





# INSTALLATION INSTRUCTIONS

2025









HYDROCARBON, BIOGAZ



FIRE FIGHTING



DRINKABLE WATER



WATER



LIQUID FERTILIZERS



WASTE WATER

## **FLEXIBLE TANK**

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## Certificat

#### **Assainissement**

Epuration - Dispositifs de stockage d'eau

### CITERNES SOUPLES D.E.C.I SERENA GROUP

Le CSTB atteste que le produit ci-dessus est conforme à des caractéristiques décrites dans le référentiel de certification QB 09 Assainissement en vigueur après évaluation selon les modalités de contrôle définies dans ce référentiel.

En vertu de la présente décision, le CSTB accorde à :

La société SAS SERENA

6 rue Jean-Baptiste Perrin FR-33320 EYSINES

Usine TN - 7030 MATEUR BIZERTE

le droit d'usage de la marque QB 09 Assainissement pour le produit objet de cette décision, pour toute sa durée de validité et dans les conditions prévues par les exigences générales de la marque QB et le référentiel mentionné ci-dessus.



-102-01-337\_V1

#### Décision d'admission n° 001-102-01-337\_V1 du 31 janvier 2025.

Sauf retrait, suspension, ou modification, ce certificat est valable jusqu'au 01/11/2027. Le certificat en vigueur peut être consulté sur le site internet http://evaluation.cstb.fr pour en vérifier sa validité.

#### **CARACTÉRISTIQUES CERTIFIÉES**

Conformité à l'Avis Technique n°17.1/24-337\_V1

#### - Caractéristique de Durabilité

- Adhérence
- Armure
- Fil
- Poids surfacique
- Résistance à la déchirure amorcée (chaine/trame)
- Résistance à la rupture (chaine/trame)

#### - Caractéristique de mise en œuvre

- Caractéristiques dimensionnelles
- Résistance aux agents chimique et aux UV
- Résistance au poinçonnement
- Résistance en traction des soudures

#### - Caractéristique de Fonctionnalité

- Etanchéité

Ce certificat comporte 1 page. Correspondant :

Tél.: 01 64 68 82 81

Marie-Cécile TROUILHE Courriel : marie-cecile.trouilhe@cstb.fr

> Par délégation du Président

Ismaël BARAUD



## **SERENA** flexible tanks

Dear Customer,

We are glad that you have chosen SERENA flexible tanks for your business! Your QB (building quality) certified tank was manufactured in our own factory, which is certified ISO 9001-2015, ISO 45001, and ISO 14001. These certifications cover product quality, environmental concerns and health and safety. They motivate all our teams, and this commitment, both financial and human, is why we have such an impressive machine park as well as a high-quality and high-precision manufacturing process. So our team is working to offer you a robust tank suited to your needs, with reliable and durable welding and customizable accessories, very quickly.

SERENA is also a family business: we know each of our customers and do our very best to keep them satisfied!

Now it's time to install your tank! This leaflet is designed to be consulted before installation, and to provide help during installation and the rest of the life cycle of the tank.

For any questions or suggestions, please get in touch with your usual contact. You will also find our telephone and postal contact details, country by country, on the back cover.

Happy installation!
The entire SERENA team















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#### VIII. Where to find us?

#### IX. Dimension



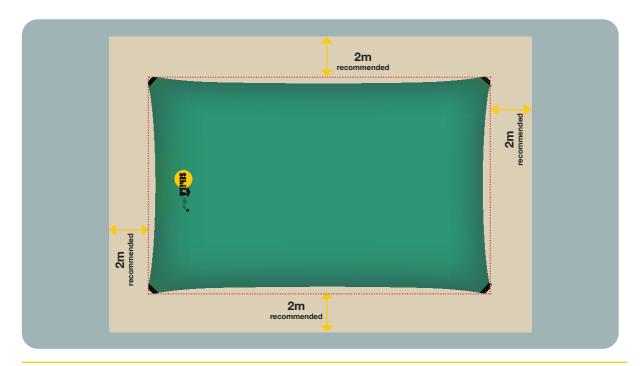


Preparing the platform is an essential step that should not be neglected. You need to think about it before even taking delivery the tank. We recommend that you read the following instructions in full before unpacking your tank to ensure a secure and durable installation. In case of doubt or difficulties, do not hesitate to seek assistance from an engineering company or call our team of installers in Morocco.

