

# W-Tank®



Patented product



# Storage Tanks

## Technical Specifications:

Storage Tanks - Technical Specifications										
Number of Plates Units	Diameter m	Slab Diameter m	Volume m <sup>3</sup>							
	D	D1	H=1	H=2	H=3	H=4	H=5	H=6	H=7	H=8
6	4.2	5.0	14	28	42	55	69	83	97	111
8	5.4	6.3	23	46	69	92	115	137	160	183
11	7.3	8.2	42	84	126	167	209	251	293	335
14	9.3	10.2	68	136	204	272	340	408	476	543
17	11.3	12.1	100	201	301	401	501	602	702	802
20	13.2	14.1	137	274	411	547	684	821	958	
24	15.9	16.7	199	397	596	794	993	1,191	1,390	
28	18.5	19.8	269	538	806	1,075	1,344	1,613		
32	21.1	22.4	350	699	1,049	1,399	1,748	2,098		
36	23.7	25.0	441	882	1,323	1,765	2,206			
40	26.4	27.7	547	1,095	1,642	2,190	2,737			
44	29.0	30.3	661	1,321	1,982	2,642	3,303			

Special solutions for specific client needs are available.



4m high W-Tank® storage tank buried 2m into the ground.



Two 5m high W-Tank® storage tanks with a diameter of 13.2m and a volume of 684m<sup>3</sup>.

## Storage Tank Supply Kit:

- Plates.
- 3 Flanges up to DN150.
- Manhole of Ø500mm screwable on site.
- Screws - washers - nuts - gaskets.
- Sealing mortar, concrete base joint and mortar sealing paint.
- Instructional assembly video.
- Data sheet and specifications.
- Conformity drawing, construction plan of slab, anchorage and seal.



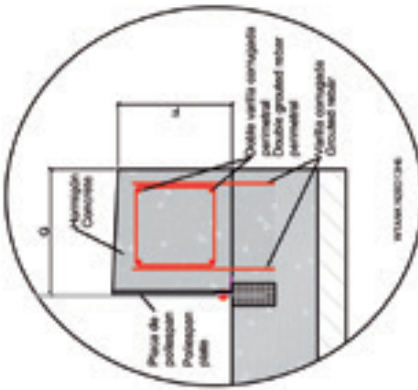
5m high W-Tank® storage tank with a volume of 993m<sup>3</sup> and 3m high W-Tank® storage tank with a volume of 126m<sup>3</sup>.



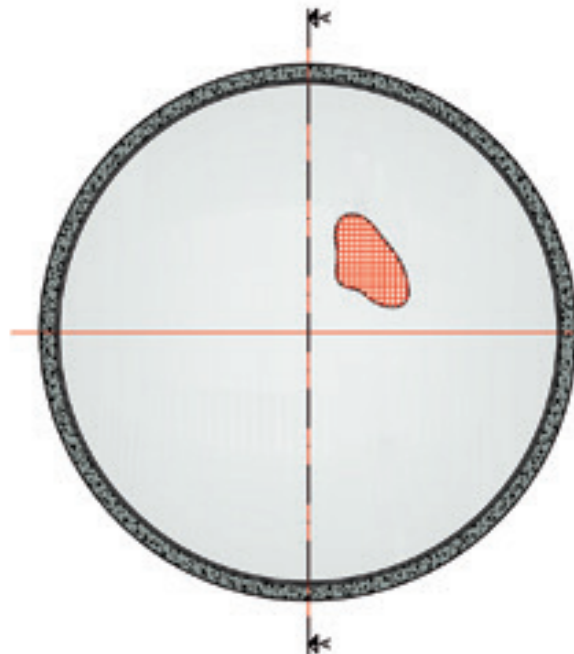
SECCIÓN A-A  
SECTION A-A



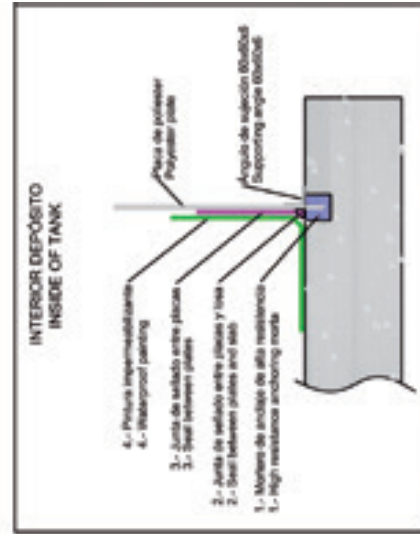
VISTA ISOMÉTRICA DEPÓSITO  
ISOMETRIC TANK VIEW



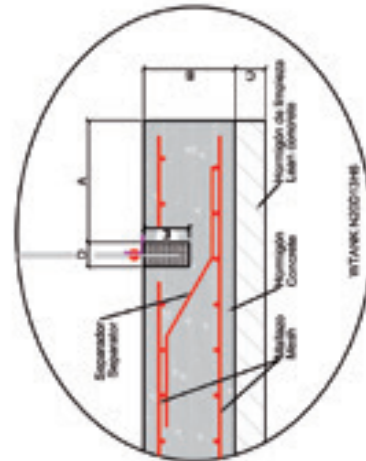
DETALLE DEL ZÓCALO PERIMETRAL  
EDGE DETAIL SOCKET



PLANTA  
TOP VIEW



DETALLE BELLADO E IMPERMEABILIZACIÓN LOSA-PLACA  
DETAILED VIEW OF SLAB-PLATE SEAL AND WATERPROOFING



DETALLE DE LA UNIÓN LOSA - PLACA  
DETAIL OF THE JUNCTION OF THE SLAB AND PLATE



# Settling Tank

## Technical Specifications:

Settling Tanks - Technical Specifications				
Number of Plates Units	Diameter m	Slab Diameter m	Surface m <sup>2</sup>	Max Load per Plate Kg
	D	D1	H=2	
6	4.2	5	14	2,000
8	5.4	6.3	23	2,000
11	7.3	8.2	42	2,000
14	9.3	10.2	68	2,000
17	11.3	12.1	100	2,000
20	13.2	14.1	137	2,000
24	15.9	16.7	199	2,000

Settling tanks and/or thickeners in other heights and diameters at client's request.



