

**HYUNDAI INDUSTRY**  
**SPECIFICATION**

**(GRP SECTIONAL WATER TANK)**

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# 1. GENERAL

## A. Scope

This specification describes the configuration of the GRP Sectional water tank with each panel (roof, wall, bottom, drain) pressurized and molded by hydraulic press. By molding GRP (Glass Reinforced Polyester) materials to compound that mixed filler, and the application of a catalyst and mold release agent to the unsaturated polyester resin should occur.

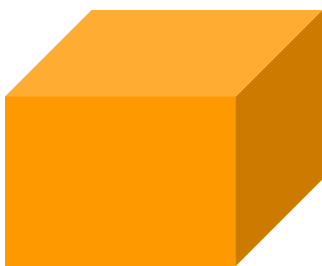
In case of reinforcement, using reinforcement material on both the inside and the outside should take place, and water tanks assembled “at the site” should use bolts and nuts by inserting sealing materials into the panel joining part.

## B. Scope of installation work

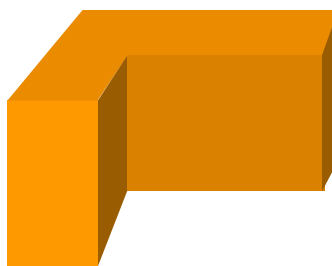
Assembly of Baegkwang GRP water tank panel, base frame, reinforcement system, internal/external ladder and fitting/flange for piping.

## C. Structure

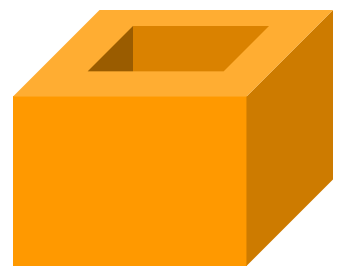
1) CONFIGURATION : The product should have the following configuration so that it can be Installed according to the available building space using a quadrilateral panel assembling type. Panels around building wall or pillars should be separated from buildings for assembling and maintenance. Also ladders has to be installed for maintenance.



<General Type>



<Corner Type 'L' Shape>

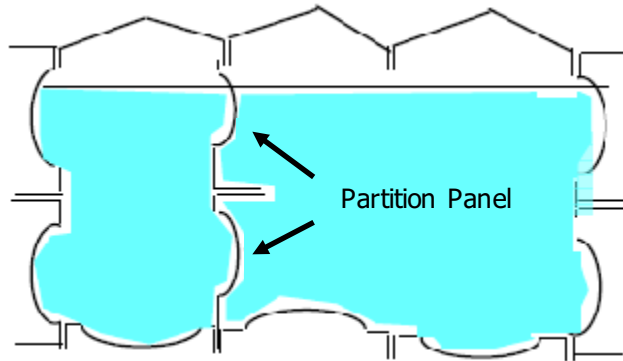


<Corner Type '□' Shape>

2) This product for storing drinking water should have no inflow and generation of contaminants and should comply with the rules for the sanitation of water supplies and the water tank installation guidelines.

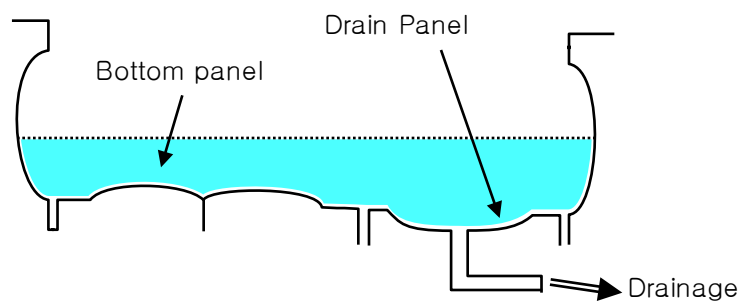
3) This product should be equipped with a bottom panel in such a configuration so as not to allow deposits on the floor, and a drain panel that provides easy discharge of treated materials upon internal cleaning.

4) In case of dividing one tank in 2 compartments, it should be able to block disinfectants and contaminants from the adjacent tanks (during cleaning) by a private panel with the partition function.



5) GRP sectional water tank should be in such a structure as to block rain water from entering the inside, enabling locking. Also, it should have one or more manholes with the inside diameter of over 600mm to allow personnel entry for maintenance.

6) The tank shall be constructed in such a way that there may be no sediment on the bottom panel and a drain nozzle shall be provided for easy drainage in case of cleaning the tank.



