



Clean Water Begins with Sejin!

SEJIN GRP WATER TANK

Outstanding in Heat Insulation

Excellent Strength

Versatile Capacity

Excellent Sanitation

Easy Assembly

Perfect Watertightness



SEJIN SMC CO., LTD.

CLEAN WATER BEGINS WITH SEJIN!

The Highest Quality, Perfect Manufacture
and Installation are Spirit of SEJIN

 **SEJIN SMC CO., LTD.**

Company History

1980

- 1981.02. Sejin Industries Co. was established by CEO, Kyeong-sig Choi.
- 1986.08. Incorporated as Sejin Co., Ltd.
- 1989.01. Completed the construction of a factory in Imsil, Jeollado.

1990

- 1990.07. Secured KS-mark. (Korean Standard KSF-4806)
- 1991.03. Acquired Q-mark (Designated as a quality assured company).
- 1991.09. Selected as a promising small & medium enterprise by Hanil Bank.
- 1991.11. Designated as a military service special case business by Military Manpower Administration.
- 1994.06. Selected as a promising leading technology business by Small & Medium Business Corporation.
- 1997.10. Company name was changed to Sejin SMC Co., Ltd.
- 1998.08. Acquired ISO 9001 certificate.

2000

- 2000.10. Secured GQ-mark (Good Quality).
- 2002.05. Designated as a promising small & medium enterprise by Small & Medium Business Corporation.
- 2004.08. Completed the construction of a factory in Banwol, Gyeonggi-do.

2010

- 2010.02. Acquired WRAS certificate.
- 2011.01. Acquired PSB certificate.
- 2012.01. Acquired Inno-Biz certificate.

WHAT IS SEJIN GRP WATER TANK?

- SEJIN GRP panels, which constitute the main body of this water tank, are manufactured using SMC (Sheet Molding Compound: the mixture of unsaturated polyester resin, glass fiber, filler, mould release agent and catalyzer) by hot press moulding process. They are assembled at the field using steel stiffeners and bolts so that the size and capacity can be designed without limitation.
- The foam sealant at the joint part of the panels provides perfect watertight performance to this bolting type water tanks; all the components, including GRP panels, which constitute the tank have sanitary and durable properties to meet the Food Sanitation Act. SEJIN GRP Sectional Tanks are suitable for the storage of drinking water.



CHARACTERISTICS OF SEJIN GRP WATER TANK

1. Sanitation

- Nontoxic, WRAS certified materials
- Complete blocking of sunlight transmission prevents the formation and growth of bacteria and germs.
- Smooth surface finish minimizes moss and scale.

2. Excellent durability

- SEJIN GRP Water Tanks are designed by FEM (Finite Element Method) analysis and obtained PSB certificate.
- The internal tie-rods in stainless steel are coated with PE by heat-shrink tubing process, which provides stronger corrosion resistance.
- The external components are hot dip galvanized steel, which gives semi-permanent life

3. Absolute water tightness

- The foam type gasket with excellent elasticity and resilience assures perfect water tightness.

4. Versatile capacity design

- Various panels make installation of tanks possible in any dimensions or capacities. (L-shape, U-shape, square-shape)

5. Easy installation

- The installation of tank is very user-friendly even in the restricted area by using standardized bolting type panels.

6. Outstanding insulation performance

- Pre-insulated panels are also available as an option. By using the PU foam insulated panels, the temperature change of the water in the tank can be minimized at high or low environmental temperature.

Reinforcing System

Reinforcing System

No Internal Reinforcement System

Tanks up to 2m height have no internal tie-rods and are reinforced externally with hot dip galvanized steel. This system allows easy access into the tank during routine cleaning.

Remark : No internal reinforcement system is available over 2m height by the customers request.

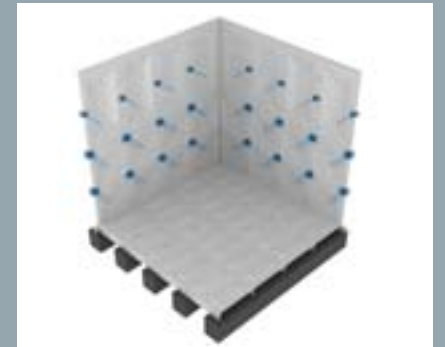


No Internal Reinforcement System

Inside Reinforcing System

Tie-rods are installed inside of the tank to improve the strength and stability of the tank structure. Corrosion-proof PE heat treated stainless steel tie-rods and GRP tie-rods are applied.

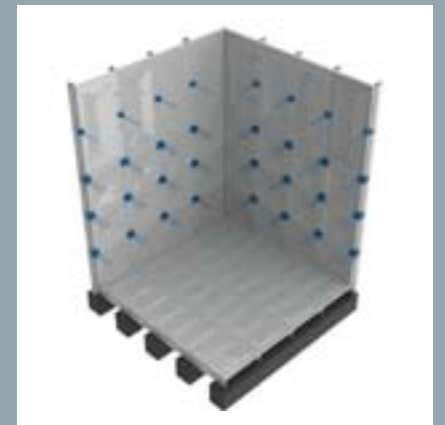
Remark : Various grades of stainless steel tie-rods without coating are available by the customers request.