2m high W-Tank® settling tank.



W-Tank® settling tank.

## Settling Tank Supply Kit:

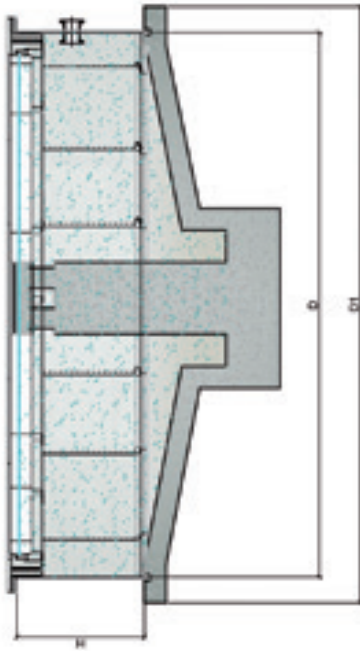
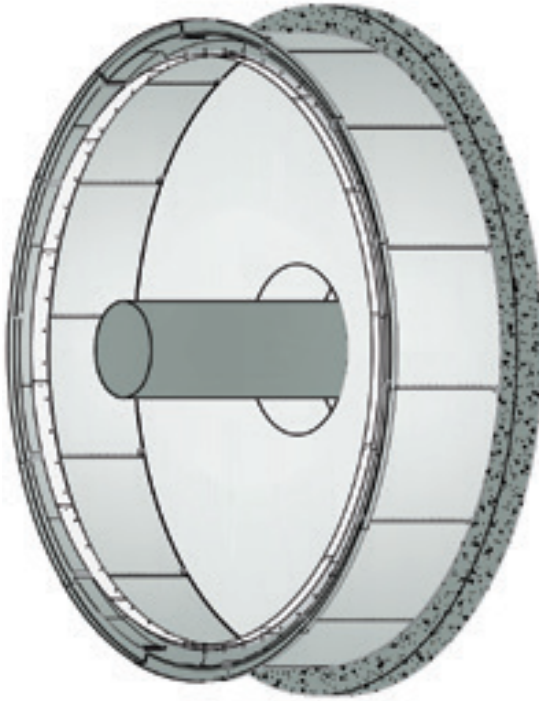
- The settling tanks are delivered with the same kit as the storage tanks, in particular:
  - 1 Floating particles outlet flange of DN150 and 1 water outlet flange of DN250.
  - Adjustable trapezoidal weir in GRP.
  - Deflector of grease and floatants in GRP.
  - Screws and supports in AISI 304.
- Excluded:
  - Settling tank tower and dome.
  - Scraper bridge.
  - Concrete for rolling edge.
  - Chest of floatants.



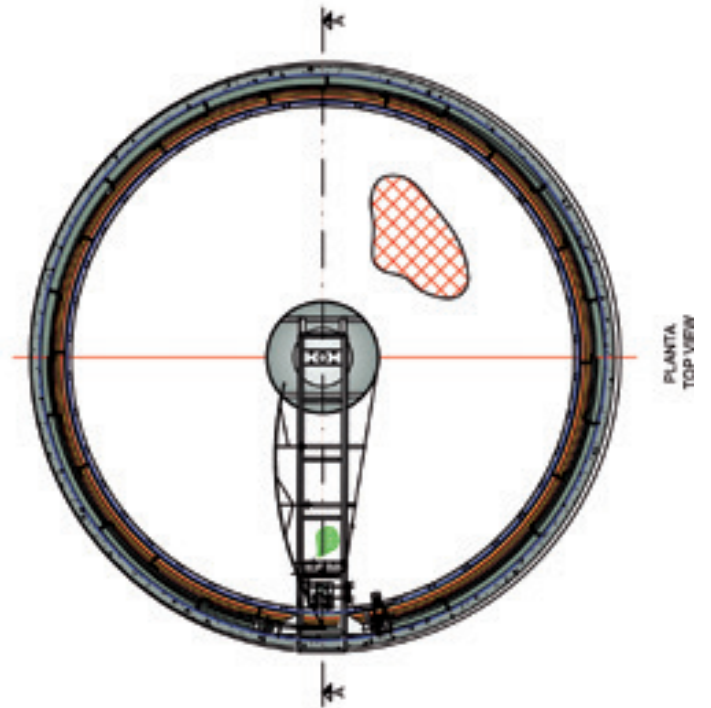
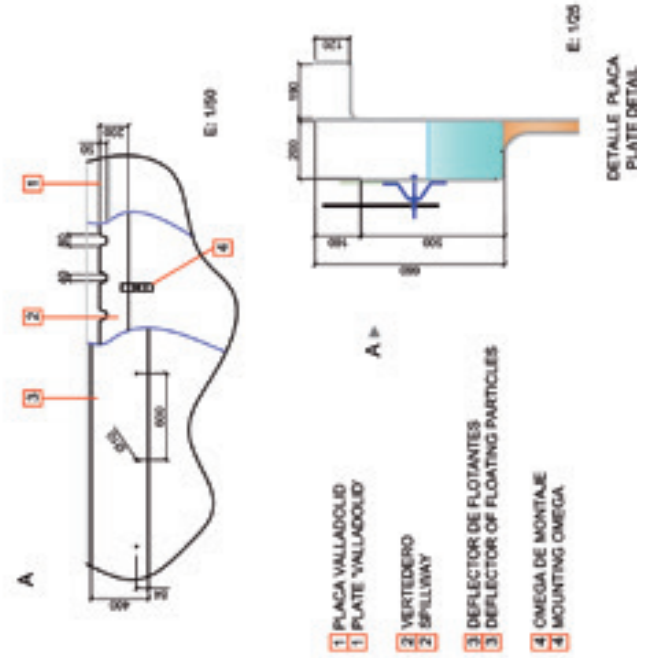
Settling tank and connections.