### A. Dimensions and requirements

## Dimensions

The surface of the platform must be equivalent to the size of the tank indicated on the validated, to which two metres are added in width and length. Thus, your tank will be surrounded by a safety perimeter of one metre, thus protecting it from, for example the growth of brambles or strimmers, etc.



## Weight-bearing and pitch



The platform must be perfectly flat to prevent the tank from rolling, or welding from being overstressed on one side.

The floor of the platform must also be stable enough to support the weight of the full tank; if the weight distorts the floor, this will eventually damage the tank.

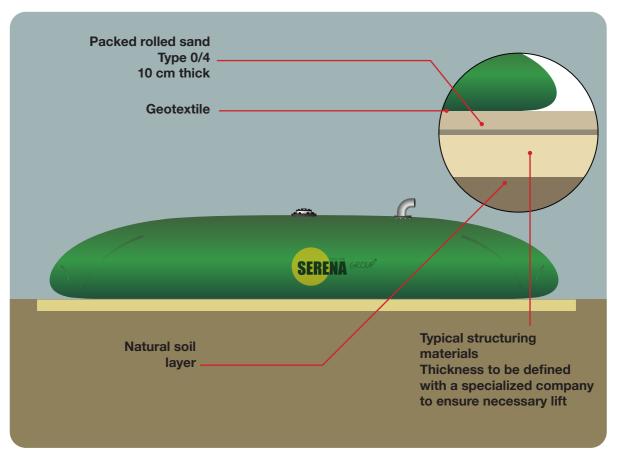
### How to calculate the weight that the platform will have to support?

Maximum height of the tank (metre) x density of the liquid (t/m3).

For a fire reserve with a maximum height of 1.6 metres, the platform must support at least 1.6 tonnes per square metre.



Did you know?
The density of liquid water is 1000kg/m³ or 1 t/m³



## Nature of the soil



Your platform must then be covered with a bed of compacted gravel.

It may be necessary at this stage to employ the services of specialists who will be able to determine the nature of your soil and thus the thickness of this gravel bed. This step is essential and must not be neglected or erosion may occur.

Once this bed of compacted gravel has been prepared, you must add a layer of fine packed sand, type 0/4, approximately 10 cm deep. Be sure to remove all items that could damage the tank.

Finally, we recommend that you install a ground sheet, which we can provide on request. This should cover the entire surface of the platform (including under the tank and on the surrounding safety perimeter). In 600g/m2 PVC, it will provide additional protection and guarantee a clean installation.



### **B.** Special installations:



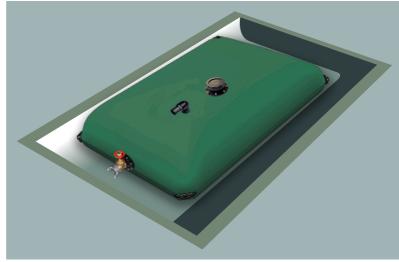
In some cases, it may be necessary to build a retention system, particularly when storing polluting liquid.

There are two types of retention: A retention slope and a retention wall.

These two systems require a few additional steps to the classic installation detailed above.

## Slope

This retention system, also called a retention pit, is an external installation. It will require an additional preliminary step consisting of creating a pit with a 45° slope, working to the dimensions indicated in the diagram below



The next steps to be follow for building the platform are the same as those mentioned previously

## Wall

This retention basin system on a low wall consists of surrounding the tank platform with 4 walls. To determine the height of these walls, please refer to your order form.