Inside Reinforcing System

Inside & Outside Reinforcing System

Internally and externally reinforced system is applied for 5m or higher tanks for the cases when the tank's height has to be increased to meet the capacity requirement due to narrow installation space.



Inside & Outside Reinforcing System

Composition of SEJIN GRP Tank Panels

Side Panel Arrangement



Panel Shapes & Dimensions



Components of SEJIN GRP Tank



1. Air Vent (Ø50 or Ø100)



2. Bolts for roof panel
(High tensile plastic / Stainless steel)



3. Internal reinforcement
(Upper piece-PE Sheathed STS)



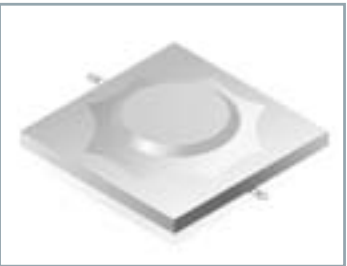
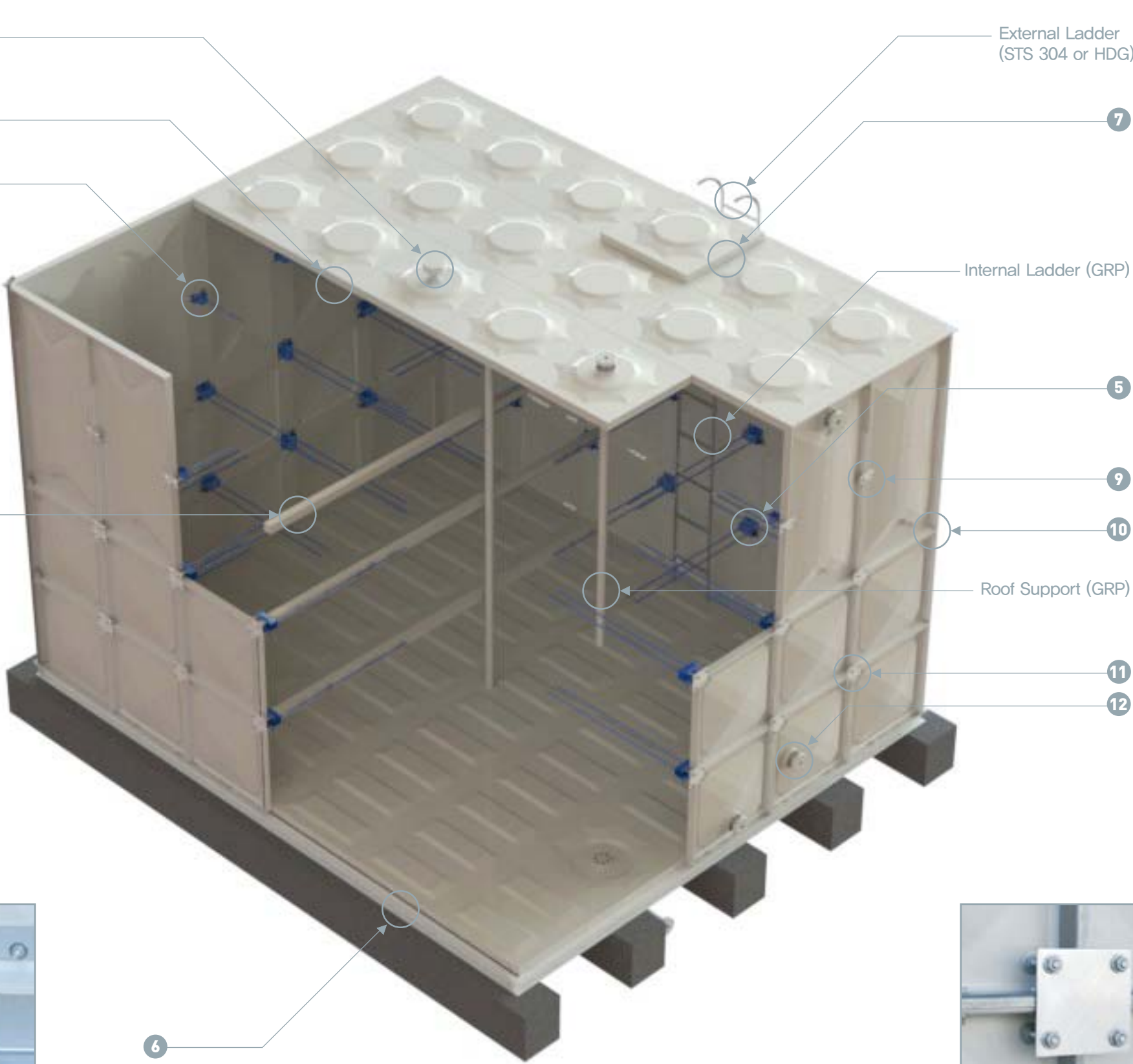
4. Internal reinforcement
(GRP rectangular pipe)