Industrial wastewater



VISTA ISOMÉTRICA DEPÓSITO  
ISOMETRIC TANK VIEW



## Technical Specifications:

Storage Tanks		Cover Hypar - Technical Specifications				
Number of Plates Units	Diameter m	Diameter m	Total Height m	Height of each Element m	Transporting Height m	Perimetrical Profile mm
		D	H	h	T	
6	4.2	4.4	1.0	0.6	0.5	-
8	5.4	5.6	1.2	0.8	0.7	-
11	7.3	7.5	1.6	1.0	0.9	-
14	9.3	9.5	2.0	1.3	1.1	□ 40x40x3
17	11.3	11.5	2.4	1.5	1.3	□ 40x40x3
20	13.2	13.5	2.8	1.8	1.6	□ 40x40x3
24	15.9	16.1	3.2	2.0	1.8	□ 40x40x3



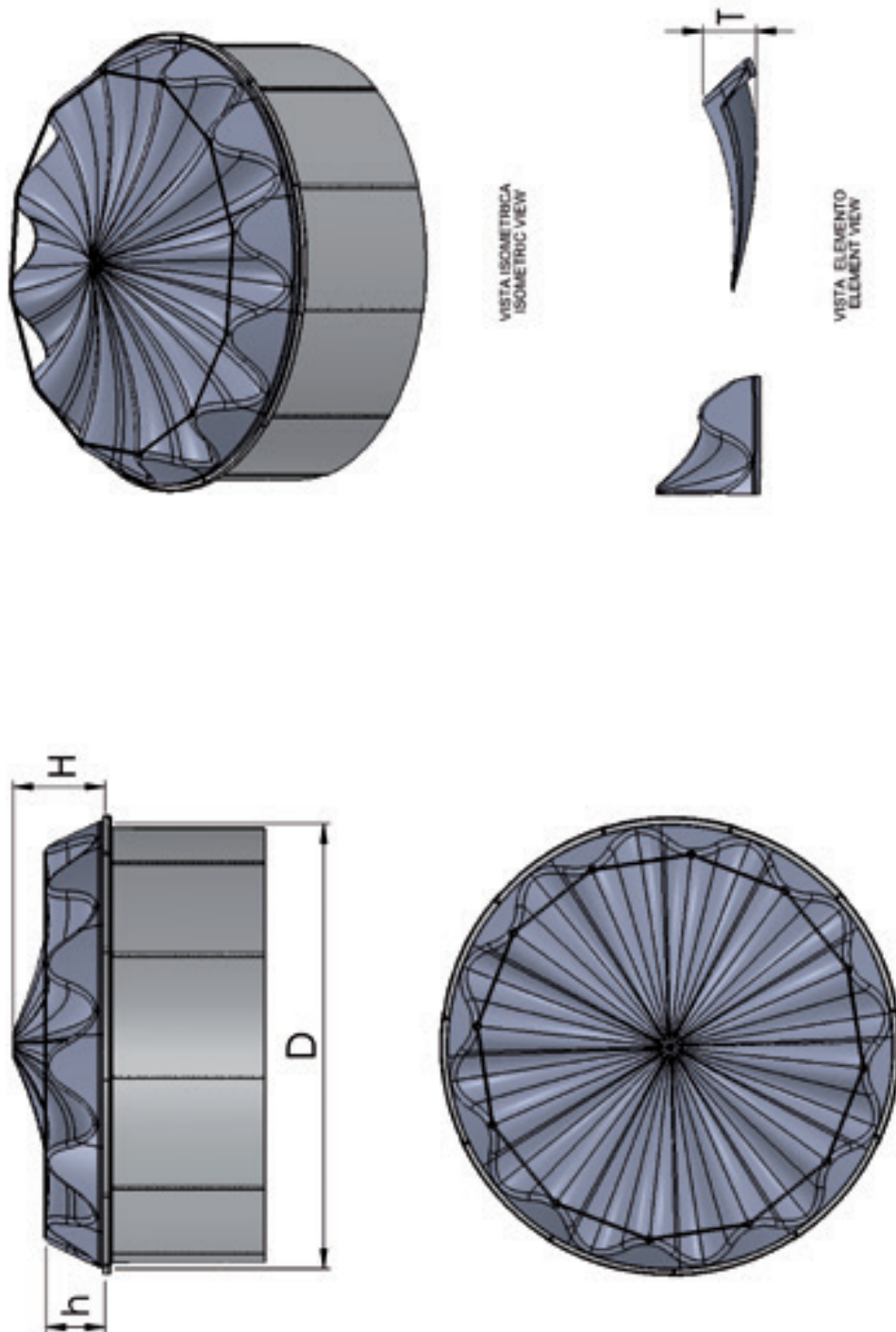
Segment of W-Tank® Cover Hypar.



W-Tank® Cover Hypar.

## Cover Hypar Supply Kit:

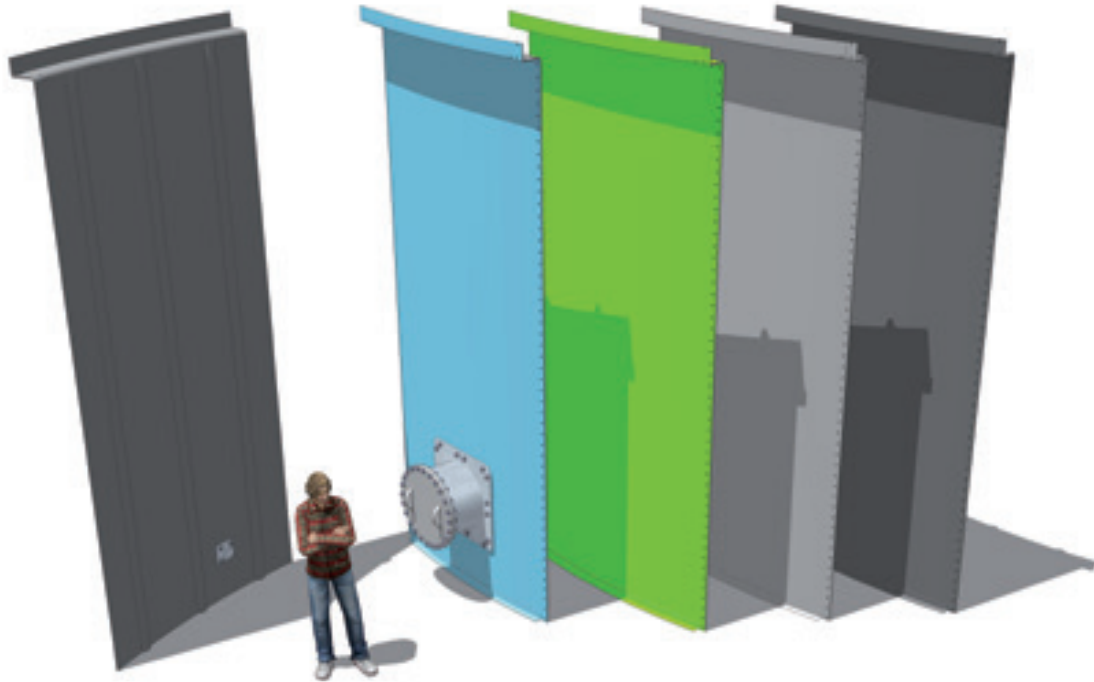
- Elements of the cover.
- Ventilation flange.
- Anchorage supports at the tank.
- Screws - washers - nuts.
- Perimetrical profile.
- Instructional assembly video.
- Data sheet and specifications.
- Conformity drawing, anchorage and seal.





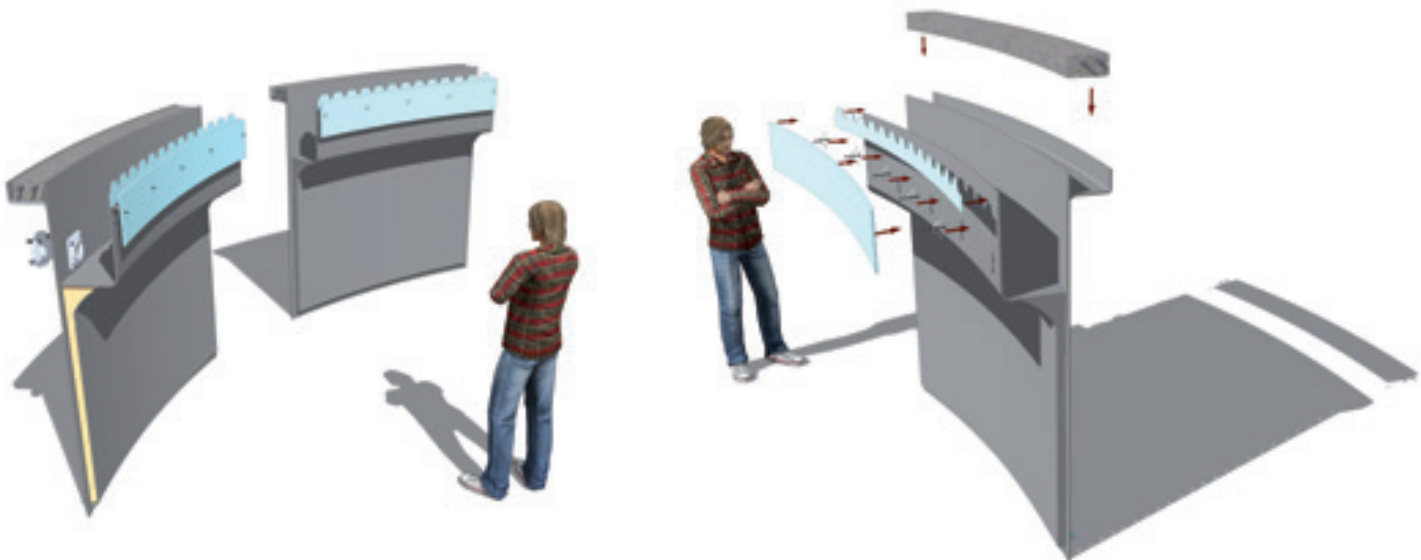
## Plate SALAMANCA:

- Plate Salamanca: flat plate with 3 interior ribs for securing light accessories without loss of water-tightness.
- Rapid mounting of flanges and manholes on site.
- Weight of the plate depends on  $\varnothing$  and height. Max weight: 600kg/plate.



## Plate VALLADOLID:

- Plate Valladolid is specifically for settling tanks with a channel to be filled with self-levelling concrete.
- Decanter incorporated into plates.
- The Valladolid Plate is highly resistant to buckling, thanks to the reinforcement of the isothermal body: which allows to carry the weight of the bridge.
- Clean and hygienic settling tanks, easy to install and maintain.
- Weight of the plate depends on  $\varnothing$  and height. Max weight: 125kg/plate.