SERENA GROUP

Low wall

The next steps to follow for building the platform are the same as those mentioned previously. The groundsheet must be fixed to the top of the wall using the eyelets with which it is fitted.





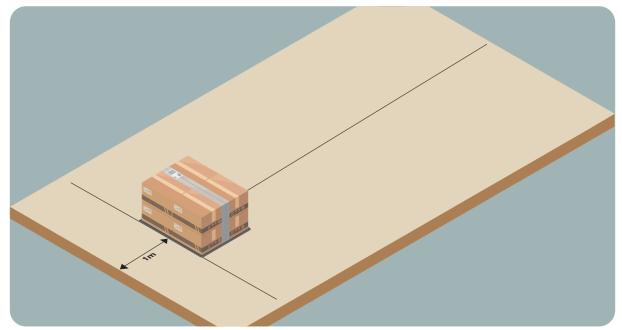
Only begin installing the tank if the previous steps preparing the platform have been carried out according to the installation manual. if you have any doubts, it is advisable to call a professional. You will need the help of others for the following steps.

## A. Position of the tank before unpacking

If your tank is packed in a cardboard box, carefully remove the packaging using a cutter without touching the tank inside.

During this step, make sure you have to hand the drawing you approved when you ordered the tank. You will find see a red cross on this drawing, identical to the one on the folded tank. This cross indicates in which direction you should unroll the tank.

Once the red cross is visible, the tank and the pallet must be placed 1 metre from the edge, given that the tank will be rolled out over its entire length.



Flow chart diagram





### **B.** Unrolling the tank

The tank must be rolled out over its entire length, paying attention to keep it parallel to the edges of the platform. We strongly recommended you do not stand behind the tank as you risk being crushed.

Once the tank has been rolled out to its full length, remove all boxes and pallets that might be on the platform. If necessary, the tank can be lifted slightly to remove the transport pallet.

### C. Unfolding the tank

This step aims to deploy the tank across its width. Position yourself along the first section, allowing one person every 2 to 4 metres, and pull on the tarpaulin to unfold it. Repeat the operation for each section of each width.



Once deployed, lift opposite corners and shake lightly to create a carpet of air. If the position of the tank needs to be adjusted, do not drag the tank but proceed by shaking it.





Depending on the type of tank ordered, the accessories may or may not be fitted on the tank.

### A. General case

If the accessories are not pre-fitted, follow the steps below to safely set it up:

Preparing the counter-flanges: Insert the counter flanges into the intended openings in the tank, as shown in the adjacent diagram.

(If the counter-flanges are already installed, remove the nut covers, unscrew the nuts, remove the washers, then install the flange).



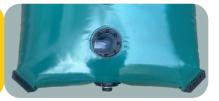
Fix the overflows, vents, and filling valves on the counter-flanges, ensuring they are in the correct position.



Tighten the nuts gradually in a crisscross fashion to ensure they are fixed uniformly and securely.



Check that the corner reinforcements are correctly attached to the four corners of the tank, following the same tightening precautions mentioned above.



Ensure the seal using a gasket, sealing paste or Teflon tape.



With above ground connections, a flexible pipe of at least 3 metres must be used. We strongly advise you not to use a rigid pipe as this could damage the flanges and the tank.

### **B.** Fire tanks



Our fire tanks comply with the NF S 62 250 and NF S 62 240 standards, and have received QB certification issued by the CSTB. However, for tanks installed in France, it is important that you refer to the SDIS to which you are affiliated to check their recommendations and have your installation approved. The information in this leaflet is provided for informational purposes only and may not affect the guaranteed cover in the event of a problem resulting from the improper installation of the underground network.

The flanges and counterflanges of above-ground and frost-protected tanks must be installed in accordance with part A. General Case, above.



## Above ground:

The above-ground fire tank is equipped with one or more valves. As part of fire regulations, the valve must be straight, in the noon position. Be careful to check its installation before filling, otherwise you will have to empty the tank.







