Pressurised PE door seen from the water chamber



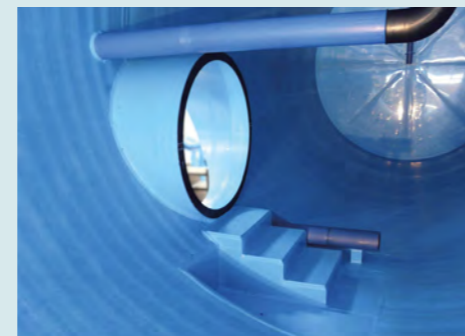
View from the water chamber through the pressurised PE door into the controls and instruments chamber



Spring water collection chamber with two source infeeds and shut-off valves



Source collection well with two source infeeds



Platform with steps into the water chamber



Installation instructions for construction sites

In order to keep construction times on-site to a minimum, the storage construction is preassembled at the factory as far as possible. Just a little groundwork is necessary before the structure is placed on the construction site. The following instructions should be followed for professional installation of FRANK FTW® storage structures:

FRANK FTW® drinking water reservoirs are DIN EN 16961-compliant sectional laminated tubes which are closed with end plates. DIN EN 1610, TV-DVWK-A 127 and UVV accident prevention regulations must be complied with when installing the storage tubes.

Building ground/bedding of storage tubes

Installation may only be carried out by specialist staff with sufficient experience of using suitable equipment and machines. The installation conditions assumed from the structural verification for the building must be complied with. Deviations from this are only permissible with written approval from FRANK GmbH.

The following installation conditions must be adhered to as a minimum

- Level building ground in order to create a continuous base for the storage tubes. Any gradient necessary for operating the storage structure must also form a continuous base for the storage tubes. The base should be at least 150 mm thick and consists of Class G1 soil with a Proctor thickness of 97%. The supporting angle for the storage tubes should be 120°.
- Concrete bases are not permissible for FRANK FTW® drinking water reservoirs!
- The minimum ditch width in according to DIN EN 1610 must be complied with. We recommend not exceeding a

working space of 1 metre around the construction.

- The construction should be filled in the tube zone with layers of a maximum of 30cm. Special care should be taken in the vicinity of the spandrel, as this represents the base for the storage tubes. We recommend using Group G1 or G2 soil. Compacting should be done to a Proctor density of 97%.
- The storage tubes should be covered to at least 80 cm above the tube crest in order to be able to guarantee freedom from frost for the stored drinking water. The construction must not be driven over unless this has been structurally verified.

Constructions with an entrance door

- In constructions with an entrance door the vicinity of the door frame must be lined in order to avoid different deformations of the constructions in case of subsidence. We recommend using the same bedding material with an identical degree of compaction.
- During filling and compacting of the working space the door frame constructed of PE panels must be braced to prevent deformation of the frame construction,

Gratings

Gratings are secured for transport with screws or supplied separately on pallets for subsequent installation. These transport securing devices must be removed professionally before inspection work is carried out.

Valves

The screw connections in valves pre-installed at the factory are already tightened to the correct torque. Before putting the storage structure into operation these screw connections must be checked for firm seat and if necessary tightened with suitable tools. In addition, we recommend checking the screw connections at regular intervals.

Soil groups in accordance with ATV-DVWK-A 127

G1	GE	= narrow-graded grits
	GW	= wide-graded grit-sand mixtures
	GI	= intermittently graded grit-sand mixtures
	SE	= narrow-graded sands
	SW	= wide-graded sand-grit mixtures
G2	SI	= intermittently graded sand-grit mixtures
	GU	= Grit-silt mixtures
	GT	= Grit-clay mixtures
	SU	= sand-clay mixtures
	ST	= sand-clay mixtures

Advice and support is available from our experts in every phase of your project, including on site.

To find out more, simply give us a call!

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Picture source:

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Fig.: Water glass Fotolia - FOOD-micro