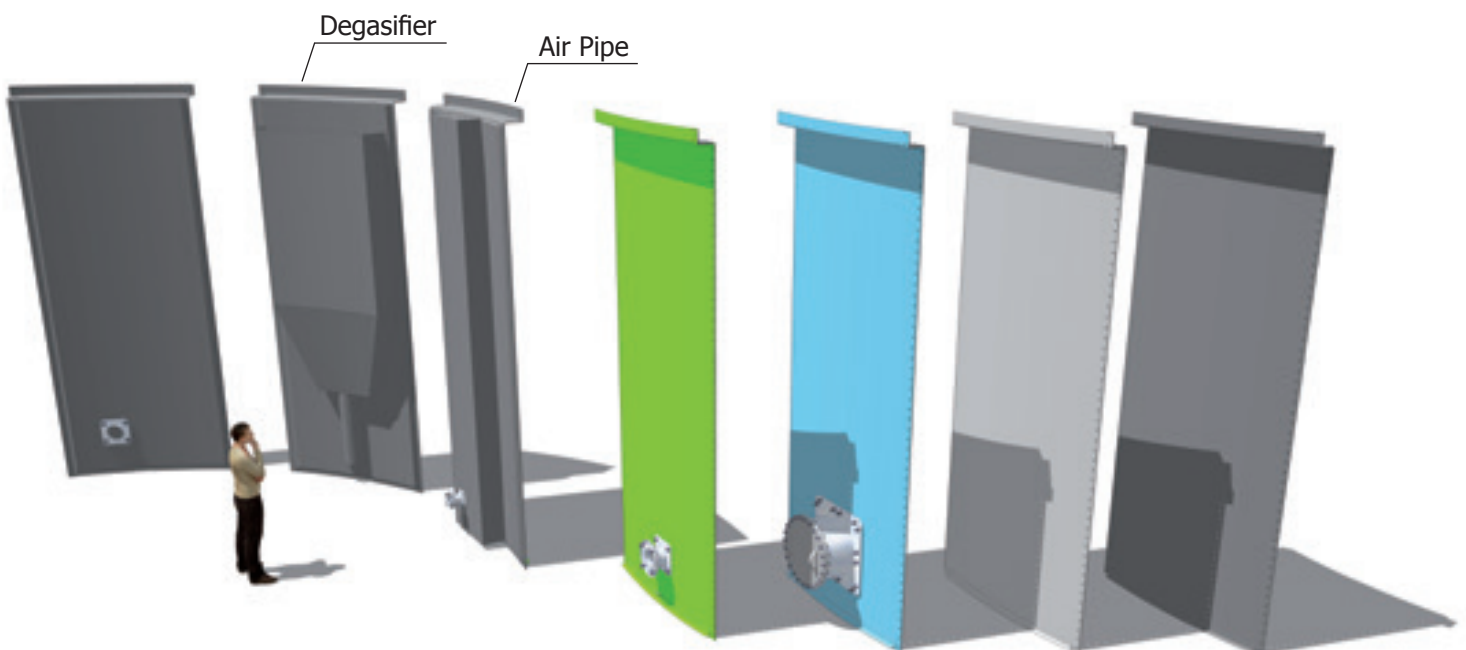




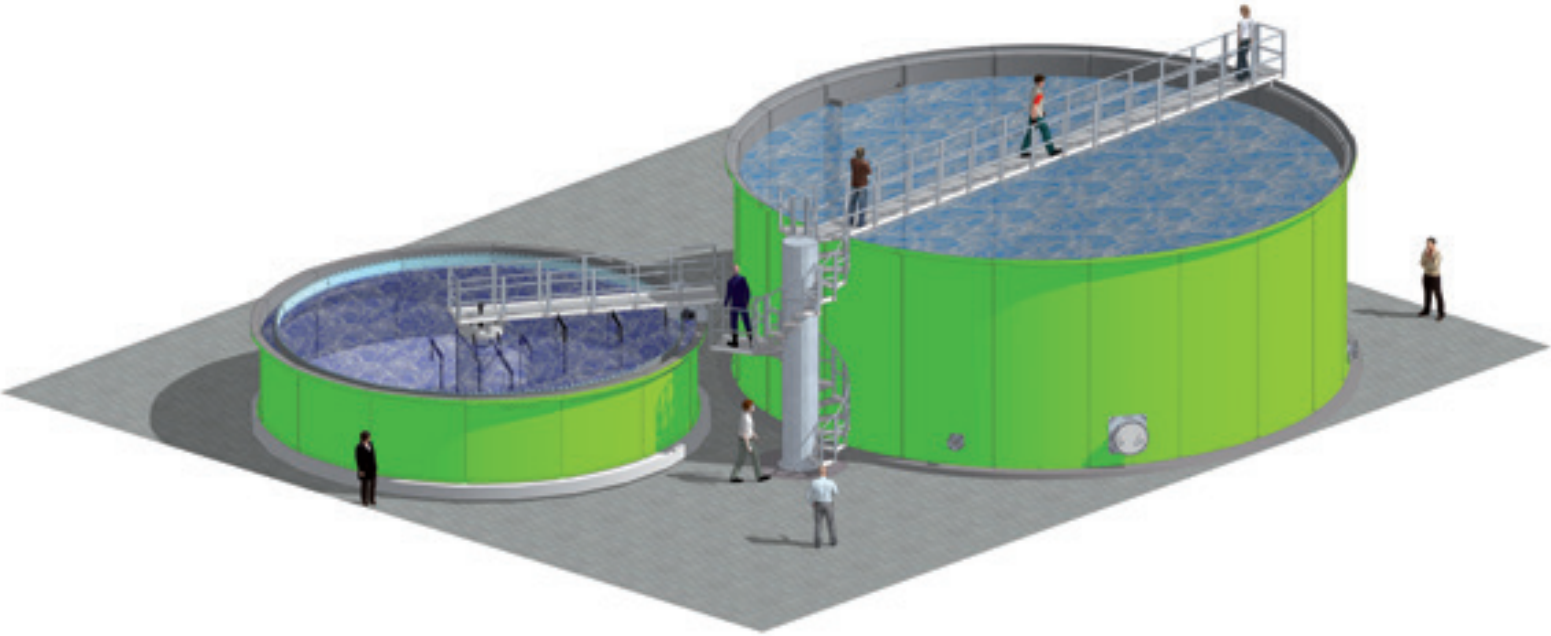
## Plate BURGOS:



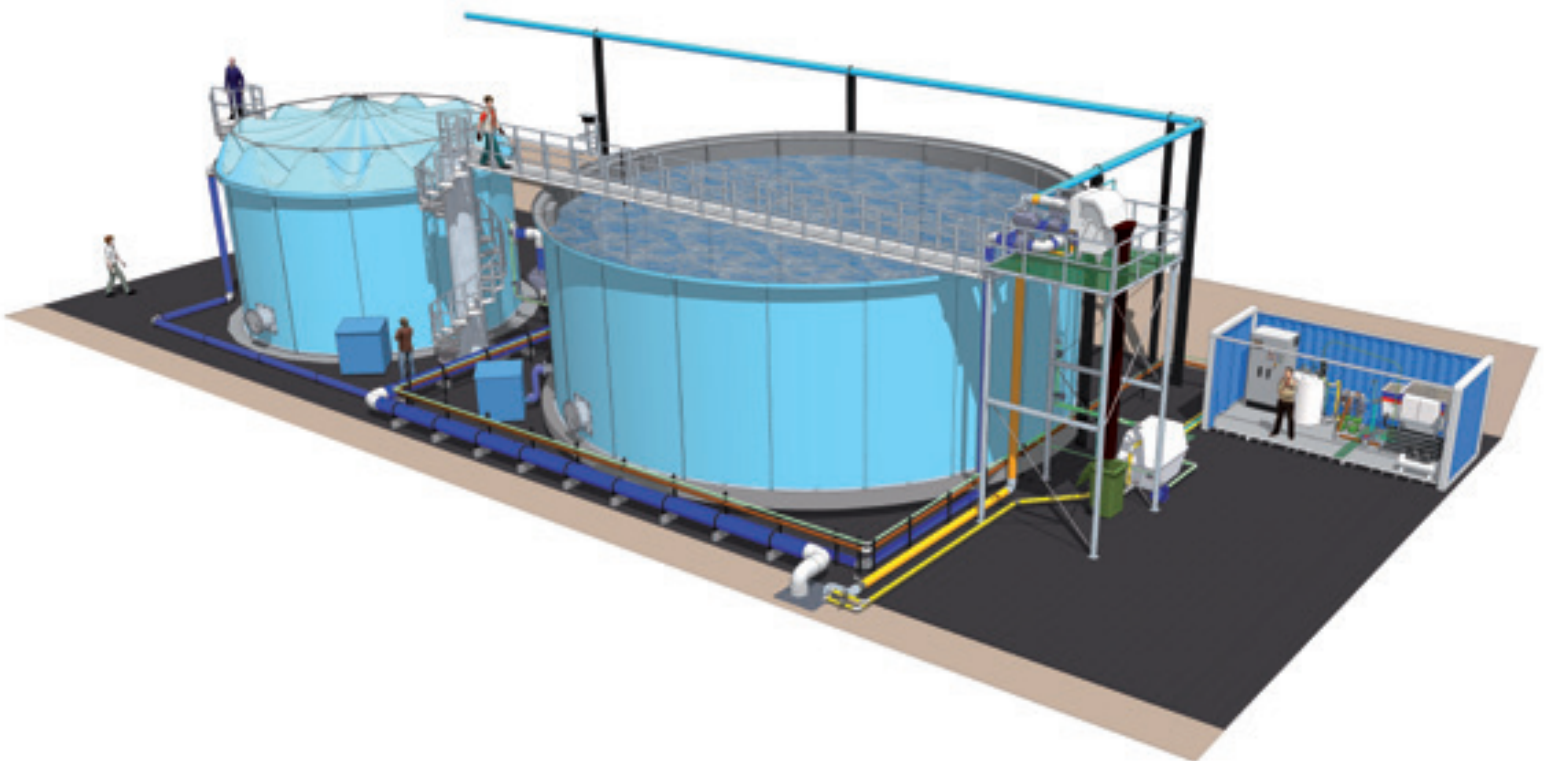
- Has a cellular structure in composite materials, ribbed, which increases its thickness by an additional 45 mm.
- The PUR foam covers the entire plate except the screws and washers.
- Enhanced thermal insulation.
- Vertical load bearing capacity, for example: floating aerator moorings, walkways, buried tanks or tanks inside tanks with different levels of liquid.  
(Ask our engineering department about your case).
- Possibility to fasten and secure elements on the entire interior surface of the plate.
- Optional Degasifier: clean water outlet from settler via overflow incorporated into the plate.
- Optional Air Pipe: ingress and egress of blower air through the plate ascending and descending inside the same.
- Weight of the plate depends on  $\varnothing$  and height. Max weight: 800kg/plate.



Storage Tank and Settling Tank:



Storage Tank and Cover Hydrant:



Ask for access stairs and walkways.