Reserve for above-ground fire defense



## 2 Frost protection:

Unlike above ground connections, frost protection connections are made using rigid pipes. This step can be difficult and require professional machines. We recommend that you contact professionals, particularly engineering companies.

Whether the outlet chosen is a fire hydrant or a gooseneck (angled outlet), a trench must be dug. To do this, once the tank is unrolled and unfolded, fold it back up to the tapping under the tank.

The depth of the trench varies depending on the product chosen, here are some useful indications:

- •0.60 m for goosenecks
- •1.10 m for DN100 fire hydrants
- •1.15 m for DN150 fire hydrants

Once the trench has been dug and a layer of sand has been applied to the bottom, refer to the particular steps of each installation in the paragraphs below then backfill the trench with compactable soil.





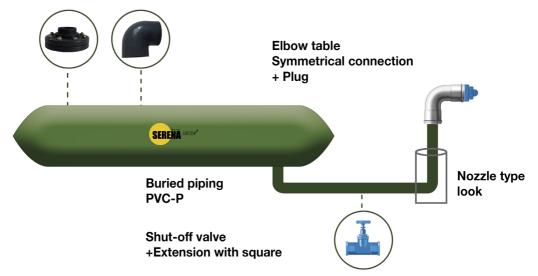


Reserve for frost-free fire protection

INSTALLATION INSTRUCTIONS SERENA Flexible Tank 2025

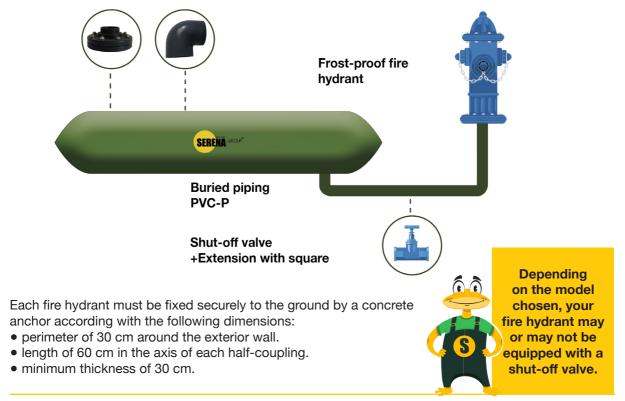
#### A. Gooseneck





The remote socket with a gooseneck or stainless steel column must be equipped with a shut-off valve. The recommended depth is approximately 60cm. Between 50cm and 1 metre must be allowed between the shut-off valve and the gooseneck. It is also essential to install a manhole cover over the entire height of the gooseneck, with a minimum perimeter of 60cm.

### **B.** Fire hydrant



### C. Basic Tanks



Basic tanks are delivered ready for use. They are pre-equipped along the sides with a DN32 wall pass-through with plug, a DN25 wall pass-through and a DN25 elbow on top. Before filling, you must check that the wall fittings are screwed securely and add PTFE tape if necessary. We invite you to watch our tutorial videos on our YouTube page.









Filling and connection must be carried out carefully and under supervision. First, make sure that the previous steps have all been correctly carried out and that the ventilation elbows are not blocked.

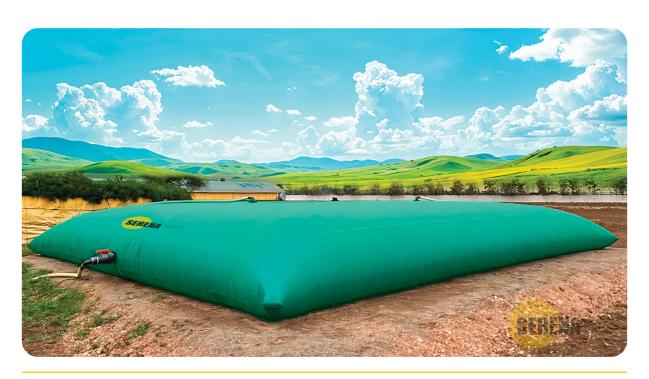
## A. Filling

The maximum height indicated on the tank and/ or on the documents received (validated quotes, technical plans and delivery notes, etc.) must be scrupulously respected. This is a maximum height; it does not need to be reached.

