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MEMBER OF:



COMPANY CERTIFICATION:



AWARD:

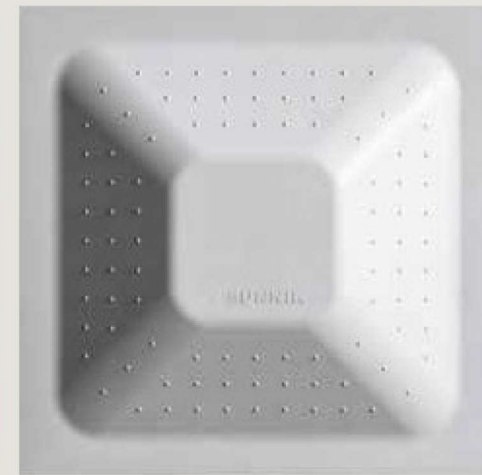


PRODUCT CERTIFICATION:



GRP BOLTED SECTIONAL PANEL TANK

Economical, Flexible and Recyclable containment system. For commercial, mining, food & factory production, air-cond make up, fire protection, industrial liquid, potable water, rainwater harvesting, sea water and waste water industries.

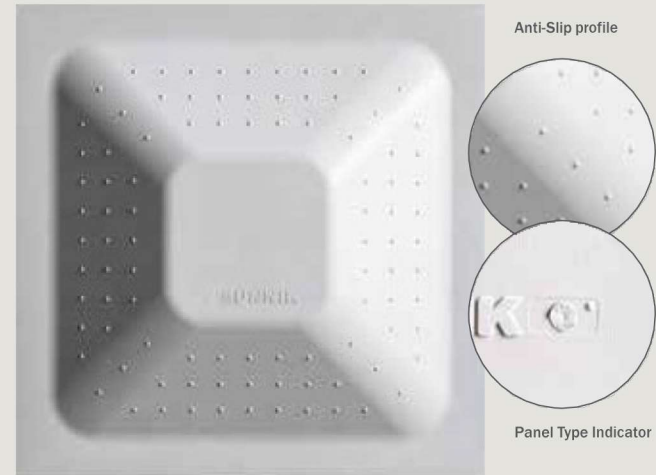


Sunnik.

A brand of Steelworks Engineering incorporated in 1984. Its strong commitment to quality and tailor-made customer service created a dramatic demand for its water tanks. Over the past 30 years, Steelworks Engineering continued to contribute many firsts in water tank technology. Today, Sunnik is a leader in Malaysia, and a highly accredited brand the world over.

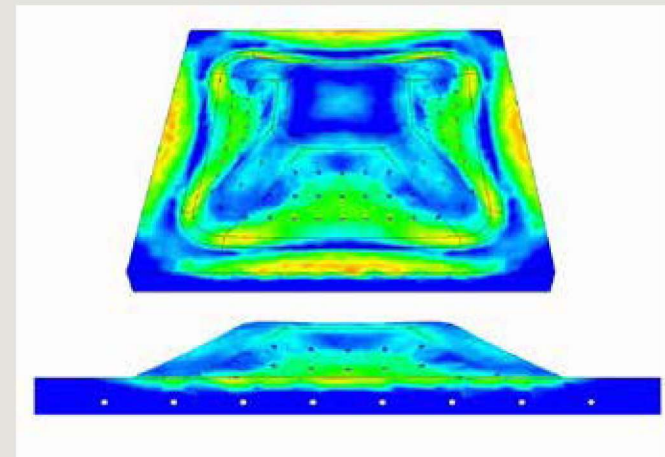
NEW PRODUCT FEATURE

The new Anti-Slip profile is introduced on the roof and base panels, to provide a stable walking platform. And the Panel Type Indicator on side wall and base panel for ease of installation



Structural Analysis

Finite Element Analysis on SUNNIK panel. Each panel is subjected to four different operating conditions, influenced by:



- ✓ Von Mises Stress
- ✓ 1st Principle Stress
- ✓ 3rd Principle Stress
- ✓ Displacement Test
- ✓ Safety Factor 6

Our panel design structural rigidity is one of the highest in the market with a safety factor of 6x, and not 4x.