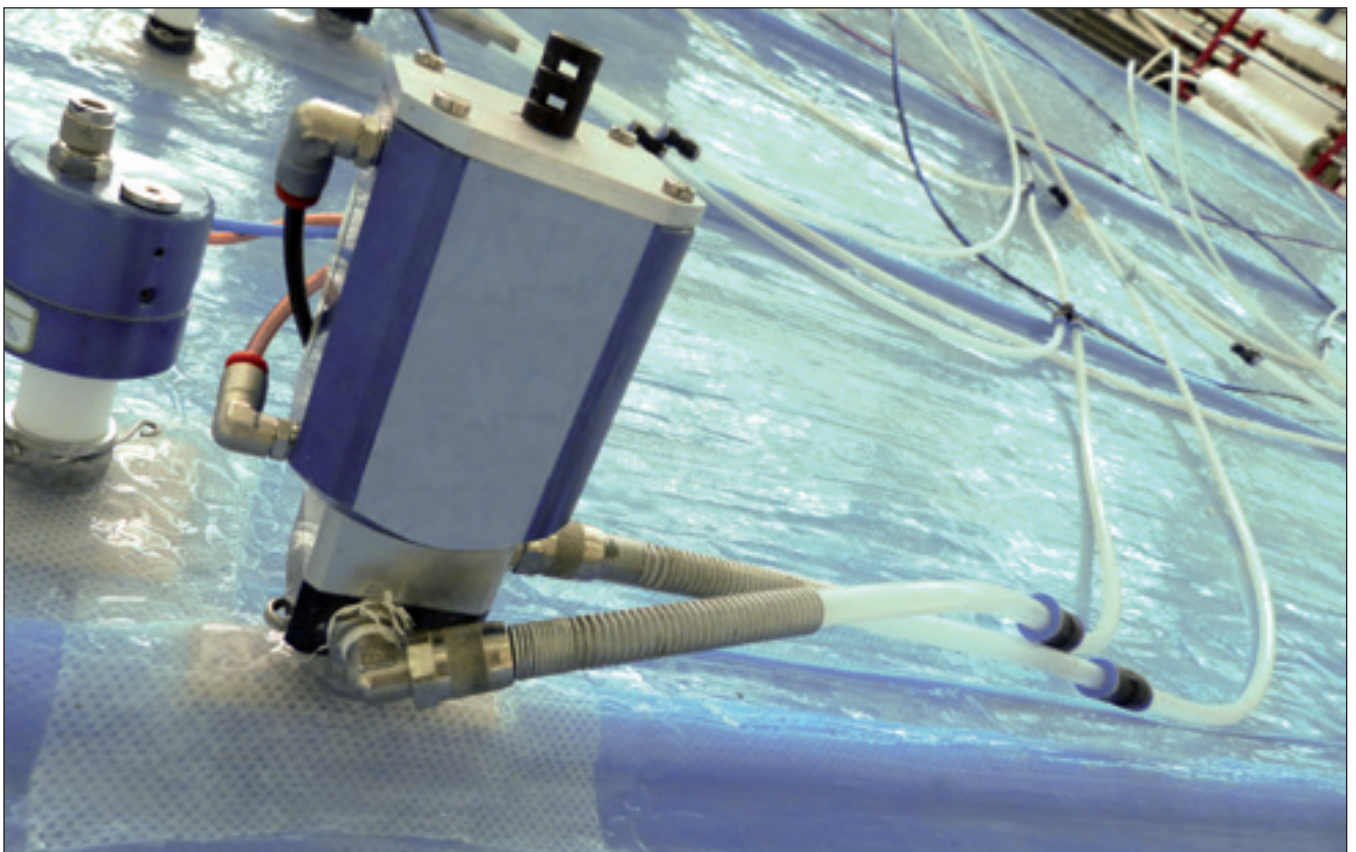
### Flex Molding Fabrication Process:

The Flex Molding process is used to obtain reinforced plastic pieces with high glass fiber content, arranged in the direction of the stress, which leads to high mechanical strength.

It consists of injecting a reactive polymer under pressure into the mold which contains the reinforcement in form of fibers, all of which is done in a controlled vacuum environment.

This process of impregnation (Flex Molding) is used to build pieces in a closed mold, making it an ecological process by eliminating emissions and consumables.

It comprises a mold and a die that performs the sealing with the main mold, a vacuum being created between the two to be able to eliminate the air content. The impregnation of resin is achieved by a pressure difference between the injection and venting points inside the mold. The resin enrichment means that the composite has high external and internal protection against chemical agents.





## Material specifications: ☺ Recommended ☹ Not Recommended

Table of Chemical Resistance of GRP	
Fluid	Isophthalic resin
Wastewater pH 3-9	☺ 40 °C
Sea Water	☺ 50 °C
Potable Water	☺ 70 °C
Hydrochloric acid 15%	☺ 70 °C
Hydrochloric acid 20%	☺ 70 °C
Hydrochloric acid 35%	☺ 40 °C
Sulphuric acid 10%	☺ 70 °C
Sulphuric acid 77%	☹
Acetic acid 10%	☺ 30 °C
Acetic acid 70%	☺ 35 °C
Acetic acid 100%	☹
Benzyl alcohol	☺ 30 °C
Ethanol 96-100%	☺ 30 °C
Caustic soda 10%	☹
Caustic soda 25%	☹
Caustic soda 50%	☹
Methanol 100%	☺ 35 °C
Gasoline	☺ 40 °C
Kerosene	☺ 50 °C

(For strength and specialty chemicals production temperatures in vinylester)

### Physical Characteristics:

Barcol Hardness, GRP	> 45°
Content in Glass, GRP	55 - 65 %
Tensile Strength, GRP *	300 - 400 MPA
Modulus of Elasticity, GRP	20 GPa
Deformation at Breakage, GRP	6 - 7 %
Bending Strength, GRP **	3,300 - 5,000 MPA
Coefficient of Conductivity, GRP ***	0.2 w/m°k
Coefficient of Conductivity, PUR	0.023 w/m°k
Density, PUR	35 k/m³

\* Tensile tests carried according to ISO 927-4/2/2.

\*\* Tests carried out on test specimens 7.5 mm. Three point test.

\*\*\* Thermal conductivity UNE - EN 12667.

The values vary depending on the different compositions and thickness of the various models.

### Composition of the plate from inside to outside:

- Chemical barrier achieved with:
  - Isophthalic Top Coat, 600 microns (nautical quality). Treated to withstand UVA.
  - Glass cap of 1 mm 150 gr/m², special isophthalic resin enrichment in Stratified with high content in high-tensile glass using isophthalic resins.
- Laminated high glass content of high tensile modulus performed on isophthalic resins.
- External chemical barrier: isophthalic Gel Coat 600 microns (nautical quality). Treated to withstand UVA.

The isophthalic resin is authorized for foodstuff applications, such as drinking water for example. Vinylester can be applied on the inside sheet in case of specific liquids or high temperatures.

### Other materials utilized:

Screws in standard applicable format, AISI 304, optional: AISI 316, 316L Duplex.

Gasket of EPDM, ethylene propylene diene monomer or EPDM rubber, an elastomer that offers good resistance to friction and wear. Good resistance to atmospheric agents, acids and alkalis, and chemical products in general. The working temperature varies between -40 and 140 °C.

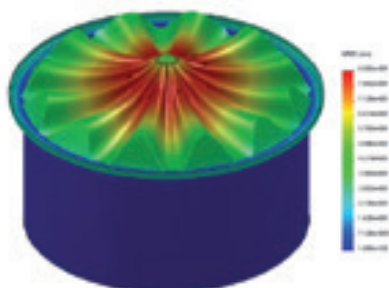
The Teflon washer (PTFE) is a practically inert polymer that does not react with other chemical substances thanks to the protection of fluorine atoms. It has a very low friction coefficient and high impermeability, and maintains its properties in humid atmospheres. It is extremely flexible, is unaffected by the action of light and is able to withstand temperatures from -270°C up to 270 °C.

Internal PUR cores as in the Burgos Plate and Valladolid Plate.

High resistance and self-levelling mortar with low contraction coated with elastic non-harmful paint.

## Tests and Calculations:

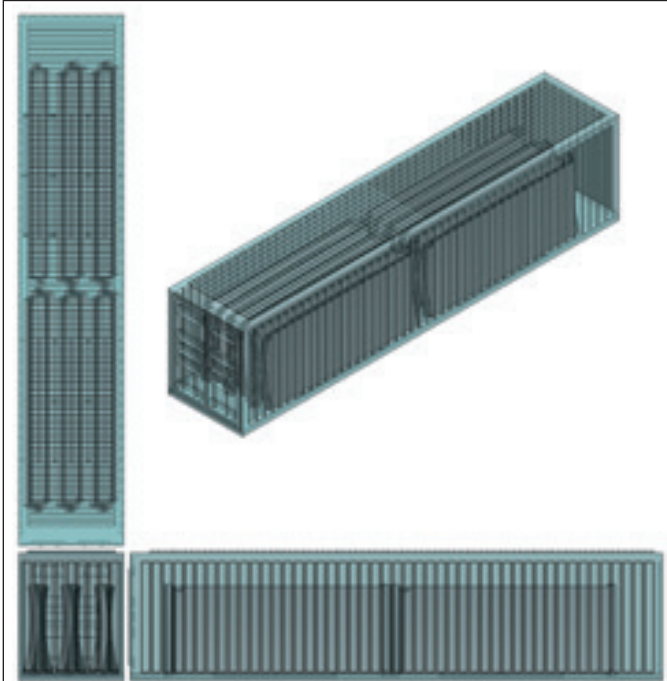
- The Storage Tanks, Settling Tanks and Covers have been studied and subjected to different quality trials and tests with the collaboration of:





## Supply:

- The W-Tank® plates are delivered in metal or wooden boxes, facilitating transportation as a whole.
- The storage tanks, settling tanks and covers can be transported in 20-foot and 40-foot marine containers as well as on a conventional truck.
- The easy transportation allows the W-Tank® to be shipped to any part of the world.



Forty-foot container with 1 W-Tank® Storage Tank consisting of 44 plates Salamanca, H=5m, D=29m and capacity of 3,303 m<sup>3</sup>.



## Assembly:

- The W-Tank® storage tanks and settling tanks are easily and quickly assembled with little logistics.
- The product allows dismantling and changing of location for re-use in another place.
- Instructions and instructional assembly video are attached.



## Optional Items

Standard ☒ and Optional ☐ items:

BODY:	STORAGE TANK	SETTLING TANK	COVER
Composite Material – Isophthalic Resin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Composite Material – Vinylester Resin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connection flanges included in the supply kit	3 <input checked="" type="checkbox"/>	2 <input checked="" type="checkbox"/>	1 <input checked="" type="checkbox"/>
Manhole Ø500 mm included in the supply kit	1 <input checked="" type="checkbox"/>	<input type="checkbox"/>	-
Top entrance hole	-	-	<input type="checkbox"/>
Exterior staircase	<input type="checkbox"/>	<input type="checkbox"/>	-
Internal/external ladder	<input type="checkbox"/>	<input type="checkbox"/>	-
Hexadecagon ladder	<input type="checkbox"/>	<input type="checkbox"/>	-
Diametric walkway	<input type="checkbox"/>	<input type="checkbox"/>	-
DOCUMENTATION:	STORAGE TANK	SETTLING TANK	COVER
Conformity drawing – construction of slab – anchorage and sealing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data sheet and specifications	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Instructions and instructional assembly video	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CERTIFICATIONS:	STORAGE TANK	SETTLING TANK	COVER
Quality certification	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Warranty certification	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sampling and testing certification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COLOR:	STORAGE TANK	SETTLING TANK	COVER
RAL 7005 - Mouse Grey	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RAL 6018 - Yellow Green	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RAL 5012 - Light Blue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RAL 7042 - Traffic Grey A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER ITEMS:	STORAGE TANK	SETTLING TANK	COVER
Lifting for assembly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Assembly and Dismantling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rotary Screen 40&63 Defender®	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rotary Screen HPS M&L Defender®	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Static Screen Defender®	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### NOTES:

- The optional equipment has an additional cost. Request information and quotation.
- Technical developments can alter some specifications. See [www.toroequipment.com](http://www.toroequipment.com) to find the most up-to-date information.



## Colors:

- The W-Tank® Storage Tanks, Settling Tanks and Covers are manufactured in a standard Mouse Grey colour, both inside and out.



Standard Color. RAL 7005 - Mouse Grey.

- 3 external colors are available as options:



Traffic Grey A, RAL 7042.



Yellow Green, RAL 6018.



Light Blue, RAL 5012.



## Advantages and Applications:

### • ADVANTAGES:

- Tank free from corrosion and oxidation.
- Very light.
- Easily transportable.
- Can be installed anywhere in the world.
- Minimal assembly time.
- Easily dismantled and re-used.
- Minimum maintenance.
- Easily installed accessories.

### • APPLICATIONS:

- Industrial wastewaters.
- Municipal wastewaters.
- Potable water.
- Desalination.
- Dry products in bulk.
- Agriculture.
- Industrial liquids.
- Bioenergy.
- Biodigester.
- Separation in existing deposits.



## Worldwide References



Argentina  
 Australia  
 Belgium  
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 Canada  
 Chile  
 China  
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 France  
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 Venezuela



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Factory La Cistémiga - Valladolid



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 Storage Tanks, Settling Tanks  
 and Covers  
**W-Tank®**