As you are filling, check that the tank is filling evenly. If this is not the case, we recommend you drain the tank and adjust your platform so that it is perfectly horizontal. The risk is that the tank rolls or that the welds on one side are overstressed.

## **B.** Connection

You can connect your tank to the valves or other devices provided on your tank. However, it is imperative you use flexible pipes long enough to withstand variations in the height of the tank.







There you have it, your tank is installed and ready to be used for many years! Here are some tips to extend its lifespan.

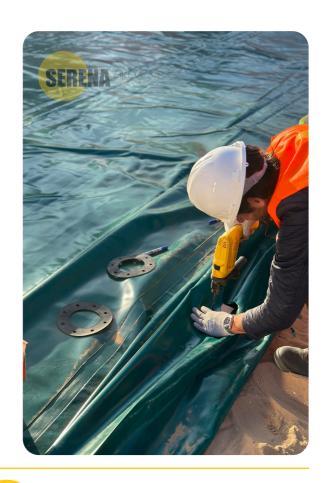
### A. Maintenance

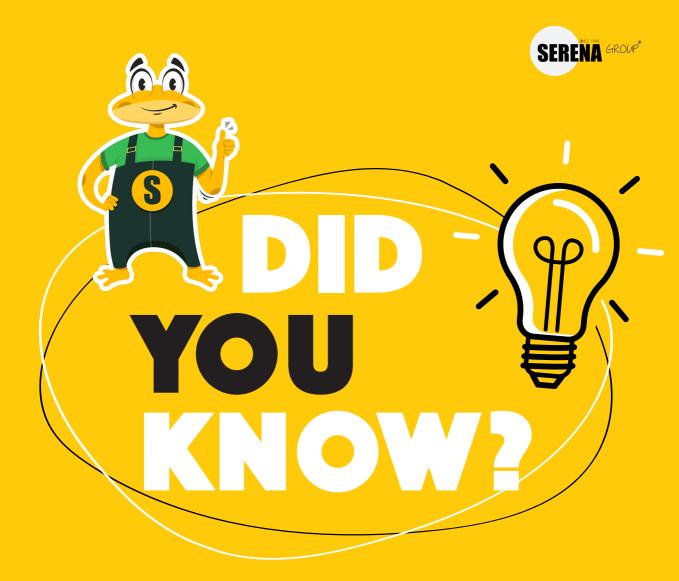
The tank does not require any maintenance, other than a regular inspection to check it is in good condition (especially that the valves are working properly) and that it has not been damaged by external events such as vandalism, rodents, or other animals. We advise you to be very careful with gardening tools (mowers and strimmers, etc.) which regularly damage the tanks, and to use a ground sheet to avoid having to get too close to the tarpaulin.

The tank can withstand temperatures between -30°C and + 70°C. The only precautions to take are to insulate the valves in the event of frost, and to shade or cover your tank with an insulating cover if you are storing effluent or drinking water. The tank is not made to be stored for a long time. If this should happen, be sure to store it away from rodents, heat, and humidity.

## B. Tear - Hole

It is possible to carry out small scratch repairs on a filled tank or a hole on an empty tank. Contact our team to obtain a repair kit or to carry out a hot repair (with welding) in the event of more serious damage.





All the volumes of our fire tanks are indicated as useful volume. We take into account the dead volume, i.e. the volume of water which remains in the tank and which cannot be sucked up when the fire hydrant is on the side of the tank (around 8cm of water). For example, a 120m³ tank will actually contain a nominal volume of more than 130m³.

We have been QB certified since 2025! This French certification is specific to the building sector and guarantees you a high quality tank. All our materials, welds, technical sheets, tools, and production methods, etc. have been examined and are checked annually.





Each Serena flexible tank is designed for a specific use. The pH of the liquid to be stored is an essential criterion for choosing the appropriate tank. Below you will find the different possible applications.

