



মীম ওয়াটার
টেকনোলজি লিমিটেড

Meem Water Technology Ltd.

FRP VESSEL

2023

EDITION FOR
MWTL CATALOG



MEEM WATER TECHNOLOGY LTD.

A TRUSTWORTHY SOURCING EXPERT ON WATER TREATMENT FACILITIES

As a senior sourcing expert on water treatment facilities and accessories, Meem Water Technology Ltd. has extensive water treatment expertise, profound water treatment industry experience and a deep understanding of the water treatment industry purchasing demands. As a consequence, we are capable of providing one-stop purchase and technical support on water treatment facilities and accessories according to our customers' applications, thereby helping our customers to shorten the procurement cycle, reduce procurement costs and maximize economic benefits.

We integrate upstream supply chain products of the water treatment industry. In addition, we work with renowned suppliers and manufacturers. As a result, we can continuously supply high-quality water treatment components and systems for customers across the world to meet the needs of a Wide Range of Applications, Thereby Optimizing Water Resources and Promoting The Sustainable Development of The Global Environment.



MEEM WATER
TECHNOLOGY LTD.



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FRP Vessel

FRP Vessels are a kind of non-metallic composite tank reinforced by winding resin and glass fiber together through microcomputer controlled machine. FRP tanks can load filter materials such as ion exchange resins, quartz sand and activated carbon to remove calcium ions, magnesium ions, suspended solids, sediment, color, odor, etc. compared With the traditional water treatment tanks, FRP Vessels feature light weight, high strength, good corrosion resistance, thermal performance, good electrical performance, leakage free, easy shipping and installation, etc. It is widely used in petroleum, food, pharmaceutical, printing and dyeing industries.

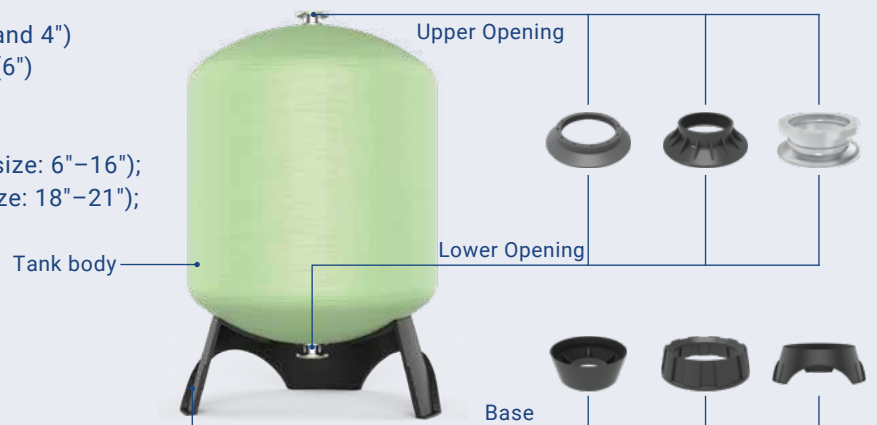
Our products come in a wide range of models and are both NSF and CE certified.



Universal FRP Vessels Structure

Universal FRP tanks are generally composed of upper opening, lower opening (except for 2.5" and part of 4"), vessel body and a base.

- Opening
 - PPO material, thread connection (2.5" and 4")
 - Aviation aluminum, flange connection (6")
- Base
 - Standard base: reinforce plastic (tank size: 6"–16");
 - Round base: reinforced plastic (tank size: 18"–21");
 - Tripod base: FRP (tank size: 24"–80")



Material



Liner

It is made of food grade PE material with excellent chemical resistance and is integrally molded by rotational molding and blow molding. The finished product features seamless connection, high pressure resistance and leakage free.



FRP Vessel Body

The FRP vessel body outside the liner is made of reinforced glass fiber and high performance epoxy resin by 3D winding.

Opening & Port



Size	2.5"	4"	6"
Material	PPO		Aviation aluminum
Structure	Thread		Flange
Features	Enhanced PPO modified plastic material complies with general international thread standards, featuring high strength, good pressure resistance, low thermal deformation, abrasion resistance, fouling resistance, etc.		Aviation aluminum modified material can be applied to various complex media conditions. It has a more stable pressure bearing capacity and a longer service life.