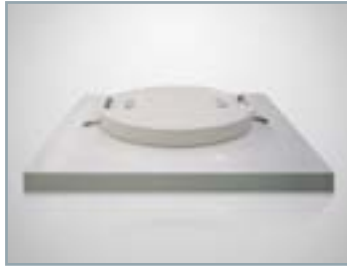
5. Internal reinforcement
(Lower piece-PE Sheathed STS)



6. Base frame(HDG steel)



7. Manhole(1000x1000)



8. Manhole(Ø650)



9. External reinforcement
(Upper piece-HDG)



10. External reinforcement
(Corner piece-HDG)



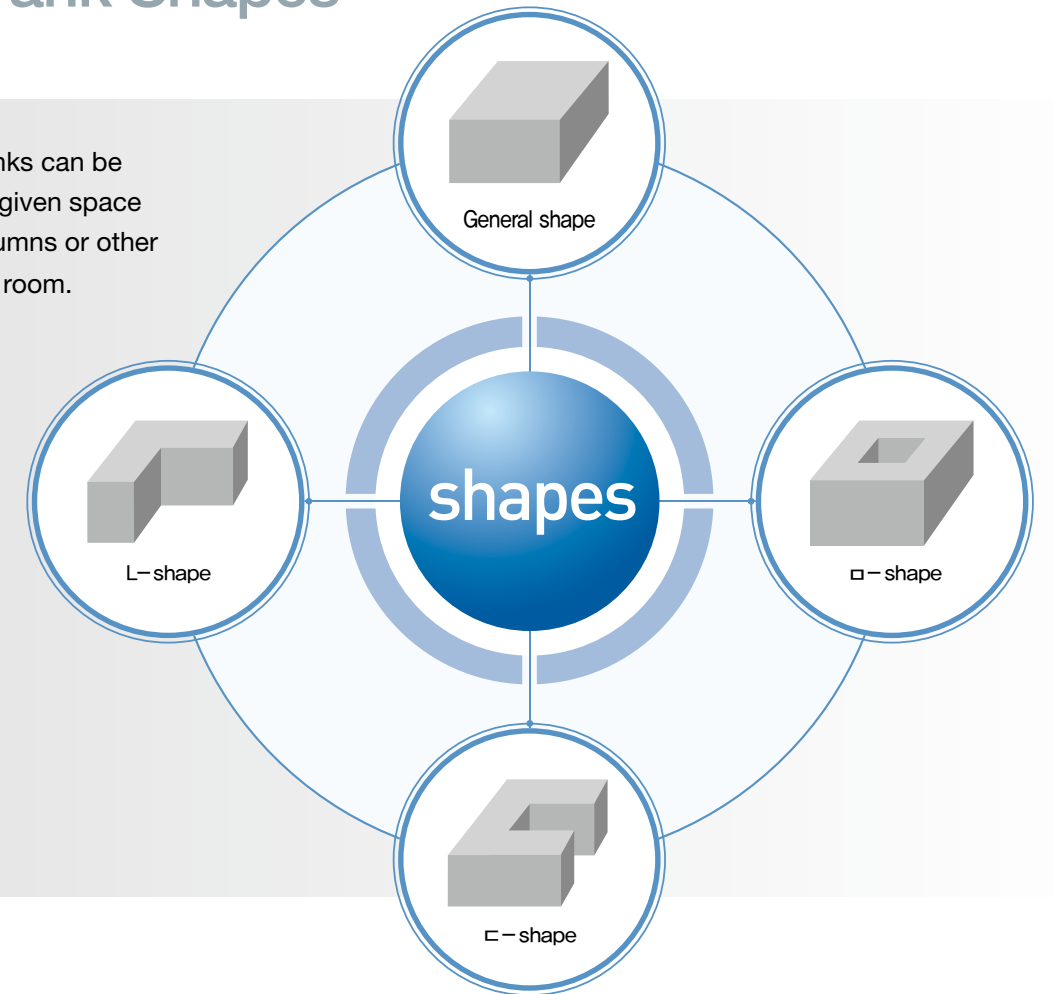
11. External reinforcement
(Lower piece-HDG)



12. Flange (FRP)

Various Tank Shapes

Various shapes of tanks can be installed to meet the given space regardless of the columns or other obstacles in the tank room.



Multiple Compartments

A tank can be partitioned into multiple compartments for respective use. Therefore, for example, water supply can be maintained even during cleaning or maintenance work. This system is recommended in a narrow space where multiple tanks are required.