## A. Water Tanks



- Composite fabric: 900 g/m², colour green. Under 30m: small tanks.
- Composite fabric: 1300 g/m², colour green. From 30m³ to 1,000m³

· Applications:

Water storage for private use, swimming pool water recovery.
Building and public works, irrigation, professional drip irrigation



## **B.** Tanks for Drinking Water



- Composite fabric: 930 g/m², blue colour.
- Available capacities: From 0.3 m³ to 100 m³.

Applications:
 Storage of drinking water.

## C. Fire Tanks



- Composite fabric:
   1300 g/m², green or beige colour.
- Available capacities: From 10 m³ to 1,000 m³.

Applications:
 Water storage for firefighting.
 QB certified tanks to guarantee their compliance.



## D. Tanks for Light Effluents



- Composite fabric: 1300 g/m², green or beige colour.
- Available capacities: From 1 m³ to 1,000 m³.
- Applications:
   Storage of bovine and pig effluents, green water, brown water.

   Suitable for certain industrial effluents.

## E. Heavy Effluent Tanks



- Composite fabric: 1400 g/m².
- Available capacities: From 1 m³ to 1,000 m³.
- Applications:
  - Storage of cattle, pig, sheep, goat, and poultry effluent, methanization digestates.
  - -Industry and wine-growing activities.
  - -Recommendation: for a high pH, choose 1400 g/m² fabric.



## F. Tanks for Liquid Fertilizer



- Composite fabric: 1400 g/m².
- Available capacities: From 25 m³ to 1,000 m³.
- · Applications:

Storage of liquid fertilizer.

-Used with a basin on a slope and with a rainwater evacuation system or a retention tank on a wall (manufactured in our factory).

## G. Specific Tanks



For specific applications, such as gasoline or chemical products, please contact us for suitable solutions.



## Technical Data Sheets Available

#### Water tanks:

- Composite fabric 900 g/m<sup>2</sup>: Under 30 m<sup>3</sup>
- Composite fabric 1300 g/m<sup>2</sup>: From 30 m<sup>3</sup> to 1,000 m<sup>3</sup>

### **Drinking water:**

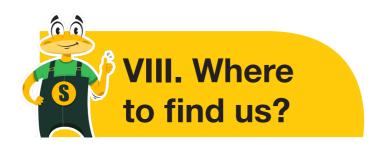
• Composite fabric 930 g/m<sup>2</sup>

### Fire fighting and light effluents:

Composite fabric 1300 g/m²

## Heavy effluents and liquid fertilizer:

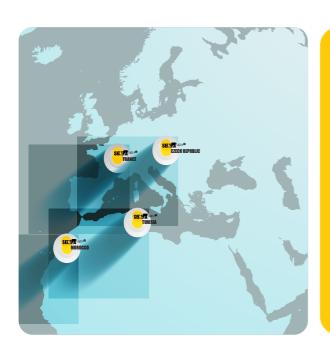
• Composite fabric 1400 g/m²





### We have offices in four countries:

France, the Czech Republic, Tunisia and Morocco, and we deliver all over the world.





## Our distributor PEC Ltd.

Middle Barlington Roborough Winkleigh Devon EX19 8AG, United Kingdom Tél.: (+44) (0)7523 270 710 victor@pfc-eu.com www.mycistern.uk



# You don't know who to contact?

Send a message to victor@pfc-eu.com



#### **Coatings and finishes:**

Coating type: PVC

Application: Water, some effluents





TYPE OF EFFLUENTS								
Cattle	Pig	Sheep	Goat	Poultry	Cheese making	Methanization digestate	Industries	Wine industry