The port size varies, so does the port material.

Base



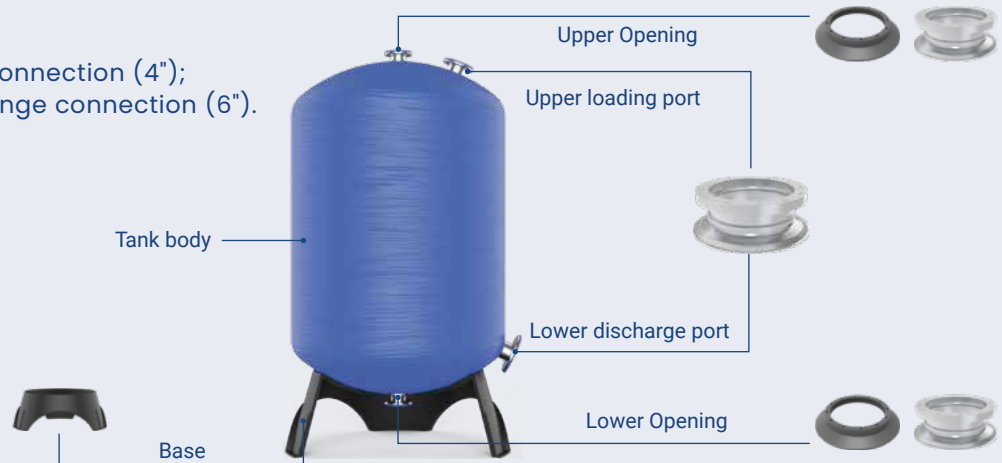
Base	Standard Base	Round Base	Tripod Base
Material	Reinforced plastics	Reinforced plastics	Reinforced glass fiber
Applicable range	6"-16"	18"-21"	24"-80"

The base shape varies, so does the base material.

FRP Tanks with Upper Loading / Lower Discharge Part Structure

FRP tanks with upper loading / lower discharge port are typically composed of upper and lower openings, tank body, (upper loading port), lower discharge port and a base.

- Opening & Port
 - PPO material, thread connection (4");
 - Aviation aluminum, flange connection (6").
- Base
 - FRP tripod base



Universal FRP Vessels

Universal FRP vessels are generally available in original and blue colors; It comes in a full range of sizes with a diameter of 6"-80" and a height of 10"-79"; It is both NSF and CE certified. Both colors and models can be customized upon request.

Universal FRP vessels are provided with an upper opening and a lower opening to facilitate medium loading and unloading.



Coding Rules

2162-4" -4"

Body size

Diameter: 21"; height: 62"

Upper opening size

4"

Lower opening size

4" (if there is blank, it indicates that the FRP vessel is not provided with a lower opening)

Specification of Universal FRP Vessel

Model (inch)	Vessel Size (inch)	Capability		Opening	
		mm	Liters	Top	Bottom
MW-610	6x10	155x260	3.1	2.5"-NPSM	/
MW-613	6x13	155x335	4.6	2.5"-NPSM	/
MW-618	6x18	155x460	6.6	2.5"-NPSM	/
MW-629	6x29	155x740	11.1	2.5"-NPSM	/
MW-635	6x35	155x890	13.7	2.5"-NPSM	/
MW-813	8x13	205x335	7.7	2.5"-NPSM	/
MW-817	8x17	205x438	10.9	2.5"-NPSM	/
MW-835	8x35	205x890	25	2.5"-NPSM	/
MW-844	8x44	205x1130	32.1	2.5"-NPSM	/
MW-1035	10x35	255x905	38.4	2.5"-NPSM	/
MW-1044	10x44	255x1130	49.5	2.5"-NPSM	/
MW-1054	10x54	255x1380	63.3	2.5"-NPSM	/
MW-1248	12x48	300x1225	78.9	2.5"-NPSM	/
MW-1252	12x52	300x1340	85.8	2.5"-NPSM	/
MW-1265	12x65	300x1650	105.3	2.5"-NPSM	/
MW-1354	13x54	335x1398	104.5	2.5"-NPSM	/
MW-1465	14x65	355x1650	145.1	2.5"-NPSM	/
MW-1665/2.5"	16x65	400x1670	183	2.5"-NPSM	/
MW-1665/4"	16x65	400x1670	183	2.5"-NPSM	/

Specification of Universal FRP Vessel

Model (inch)	Vessel Size (inch)	Capability		Opening	
		mm	Liters	Top	Bottom
MW-1865/4"	18x65	450x1670	253	4"-8UN	/
MW-2169/4"	21x69	530x1750	316	4"-8UN	/
MW-2169/4"-4"	21x69	530x1590	316	4"-8UN	4"-8UN
MW-2472/4"	24x72	600x1850	415	4"-8UN	/
MW-2472/4"-4"	24x72	600x1850	415	4"-8UN	4"-8UN
MW-2487/4"-4"	24x87	600x2200	510	4"-8UN	4"-8UN
MW-3072/4"	30x72	750x1850	640	4"-8UN	/
MW-3072/4"-4"	30x72	750x1850	640	4"-8UN	4"-8UN
MW-3087/4"-4"	30x87	750x2200	782	4"-8UN	4"-8UN
MW-3672/4"-4"	36x72	900x1850	850	4"-8UN	4"-8UN
MW-3694/6"F-6"F	36x94	900x2400	1205	6"-flange	
MW-4072/4"	40x72	1000x1850	1050	4"-8UN	/
MW-4072/4"-4"	40x72	1000x1850	1050	4"-8UN	4"-8UN
MW-4272/6"F-6"F	42x72	1070x1850	1100	6"-flange	
MW-4094/6"F-6"F	40x94	1000x2400	1370	6"-flange	
MW-4294/6"F-6"F	42x94	1070x2400	1465	6"-flange	
MW-4872/6"F-6"F	48x72	1200x1850	1308	6"-flange	
MW-4894/6"F-6"F	48x94	1200x2400	1909	6"-flange	
MW-6094/6"F-6"F	60x94	1500x2400	2688	6"-flange	
MW-6383/6"F-6"F	63x83	1600x2100	2580	6"-flange	
MW-6394/6"F-6"F	63x94	1600x2400	3150	6"-flange	
MW-7294/6"F-6"F	72x94	1800x2400	3950	6"-flange	



Water Purification System

Pre-Filter Systems



Water Softener System

Water softener tanks will load ion exchange resins as filter material to mainly remove calcium and magnesium ions from water without lowering the salt content of water. It often works with water distributors, brine tanks and multiport control valves.



Multimedia Filter System

The filter materials in the FRP tank are generally 2 kinds and more, and common filter materials include quartz sand, activated carbon, manganese sand, etc. It is mainly used to remove impurities such as sediments, suspended solids, colloids as well as organism like algae, and lower the mechanical damage and fouling of RO membrane elements.



Activated Carbon Filter System

The filter material in the FRP tank is activated carbon. It is mainly used to remove color and odor from water and absorb organics, bacteria, microorganism, colloidal particles as well as metal ions in water.



Manganese Sand Filter System

The filter material in the FRP tank is natural manganese sand. It is mainly used to remove iron and manganese ions.



Quartz Sand Filter System

The filter material in the FRP tank is quartz sand. It is mainly used to remove suspended solids, colloids, sediments and rust.

During the pre-treatment process, depending the feed water quality, water softener systems and filters may work together to meet the feed water requirements in the membrane treatment process.

After-Treatment System

Polishing System

FRP tanks also can loading polishing resin. It is generally used at the end of the process to further improve the water quality. Generally, effluent quality reaches up to 18 MΩ, and factory ions are H⁺ and OH⁻ types that can't regeneration after using.



Related Industries



Food & Beverage



Pharmaceutical



Electronic



Printing, Dyeing & Textile



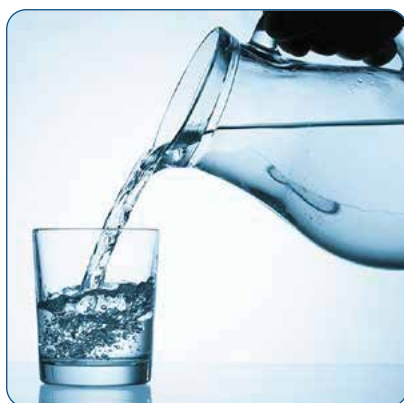
Seawater Desalination



Oil & Gas



Electroplating



Drinking Water



Iron & Steel

Production Process



Unique Design



Every 2.5"/4" opening FRP vessel is provided with a EPE pearl cotton dust cover to prevent the port surface and thread port damage during transportation or human handling as well as keep dust and bacteria from entering the vessel, making it more hygienic and safer.



Every 6" FRP vessel is provided with a dust cover to prevent the port surface and thread opening damage during transportation or human handling as well as keep dust and bacteria from entering the vessel, making it more sanitary and safer.



Positive & negative pressure protection device. The positive & negative pressure valve design can prevent the vessels damage caused by vacuum negative pressure or over pressure.

FRP Vessel Quality Test

A series of tests is proven that our products have good quality stability, exceptional durability and high compressive strength.



1.2 Times of Hydrostatic Pressure Test – Ensuring the Stability of Vessel Quality.

- Test standard: Every FRP vessel goes through hydrostatic pressure test before leaving the factory.
- Test requirements: 1.2 times and above test pressure; 0.4 MPa/s pressure rise rate.
- Test result requirements: FRP vessel is free from seepage/leakage.



100,000 fatigue tests – Ensuring the Durability of the Vessels.

- Test standard
8"–10", sample a vessel every 1000 tanks for testing;
12"–16", sample a vessel every 750 tanks for testing;
18"–24", sample a vessel every 400 tanks for testing;
Larger than 30", sample a tank every 300 vessels for testing.
- Test requirements:
Test pressure is 1.1 times the work pressure;
6–16 times/minutes pressure rise rate;
100,000 fatigue tests, ensuring the durability of the vessel.
- Test result requirements: FRP vessel is free from seepage.



More than 4 times burst pressure test – Ensuring Vessels Quality.

- Test standard
8"–10", sample a vessel every 600 tanks for testing;
12"–16", sample a vessel every 400 tanks for testing;
18"–24", sample a vessel every 250 tanks for testing;
Larger than 30", sample a vessel every 200 tanks for testing.
- Test requirements:
Test pressure is 4 times the work pressure ;
0.4 MPa/s pressure rise rate.
- Test result requirements: FRP vessel is free from seepage.

Packing



Each our product is attached with a label indicating its model, pressure and attention.



Packaging of small diameter FRP vessels in cartons.



We will use a ruler to measure the levelness of the FRP vessel and then pack the tank after confirming the vessel levelness is correct.



Packaging for the larger diameter FRP vessel is plastic bubble wrap.



The maximum space is utilized and the product is put into the container in perfect condition.

Notes: The FRP vessels shall be stored with package before installation. Do not unfold the package before installation.

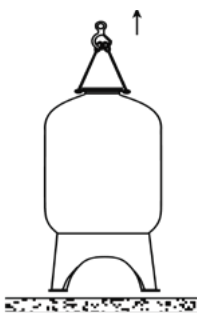
Loading and Installation

For 21" FRP Vesels Loading

FRP Vesels with a diameter of 21" and below shall be handled manually. Please handle with care to prevent falling and collision

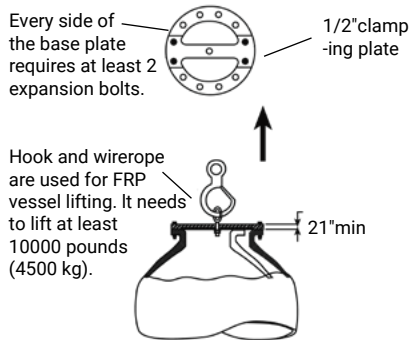
For 24" FRP Vesels Loading

FRP vesels with a diameter of 24" and above shall be handled with a forklift or a crane. If the FRP vessel upper port is provided with a flange, it can be handled by hoisting. If the FRP vessel upper port is not provided with a flange, it can be handled with a forklift



Hoist with tank flanges

Empty FRP vesels can be hoisted with flanges on the vessel body. It should prepare hoisting device or cable in advance. The cable shall carry at least 10,000 pounds (4,500 kg).



Hoist with a strap

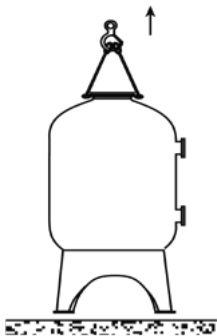
Prepare a 1/2" steel strap to connect with flanges and every side requires at least 2 bolts. Hook and steel cable need to lift at least 10,000 pounds (4,500 kg).



Handle with a forklift

Use a forklift to lift and handle FRP vessel.

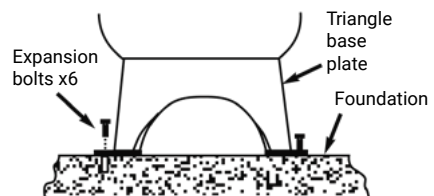
For 40" FRP Vesels Installation



Hoist

Hoist the FRP vessel in the same way of hoisting FRP vessel with a diameter of 24" and above and remove the outer package.

(It is recommended that the tank base shall be fixed on the ground when the vessel body, filter materials and pipeline installation is finished).

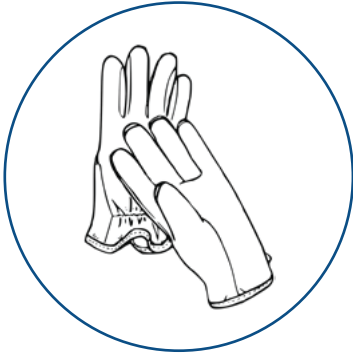


Fix the FRP vessel

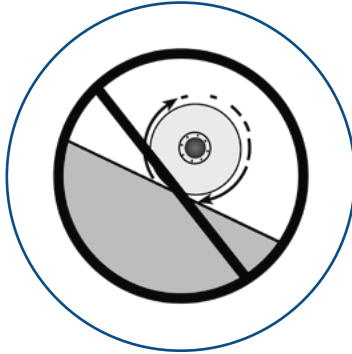
After installing the vessel and filling materials, the FRP vessel should be fixed on the ground with pressing plate and expansion bolts.



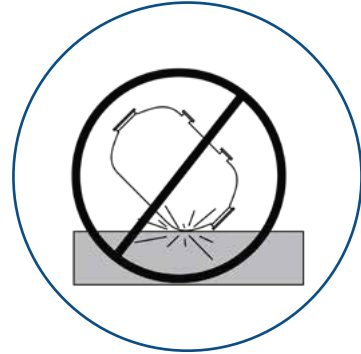
Precautions



Wear a pair of rubber gloves when handling or installing FRP vessel;



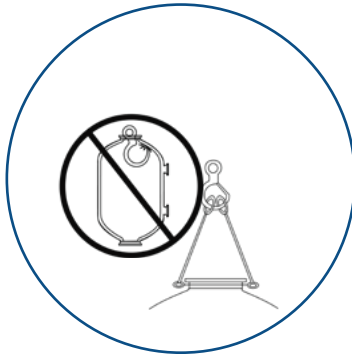
Do not roll or slide the FRP vessel.



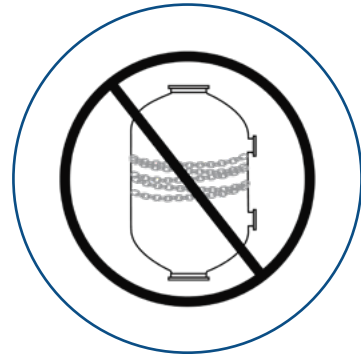
Do not drop or knock against FRP vessel. Do not allow the FRP tank collide with wall or other equipment.



Use a forklift or a crane to hoist the FRP vessel; compliant hoisting procedures must be followed.

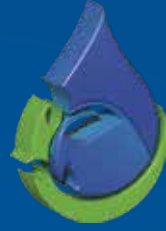


Do not use hook to lift the FRP vessel from inside. You may lift the FRP vessel from the outside flanges, so that the inner lining is not damaged.



Do not use steel wire or chain to fix FRP vessel. You may use canvas bag or nylon to prevent FRP vessel from slipping off.





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