One compartment without partitions

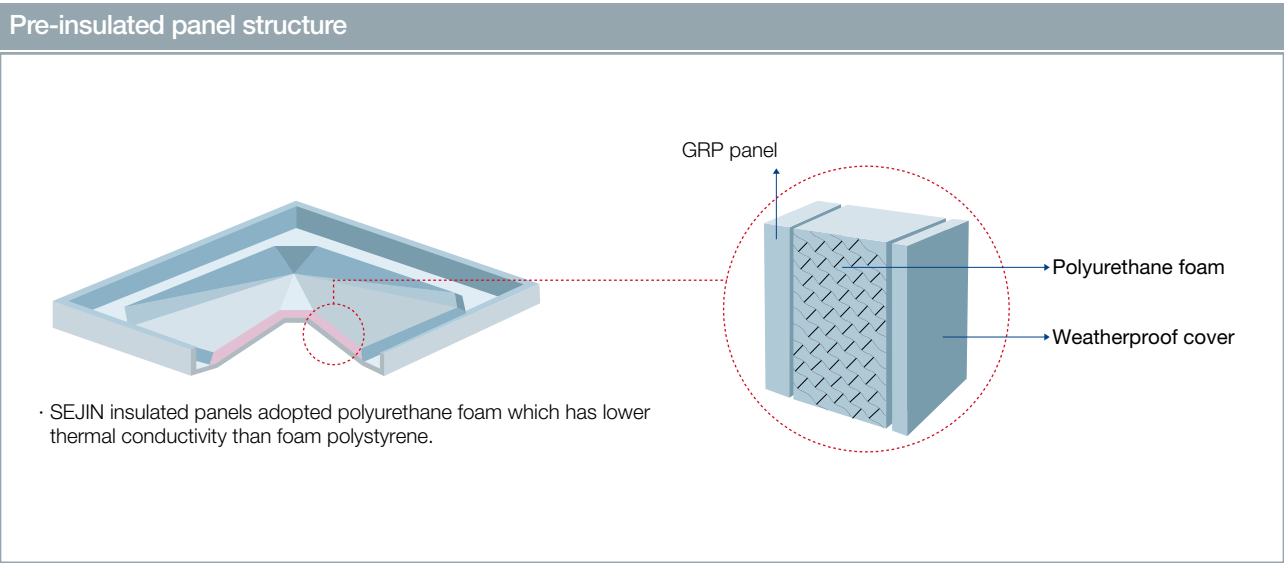


Two compartments with a partition

Various Options

Pre-insulated Panels

SEJIN GRP panels pre-insulated with polyurethane foam provide outstanding thermal performance. The pre-insulated panels are recommended in such cases when tanks are installed under high/low environmental temperature or high humidity as the insulated panels keep the water within the tanks at an ambient temperature.



Antimicrobial SMC

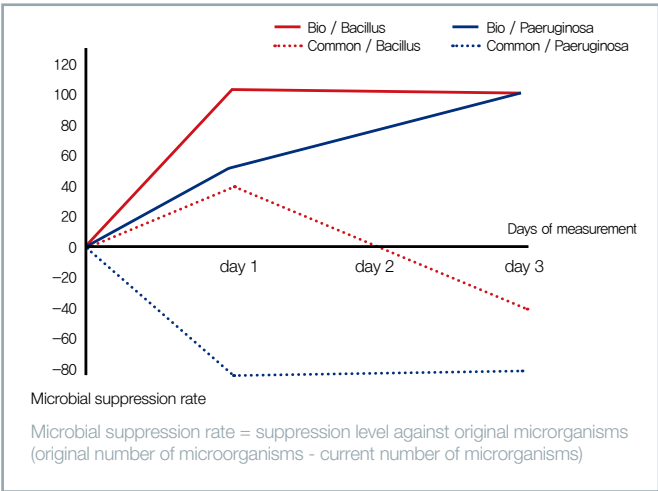
As zirconium phosphate-Ag class inorganic antimicrobial agent is used, excellent antimicrobial activity is made against bacillus and P. aeruginosa with no deterioration of antimicrobial performance for a long time.

1. Specific Features

- Disinfection of harmful microorganisms, suppression of microbial growth, and deodorization (harmful microorganisms: bacillus, staphylococcus aureus, mold, P. aeruginosa, and bacillus subtilis)
- Uniform antimicrobial performance in the tank for semi-permanent antimicrobial effect
- Differentiated molding method for the maximum antimicrobial effect with use of small quantity of anti-microbial SMC