Performance Properties

	SS245 : 2014
Tensile strength (MN/m2)	>70
Bending strength (MN/m2)	>100
Elastic modulus in bend (MN/m2)	>6000
Glass content (%)	>25
Barcol hardness (%)	>30
Absorption (%)	>0.5
Hydrostatic Test	>4
Luminous transmission	<0.1

Design Criteria

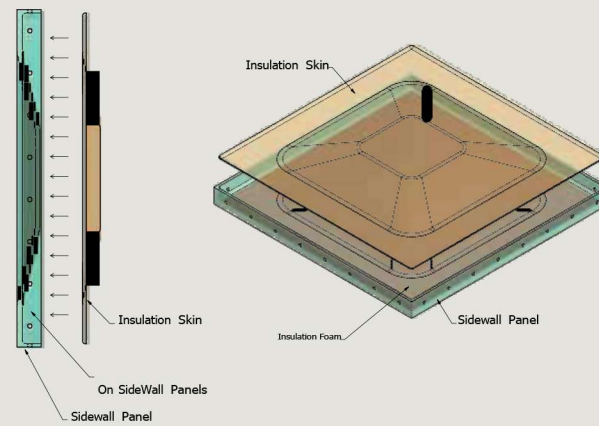
Seismic Importance Factor	1.5
Site Class	D
Snow load	100kgf/m2
Roof live load	100kgf/m2
Wind load	200km/h

Accelerated Weathering Test

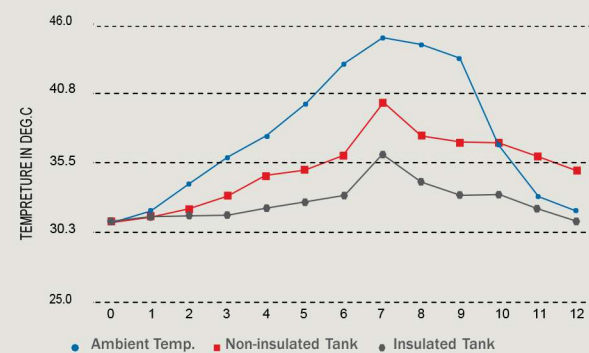
Destruction from weathering occurs both outdoors and indoors, and its severity can vary greatly depending on the climate, causing unwanted products failures. With the product development and experience, SUNNIK GRP panels have passed the 3000 hours of Accelerated Weathering Test. The test was performed on SUNNIK GRP panels under exposed of Ultraviolet light using QUV Weathering Test Machine. The test was conducted using UV lamp for duration of 3000 hours with the additional of 2 minutes of water spray during the 8 hours UV exposure.

SUNNIK Insulated Panels

The SUNNIK Insulated panels designed to meet the requirement of both hot and cold weathers. The Polyurethane Foam used as insulation is high density and waterproof with low thermal conductivity.

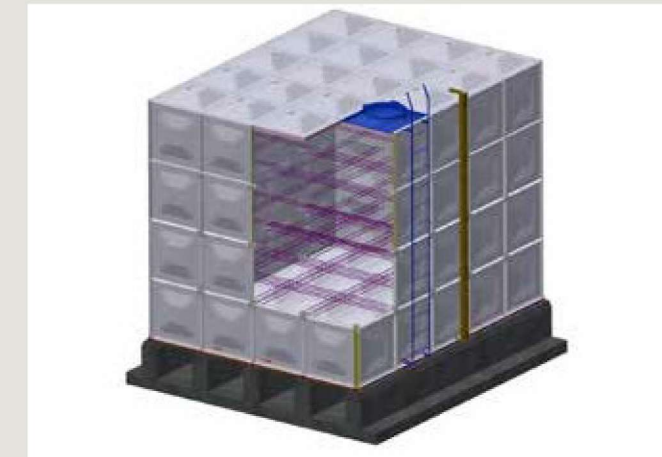


Change of Water Temperature (In House Test)

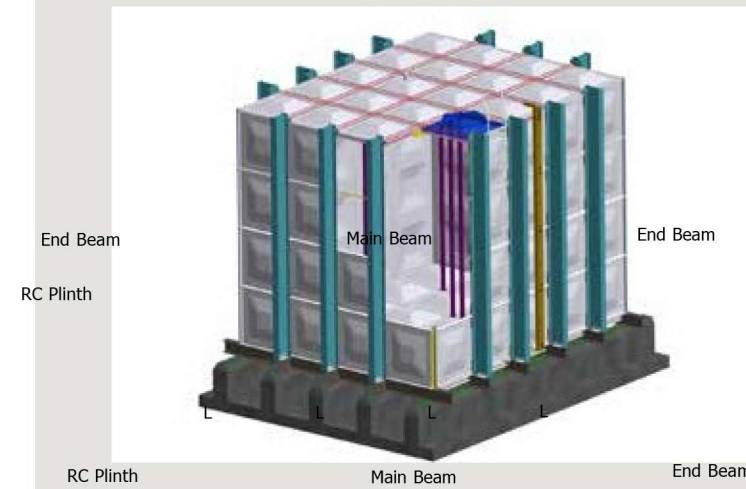


TANK REINFORCEMENT DESIGN

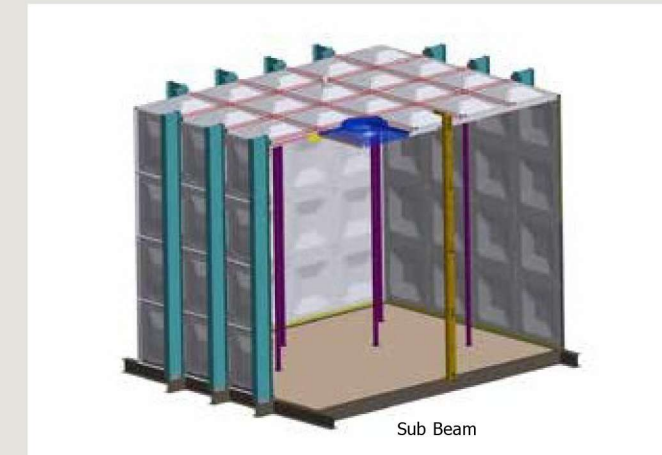
Internally Braced



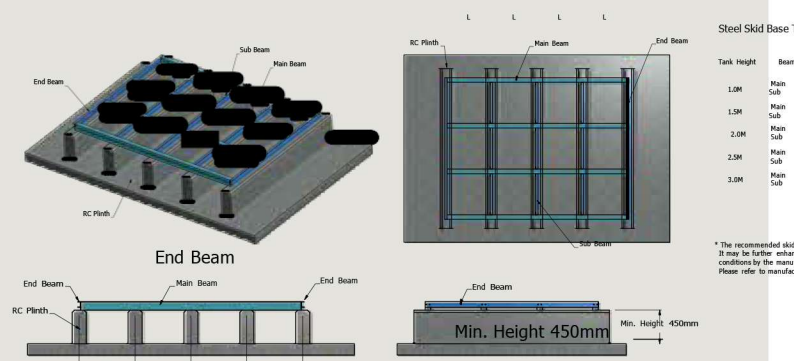
Externally Braced



Concrete Base Tank with Externally Braced



Skid Base View



Tank Height	Beam	Skid Design Sizes
1.0M	Main	SHS 50 x 4.0thk
	Sub	CH 100 x 50
1.5M	Main	SHS 50 x 4.0thk
	Sub	CH 125 x 65
2.0M	Main	SHS 50 x 4.0thk
	Sub	CH 125 x 65
2.5M	Main	SHS 50 x 4.0thk
	Sub	CH 150 x 75 x 6.5
3.0M	Main	SHS 50 x 4.0thk
	Sub	CH 150 x 75 x 6.5
3.5M	Main	SHS 50 x 4.5thk
	Sub	UB 152 x 89
4.0M	Main	SHS 50 x 4.5thk
	Sub	EA 90 x 6

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	Sub	CH 150 x 75 x 6.5
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	Sub	UB 152 x 89
4.0M	Main	SHS 50 x 4.5thk
	Sub	EA 90 x 6

* The recommended skid design sizes are for certain extreme conditions. It may be further enhanced under different operating environment and conditions by the manufacturer. Changes will happen without notice. Please refer to manufacturer for final layout.

Sunnik Water Tanks comply to:

- ✓ MS 1390 : 2010
- ✓ SS245 : 2014
- ✓ BS EN 13280 : 2001
- ✓ WRAS BS6920 : 2014

- Manufacturing specifications are subject to change without prior notice.
- Manufacturing specifications can be customised to buyer's requirement subject to manufacturer's approval and safety compliance.
- SUNNIK tank recommended to be installed by its appointed or approved skilled installers only.
- SUNNIK tank recommended to be checked and certified by its technician upon complete installation and prior filling of water to ensure performance otherwise warranty shall be revoked automatically.
- SUNNIK Warranty is issued upon complete sales and commissioning of tank.
- Installation Manual and Tank Operation & Maintenance Handbook are provided for SUNNIK tank product on request.