## 2. PRODUCT AND SPECIFICATION

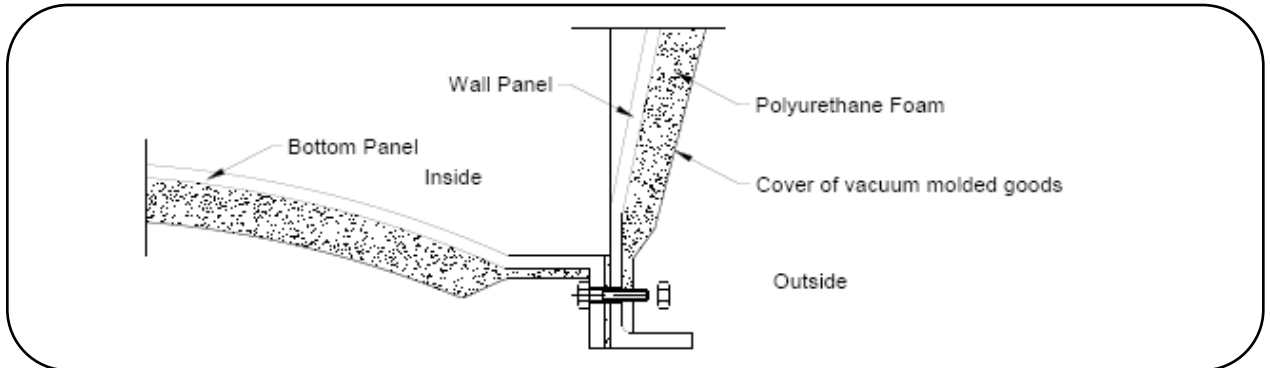
### A. GRP Panel

#### 1) Panel Materials

The materials should be not harmful to the stored drinking water. They should be products that are compressed and molded GRP materials which utilize reinforced fiberglass to compound the mixed filler, catalyzer and mold release agent to the unsaturated polyester resin with press.

## 2) Heat insulation panel

Insulated panels shall be composed of three layers of SMC panel, polyurethane and vacuum formed cover.



## B. Manhole

1) Manhole should be equipped with a locking device, providing easy internal entrance and preventing rainwater inflow.

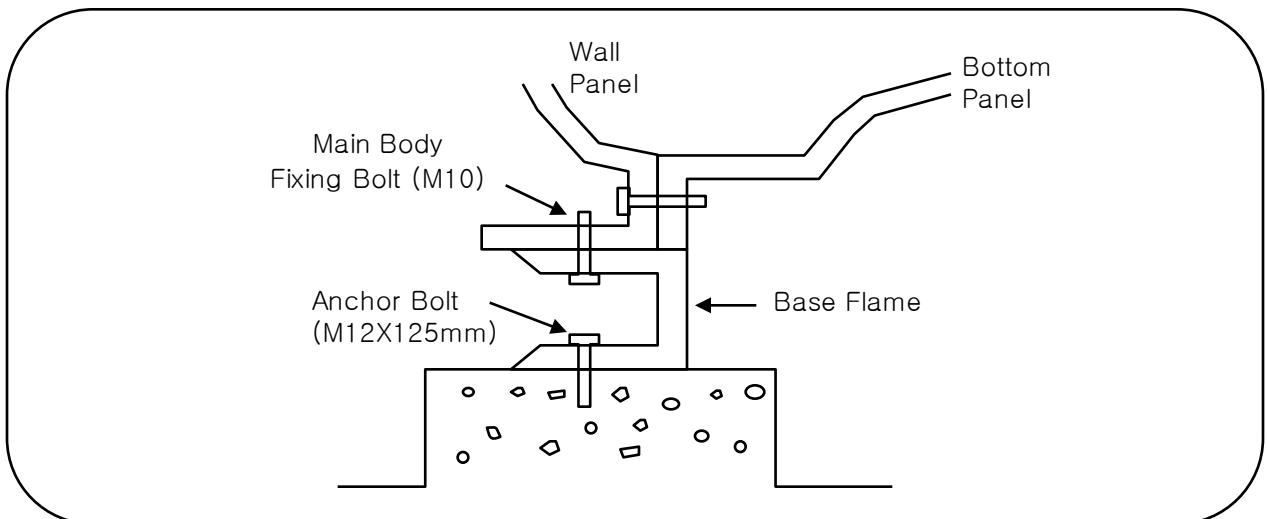
\* Manhole : GRP with internal diameter of 600mm at least

\* Hinge : Stainless steel 304 or higher grade.

## C. Base frame

### 1) Material

Use hot-dip galvanized steel. The specification for materials used by tank specification is ;



### 2) Configuration method

- a. Bolting assembly structure.
- b. Fix the base and the tank body with bolts to prevent tank vibration and location change.
- c. Fixing location : Outside of the tank (4side)

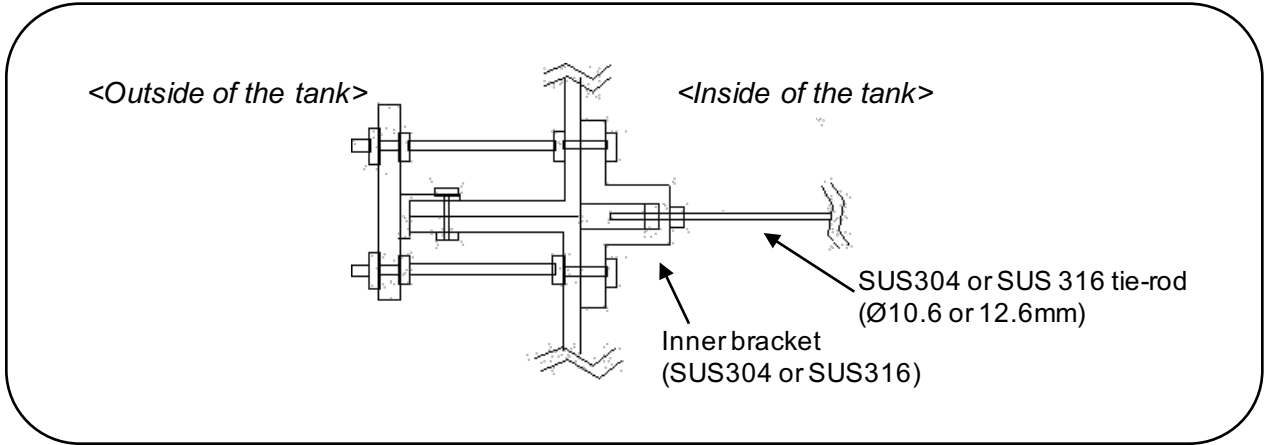
| Tank Height  | Material          |
|--------------|-------------------|
| 2.5M or less | Angle 75X75X6t    |
| 3M or more   | Channel 125X65X6t |

<Base material by water tank height>

## D. Internal reinforcing parts

### 1) Materials

Inside stay of SUS 304 or SUS 316 tie-rod shall be applied in order to secure minimum deformation of side wall panel, safety and long lifetime of the tank.



| Parts name    | Materials        | Specification                           |
|---------------|------------------|---|
| Tie-rod       | SUS316 or SUS304 | Ø10.6 or 12.6                           |
| Inner Bracket | SUS316 or SUS304 | 1760S : 160X8X5t<br>17160S : 160X160X5t |
| Roof Support  | PVC pipe         | 75A X 4t or higher                      |

## E. Outside reinforcing parts

### 1) Materials

Supports of hot dip galvanized steel shall be applied for corner frame and flange bars.

| Location          | Parts Name            | Materials                          | Specification |
|-------------------|-----------------------|------------------------------------|---------------|
| Wall Panel Joint  | Flange bar            | Hot-dipped galvanized (Angle type) | 55X30X3t (mm) |
| Wall Panel Joint  | Flat bar              | Hot-dipped galvanized (Angle type) | 40X3t (mm)    |
| Wall Panel Corner | External corner frame | Hot-dipped galvanized (Angle type) | 75X75X3t (mm) |

## **F. Sealant**

1) Products, which facilitate the easy handling of tape configurations, with materials of a PVC system with excellent durability and recovery, and those which have the same life as that of panels and materials not harmful in sanitation without any problems regarding temperature change (nontoxic materials).

2) Use materials meeting the regulation of the rubber used for synthetic rubber used as sealing materials of bolts.

3) Sealing method by silicon application inside of a portable water tank should not be used since it can not guarantee long-term water tightness and moss is generated.

## **G. Bolts and Nuts**

1) The size of bolts should conform to Korean Standard and the diameter should be 100mm or higher.

a. Internal use (contact with water) “ Stainless steel 304 or higher grade

b. External use and base frame part : Dacrotized or Stainless steel 304 or higher grade

c. For internal/external coupling : Use synthetic rubber head bolts to improve water tightness

## **H. Ladder**

1) The ladder should provided enough load resistance and solidity, and the internal ladder should be in an assemblage structure without welding and not harmful in sanitation.

a. Internal use : GRP assemblage ladder or stainless steel 304 or higher grade.

b. External use : HDG steel or Stainless steel 304 or higher grade.

## **I. Ventilation**

1) The air-vent should be in ABS or similar grade plastic material with PE insect-guard.

## **J. Nozzles**

1) Ø50mm or below : Socket type in Brass material.

2) Ø65mm or higher : Flange type in Steel + Nylon coated or plastic materials.