2. Evaluation of antimicrobial performance

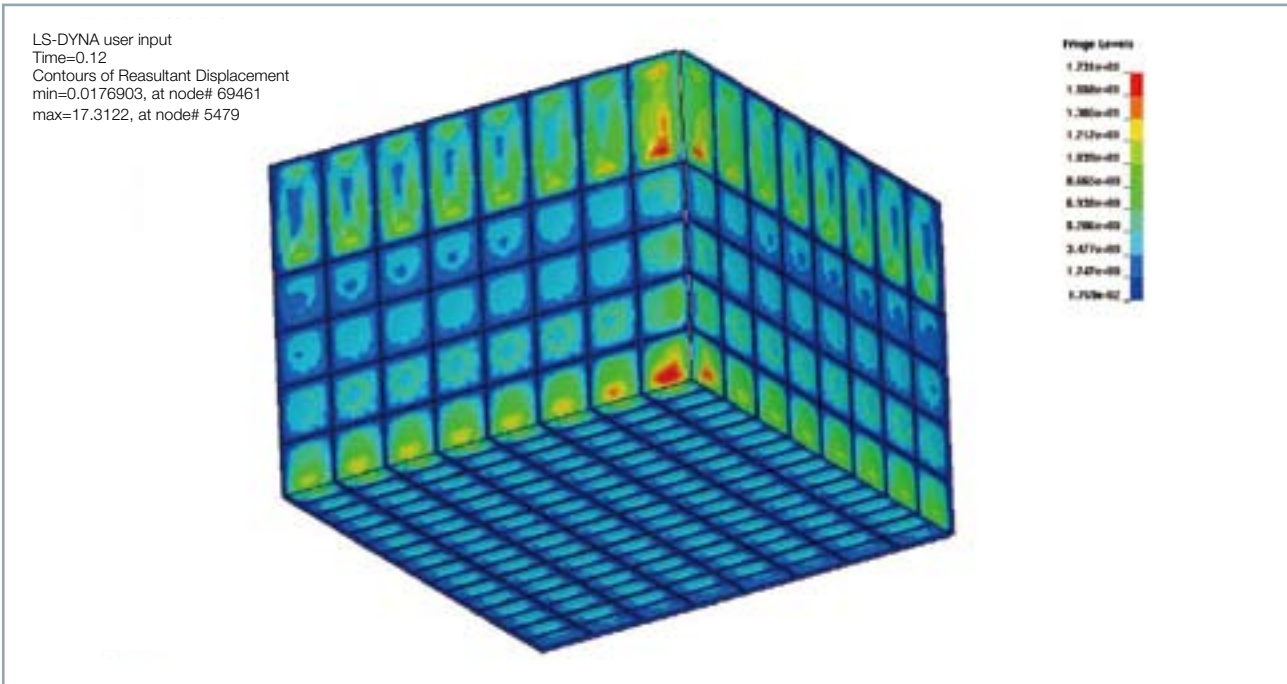
- Method : Shake Flask test
- Condition : Immersion of specimen in the testing microorganism solution, cultivation with shaking at 25°C, and counting the microorganisms
- Surface area of specimen per quantity of testing microorganism liquid: 4cm²/100ml
- Specimen: SMC with anti-microbial treatment



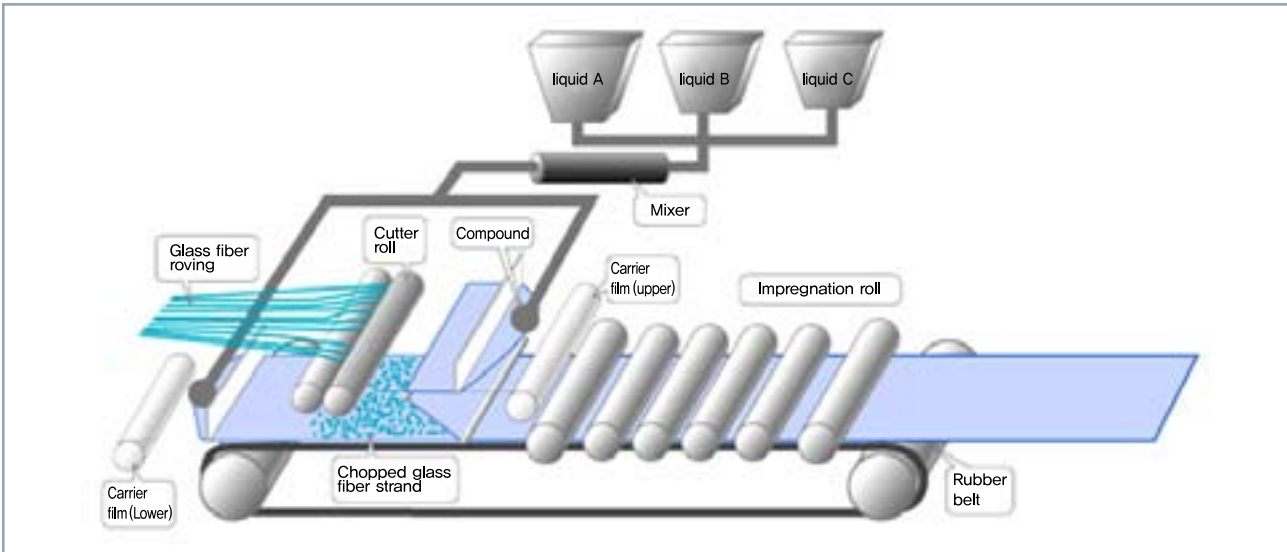
High Strength SMC

As the glass fiber, one of the main ingredients, is increased in the SMC, the strength and hardness of panels is increased, the safety of large water tanks is improved, and surface contamination with scratches is prevented.