<u> </u>				
Total weight	1300 g/m²	EN ISO 2286-2		
Thickness	ca. 1 mm	DIN EN ISO 2286-3		
Warp / weft breaking resistance	4200 / 4000 N/50 mm	EN ISO 1421/V1		
Warp / weft tear resistance	500 / 450 N	DIN EN 17679		
Adhesion	25 N/cm	PA 09.03 (intern)		
Cold resistance	-30°C	EN 1876-1		
Temperature resistance	+70°C	PA 07.04 (intern)		
Color fastness to light	> 6 Note, Value	EN ISO 105 B02		
Bending resistance No breakage	100000 x	DIN 53359 A		
SUPPORT				
Material	PES	DIN EN ISO 2076		
Thread	1100 dtex	DIN EN ISO 2060		
Armor	P 2/2	ISO 3572		



#### **Coatings and finishes:**

Coating type: PVC Application: Water Citern smaller than 30 m<sup>3</sup>



Total weight	900 ± 5 g/m²	EN ISO 2286-2	
Warp / weft breaking resistance	4200/4000 N/5 cm	EN ISO 1421/V1	
Warp / weft tear resistance	500/ 400 N	TS EN ISO 4674-1 EN ISO 4674-1	
Adhesion	100 N/5cm	TS EN ISO 2411 EN ISO 2411	
Cold resistance	-30°C	DIN EN 1876-1	
Temperature resistance	+70°C	IVK/Pkt.5	
Color fastness to light	6+	BS EN ISO 105-B02	
	SUPPORT		
Material	PES	DIN EN ISO 2076	
Thread	2230 dtex	DIN EN ISO 2060	
Armor	P 2/2	ISO 3572	



#### **Coatings and finishes:**

Coating type: ALCRYN

Application: Enviro pro hydrocarbon tanks A





LACK a company of FREUDENBERO
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Total weight	1300 g/m²	EN ISO 2286-2					
Warp / weft breaking resistance	2800 / 2500 N/50 mm	EN ISO 1421/V1					
Warp / weft tear resistance	250 / 250 N	DIN 53363					
Adhesion	30 N/cm	PA 09.03 (intern)					
Cold resistance	-30°C	EN 1876-1					
Temperature resistance	+100°C	PA 07.04 (intern)					
Color fastness to light	> 6 Note, Value	EN ISO 105 B02					
Methane gas permeability	<150 cm <sup>3</sup> /m <sup>2</sup> .24h. bar	DIN 53380-2					
Bending resistance No breakage	100000 x	DIN 53359 A / DIN EN 7854 B					
SUPPORT							
Material	PES	DIN EN ISO 2076					
Thread	1100 dtex	DIN EN ISO 2060					
Armor	L 1/1	ISO 3572					



#### **Coatings and finishes:**

Coating type: PVC

Application: Effluent, liquid fertilizer, slurry

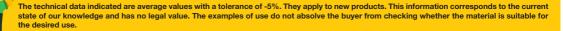




REY a company of FREUDENBERG

Cattle	Pig	Sheep	Goat	Poultry	Cheese making	Methanization digestate	Industries	Wine industry	
<b>Ø</b>				0			0	0	
Total weight		1400 g/m²		EN ISO 2286-2					
Warp/weft breaking resistance			4200 / 4000 N/50 mm			EN ISO 1421/V1			
Warp/weft tear resistance			500 / 500 N			DIN EN 17679			
Adhesion			20 N/cm			PA 09.03 (intern)			
Cold resist	Cold resistance			-30°C			EN 1876-1		
Temperature resistance			+70°C			PA 07.04 (intern)			
Color fastness to light			> 6 Note, Value		EN ISO 105 B02				
Surface ele	Surface electrical resistance			< 10^11 Ohm		DIN 54345-1			
Methane gas permeability			<300 cm³/m².24h .bar			DIN 53380-2			
Bending resistance No breakage		100000 x		DIN 53359 A					
	SUPPORT								
Material	Material			PES			DIN EN ISO 2076		
Thread				1100 dtex		DIN EN ISO 2060			
ACTO W			P 2/2			ISO 3572			