The distribution of max, deformation on tank



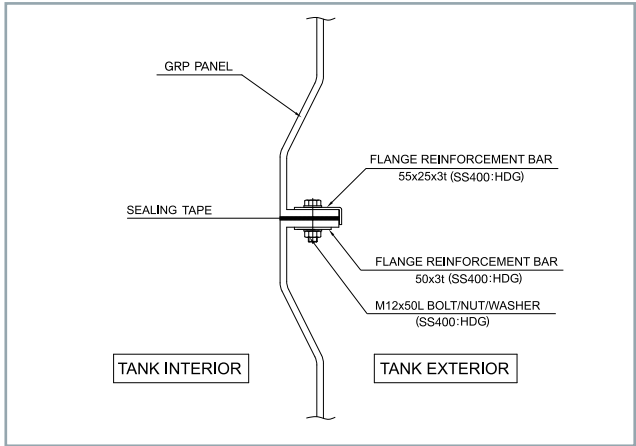
SMC manufacturing process



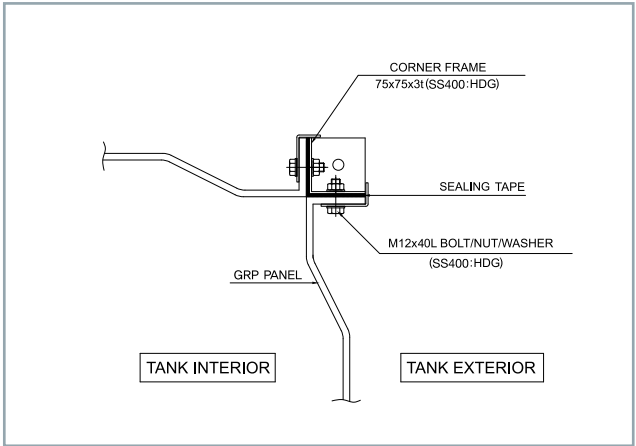
PHYSICAL PROPERTIES OF GRP WATER TANKS

	KS	Regular SMC	High Strength SMC
Fiber glass (%)	25	33	38
Tensile strength (MPa)	60	91	115
Flexural strength (MPa)	80	172	192
Barcol hardness	30	43	65

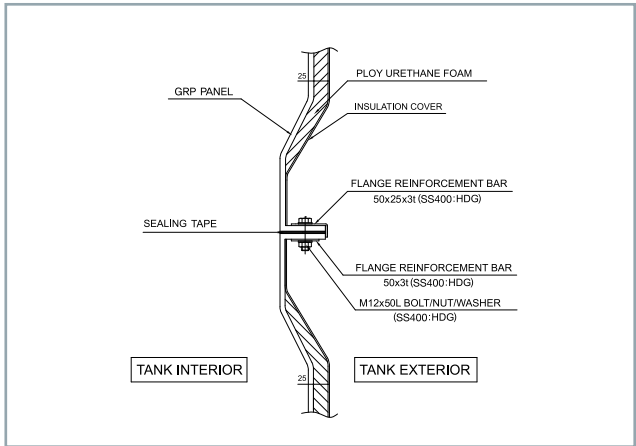
Assembly Details of SEJIN GRP Tank



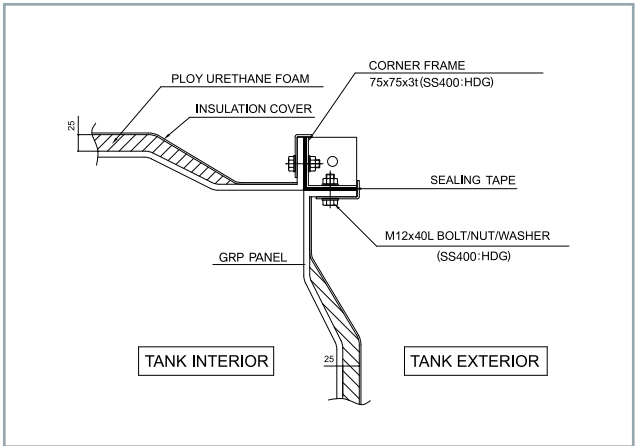
PANEL FLANGE DETAIL (SINGLE PANEL)



PANEL CORNER DETAIL (SINGLE PANEL)



PANEL FLANGE DETAIL (INSULATION)



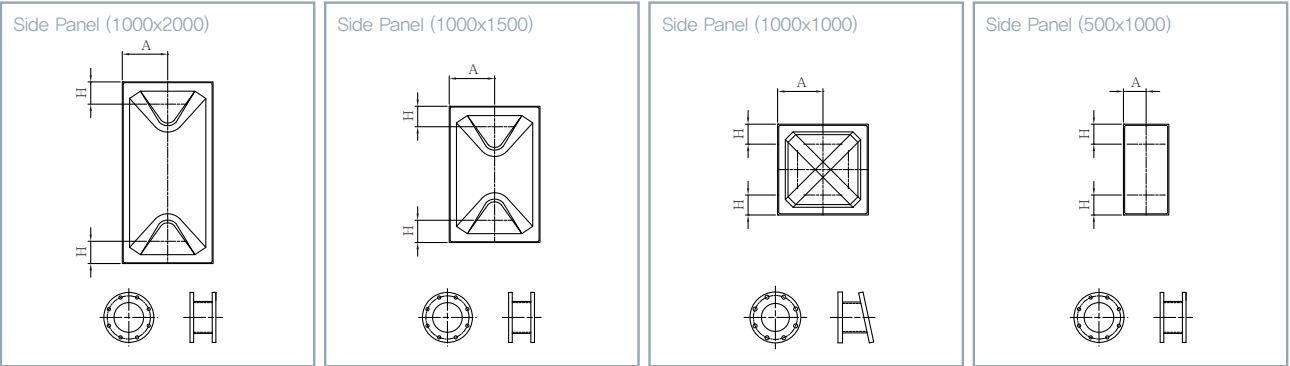
PANEL CORNER DETAIL (INSULATION)

Standard Design Condition

ITEM	DESIGN STANDARD
Seismic-resistance	Horizontal seismic intensity kh = 2/3
Hydrostatic pressure-resistance	Strength of panel's hydrostatic pressure should be 4 times or greater than the standard safety level. Deformation rate at full tank should be lesser than 1 percent of tank height.
Wind pressure-resistance	≤ 60m/sec (max) at empty tank
Snow load-resistance	Snow load 60kg/m ² / (snowfall 30cm)
Light penetration rate	≤ 0.1%

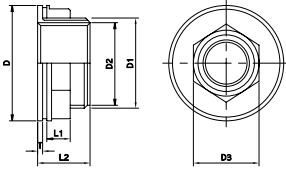
FITTINGS

FITTINGS OF SEJIN GRP TANK



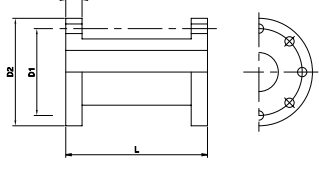
	A	H		A	H		A	H		A	H
65A	500	180	65A	500	180	65A	500	180	65A	500	180
80A	500	190	80A	500	190	80A	500	190	80A	500	190
100A	500	200	100A	500	200	100A	500	200	100A	500	200
125A	500	210	125A	500	210	125A	500	210	125A	500	210
150A	500	230	150A	500	230	150A	500	230	150A	500	230
200A	500	250	200A	500	250	200A			200A	500	250
250A			250A			250A			250A	500	290

SOCKET (BS)



nominal dia	D	D ₁	D ₂	D ₃	L ₁	L ₂	T
20A	55	33.5	24.1	38	10	25	3.5
25A	65	40	30.3	46	12	30	4
30A	79	49	39	55	12	30	4
40A	85	55	45	61	14	30	4
50A	95	66.5	56.7	72	14	30	4

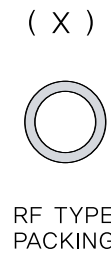
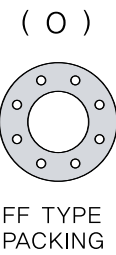
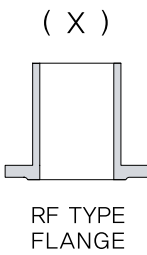
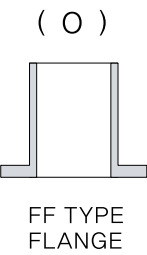
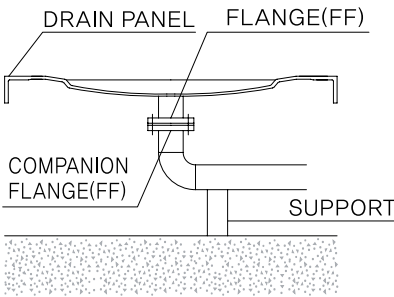
FLANGE (PVC/FRP)



nominal dia	D ₁	D ₂	T	L
65A	140	175	18	170
80A	150	185	18	170
100A	175	210	18	170
125A	210	250	18	170
150A	240	280	22	170
200A	290	330	22	170

CAUTIONS FOR CONNECTING PIPE TO FLANGE

- FF type flange and packing should be used.
- Support should be installed under pipe and valve as below drawing.



Foundation and Maintenance Space

CONCRETE FOUNDATION (BY CUSTOMER)

1. Installation of concrete plinth

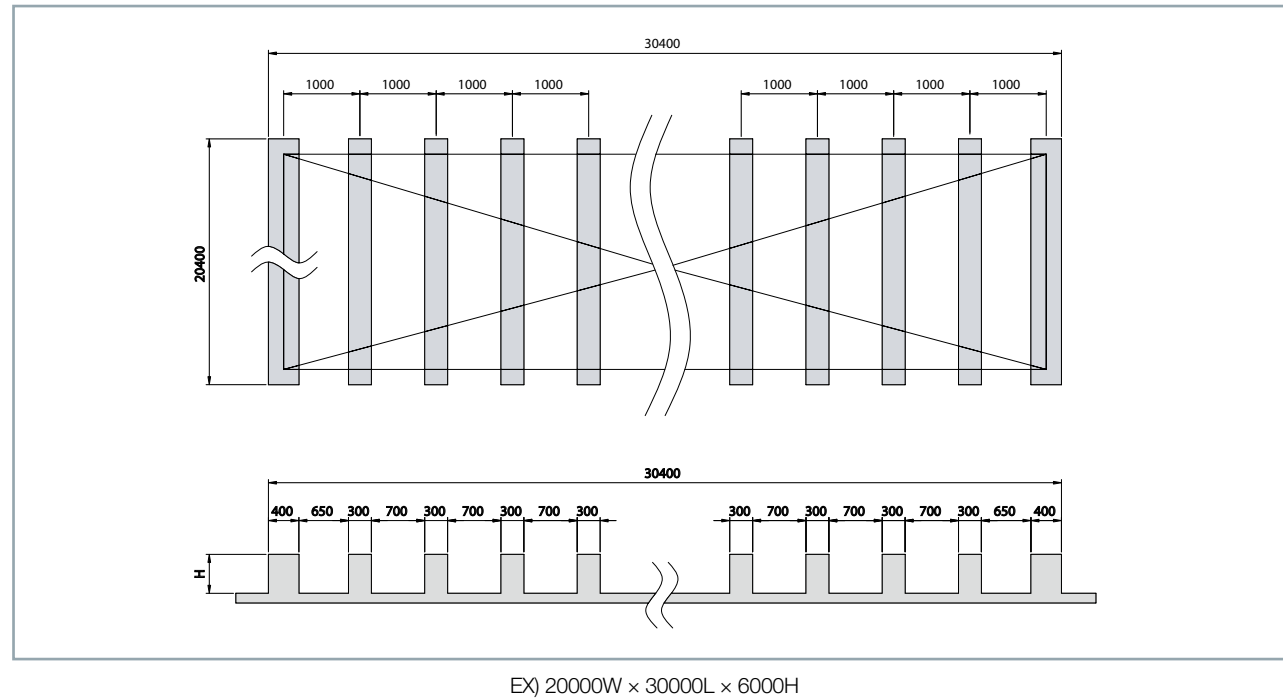
Width : 400mm (min. 300mm)

Height(H) : Min. 600mm including the steel base frame

Distance : Min. 1,000mm between one plinth to another (center to center)
(In case of using 500mm unit, the maximum distance is 1,250mm)

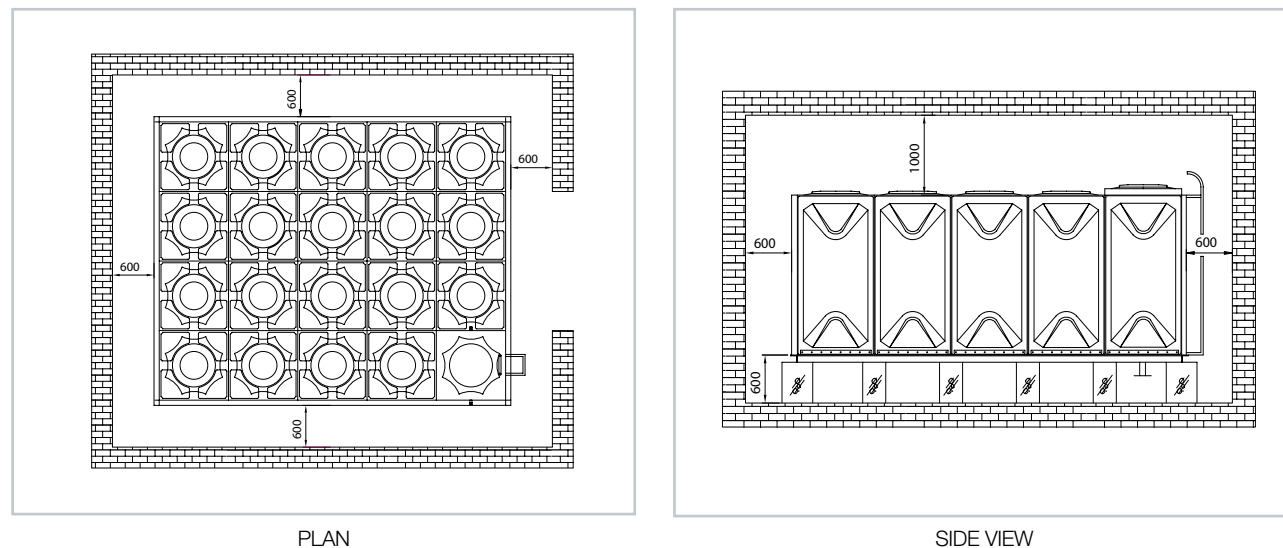
Evenness : The top of each plinth should be leveled. (less than 1/500)

Strength of concrete : Min. 180kgf/cm²



2. Maintenance space

It is required to have minimum 600mm space between tank and wall in all directions for proper installation and maintenance.
(The distance from the ceiling to the top of the tank should be minimum 1,000mm.)



Manufacturing Process of GRP Panels



Certificates





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SEJIN GRP WATER TANK



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