**TYPE OF EFFLUENT** 





#### **Coatings and finishes:**

Coating type: PVC Application: Potable water





Total weight	930 g/m²	EN ISO 2286-2			
Warp/weft breaking resistance	4300 / 4000 N/50 mm	EN ISO 1421/V1			
Warp/weft tear resistance	450 / 450 N	DIN 53363			
Adhesion	20 N/cm	PA 09.03 (intern)			
Cold resistance	-30°C	EN 1876-1			
Temperature resistance	+70°C	PA 07.04 (intern)			
Color fastness to light	>6 Note, Value	EN ISO 105 B02			
Bending resistance No breakage	100000 x	DIN 53359 A			
SUPPORT					
Material	PES	DIN EN ISO 2076			
Thread	1100 dtex	DIN EN ISO 2060			
Armor	L 1/1	ISO 3572			
Note	For flexible drinking water tank, Tested according to the standard AS/NZS 4020: 2018				







## IX. Dimensions

VOLUME EN M <sup>3</sup>	LONGUEUR	LARGEUR	HAUTEUR
0,3 m³	1,20 m	1,00 m	0,40 m
0,5 m³	1,23 m	1,48 m	0,40 m
1,0 m³	1,35 m	2,96 m	0,40 m
2,0 m <sup>3</sup>	2,30 m	2,96 m	0,45 m
3,0 m³	2,85 m	2,96 m	0,60 m
4,0 m³	3,30 m	2,96 m	0,65 m
5,0 m³	3,90 m	2,96 m	0,70 m
6,0 m <sup>3</sup>	4,40 m	2,96 m	0,75 m
8,0 m <sup>3</sup>	5,30 m	2,96 m	0,80 m
10,0 m³	6,20 m	2,96 m	0,90 m
15,0 m³	5,30 m	4,44 m	1,00 m
20,0 m³	6,50 m	4,44 m	1,10 m
25,0 m³	7,60 m	4,44 m	1,20 m
30,0 m³	6,30 m	5,92 m	1,25 m
40,0 m³	7,50 m	5,92 m	1,40 m
45,0 m³	8,15 m	5,92 m	1,40 m
50,0 m³	8,80 m	5,92 m	1,40 m
60,0 m³	10,00 m	5,92 m	1,50 m
70,0 m³	11,40 m	5,92 m	1,50 m
80,0 m³	8,50 m	8,88 m	1,60 m
100,0 m <sup>3</sup>	10,00 m	8,88 m	1,60 m
120,0 m <sup>3</sup>	11,70 m	8,88 m	1,60 m
150,0 m³	14,30 m	8,88 m	1,60 m
160,0 m³	15,10 m	8,88 m	1,60 m
180,0 m³	12,40 m	11,84 m	1,60 m
200,0 m <sup>3</sup>	13,60 m	11,84 m	1,60 m
250,0 m³	19,40 m	10,36 m	1,60 m
300,0 m <sup>3</sup>	19,70 m	11,84 m	1,60 m
350,0 m <sup>3</sup>	20,10 m	13,32 m	1,60 m
400,0 m <sup>3</sup>	20,40 m	14,80 m	1,60 m
450,0 m <sup>3</sup>	20,60 m	16,28 m	1,60 m
500,0 m <sup>3</sup>	22,70 m	16,28 m	1,60 m
600,0 m <sup>3</sup>	24,60 m	17,76 m	1,60 m
800,0 m <sup>3</sup>	29,70 m	19,24 m	1,60 m
1 000,0 m³	31,70 m	22,20 m	1,60 m

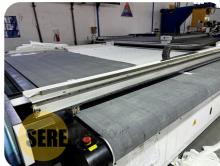




Manufacture of a 1000 m<sup>3</sup> tank



High Frequency welding machine on 30 metre long table





**Automatic cutting table** 

## **CONTACT US**



## **Our distributor**

PFC Ltd.

Middle Barlington Roborough Winkleigh Devon EX19 8AG, United Kingdom Tél.: (+44) (0)7523 270 710 victor@pfc-eu.com www.mycistern.uk







## Follow us:









