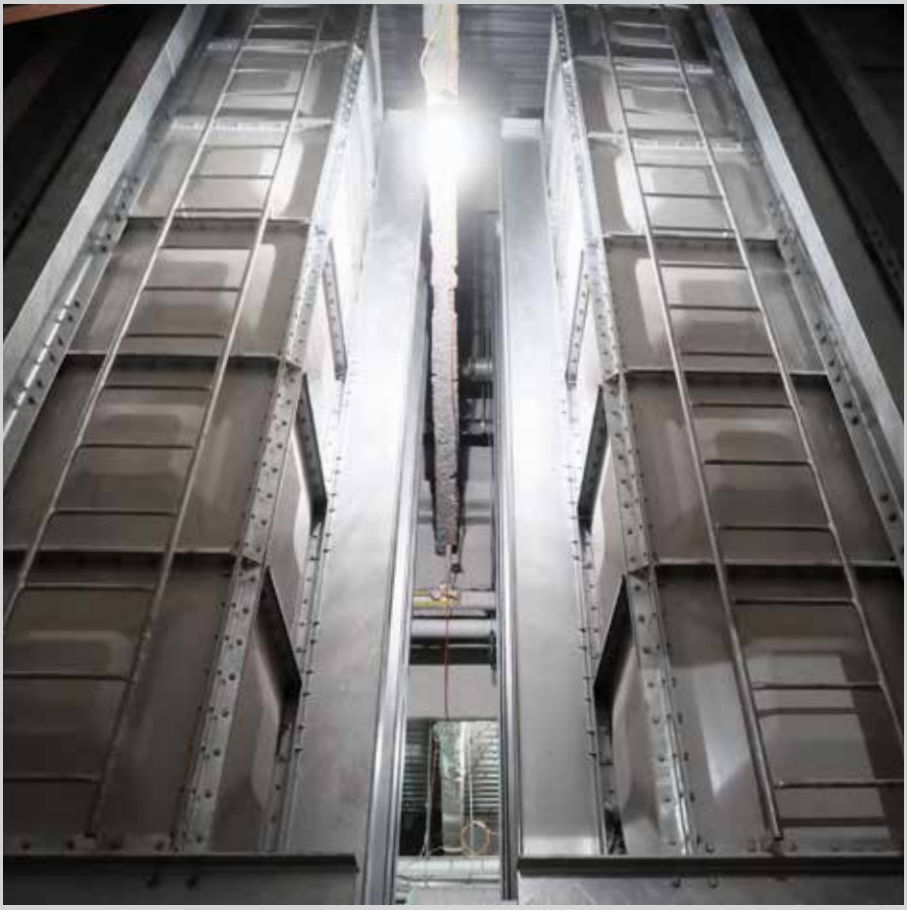
FRP/GRP Modular Water Tank System

Your dependable, sustainable, and economical solution for versatile liquid storage: drinkable water, mining operations, food & industrial processing, HVAC systems, fire safety, various industrial liquids, rainwater collection, sea water & waste water management



ANSI 61 ANSI 372

SUNNIK: MASTERY IN WATER STORAGE SOLUTIONS

At Sunnik, our mission centers on establishing ourselves as the epitome of dependability in the water storage industry. We are committed to offering solutions that are not only exceptionally hygienic and durable, but also cost-effective and simple to install, thus fulfilling diverse needs with superior quality and convenience.

Legacy of Distinction

Established in 1984, Sunnik has paved its way as a forerunner in water storage solutions, blending technological advancement with a deep-seated understanding of industry-specific needs. From iconic structures such as the Burj Khalifa and Petronas Twin Towers to essential water storage systems in Berekum, Ghana, Sunnik's footprints are discernable across 42 countries and counting, speaking volumes of our unrivaled expertise

Emblem of Dependability and Quality

Our commitment to Sunnik revolves around the principle of unmatched dependability. Each water storage solution we provide encapsulates our commitment to hygiene, durability, cost-effectiveness, and simple installation, exuding superior quality and convenience. This steadfast devotion to excellence has earned us prestigious recognitions, including the 2013 Malaysian Construction Industry Excellence Award and a place among the leading 500 companies in the Malaysia Prime Minister's Tun Dr Mahathir Mohamad Industry 4.0 (Industry 4WWRD) 2019 program.

Committed to Sustainability and Impact

Sunnik envisions a future beyond just providing water storage solutions. We aim to create a lasting impact on projects, communities, and the environment. Our dedication to minimizing environmental impacts drives our strategies, leading us to develop innovative ways to improve water storage processes while maintaining a balance with nature and ensuring our methods and products remain sustainable.

Technological Superiority: A Pursuit of Excellence

At Sunnik, innovation is not a choice but an integral part of our ethos. We leverage state-of-the-art techniques like robotic welding, fibre-laser cutting, hydraulic compression, and sheet moulding compound (SMC). This synergy of automation and craftsmanship ensures each panel of our water storage tanks exudes superior quality while keeping costs under control.

TRACK RECORD

Beyond Manufacturing: Engineering Solutions

Our work transcends the boundaries of manufacturing; we engineer solutions that inspire change and set new industry standards. We imbue each of our water storage solutions with the qualities of engineering excellence, reliable performance, and superior quality.

Sunnik invites you to experience the assurance of partnering with an industry leader, a company committed to maintaining the highest international quality standards, and discover the difference we bring to the water storage industry.

With Sunnik, you are not just choosing a product; you're opting for a promise of deep-rooted industry knowledge and expertise.


Chakri Palace, Bangkok


Philippines


Tadawul Tower, Riyadh


Chek Lap Kok International Airport, Hong Kong


Berekum, Ghana

Burj Khalifa, Dubai

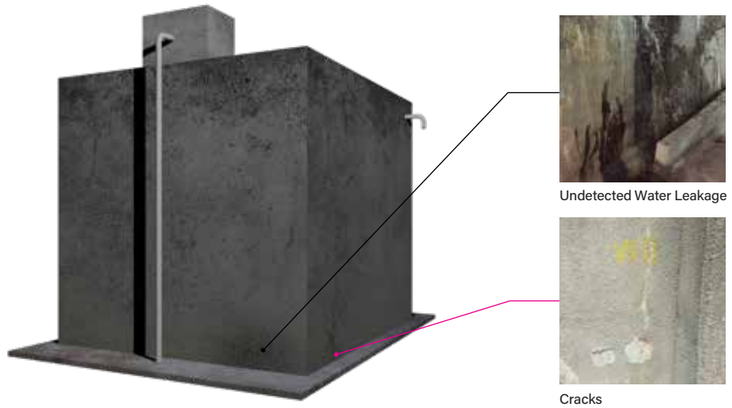

Petronas Twin Tower, Kuala Lumpur


Hudson Yard, New York

CHALLENGES OF CONVENTIONAL WATER STORAGE SYSTEMS

Traditional concrete and steel tanks exhibit vulnerability to the ravages of time and elements, succumbing to aging, wear, and corrosion. Under the relentless stress of erosion or natural disasters, concrete tanks can develop cracks, resulting in water contamination and leakages - damage often beyond repair. Mild steel tanks are also not unsusceptible, with rust and extreme temperature variations posing formidable challenges. Enter Sunnik's FRP Sectional Panel tanks, a solution offering reliability and cost-effectiveness far superior to their conventional counterparts.

* Note:
Sunnik provides a selection of lined steel tanks, perfect for volume-demanding and durable projects. Contact us to explore the best fit for your unique needs.

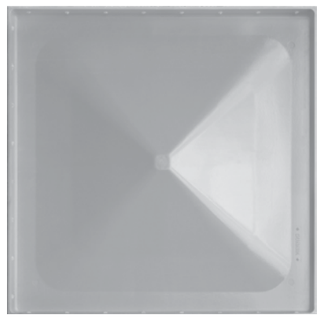


Undetected Water Leakage

Cracks

THE ELEGANCE OF SUNNIK FRP SECTIONAL PANEL TANKS

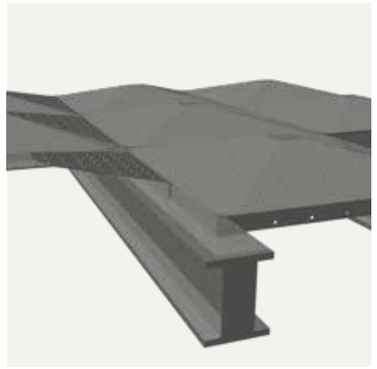
Sunnik FRP (Fibre Reinforced Polymer), a robust composite of glass fiber-reinforced plastic, is celebrated across the aerospace, automotive, marine, and construction industries. Its exceptional strength-to-weight ratio, unmatched durability, longevity, and ease of maintenance render it the preferred material for our sectional panel tanks. Conceived as an answer to the drawbacks of other water storage materials, our FRP tanks are robust, modular, cost-efficient, recyclable, hygienic, and resistant to weather and natural disasters.



Panels performance

BS EN 13280:2001	Requirement	Result	Remark
Luminous Transmittance (Opacity)	0.2% (max)	0%	Passed
Resistance to Deformation	1.0% (max)	0.1%	Passed
Heat Distortion Temperature	70C (min)	97°C	Passed
SS 245:2014	**Requirement**	**Result**	**Remark**
Light Transmission	0.1% (max)	0%	Passed
Tensile Strength	70MN/m2 (min)	80MN/m2	Passed
Bending Strength	100MN/m2 (min)	243MN/m2	Passed
Elastic Modulus	6000MN/m2 (min)	14295MN/m2	Passed
Barcol Hardness	30% or 90% of the resin manufacturer specification whichever is higher	62	Passed
Water Absorption	0.5%(max)	0.1%	Passed
AWWA D121-12		**Result**	**Remark**
Tensile Strength		100MPa	Passed
Flexural Strength		165MPa	Passed
Shear Strength		93MPa	Passed
Compressive Strength		295MPa	Passed
Bearing Strength		200MPa	Passed

ENGINEERED FOR DURABILITY AND DEPENDABILITY



Watertight

Erosion and corrosion free

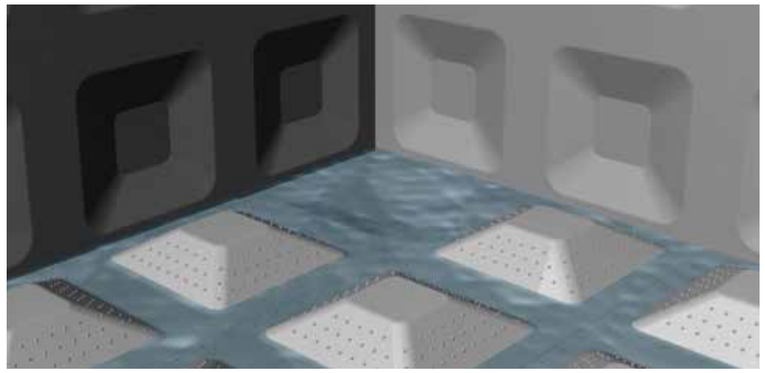
Bid farewell to leaks with Sunnik's FRP sectional panel design. Its unique convex architecture ensures pressure is channeled toward the panel joints, enhancing sealing properties. Equally important, our sealant is food-grade and UV-resistant, ensuring consistent performance under extreme weather conditions and with age.

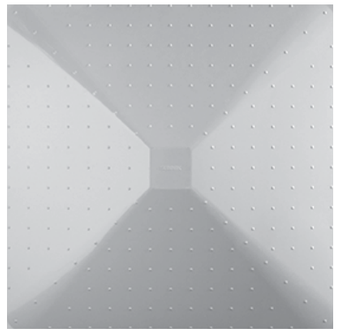
FRP's immunity to erosion and corrosion ensures a watertight system and keeps water pure, untainted by foreign substances. Reinforced with a fiberglass woven mesh, our FRP panels optimize tensile, flexural, and shearing strength, boasting one of the highest structural rigidities in the market.

Reinforced fiberglass woven mesh

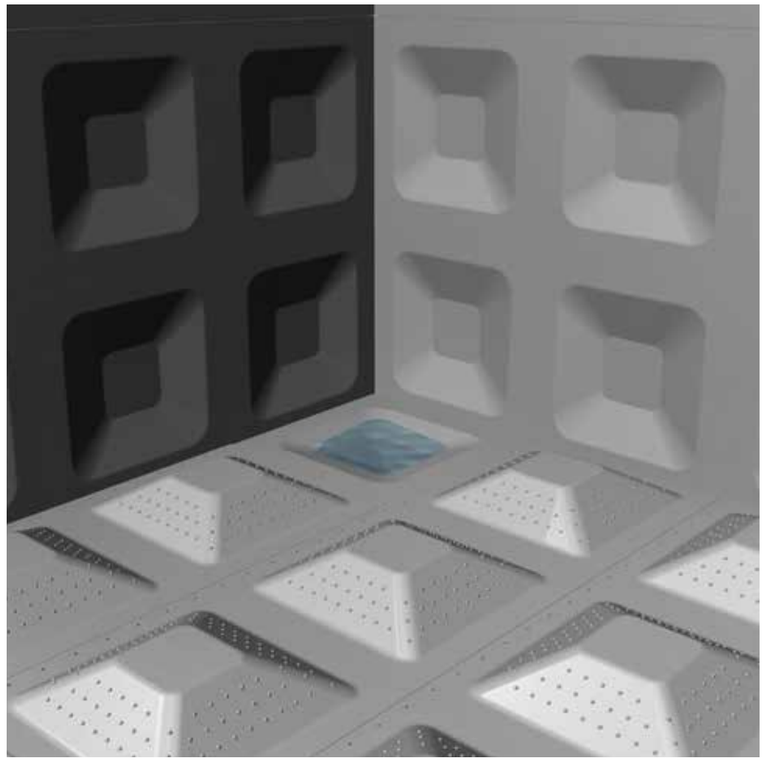
Panel stress test

ECONOMICAL AND LOW-MAINTENANCE SOLUTION





Anti-slip profile



Convex panels and a recessed draining panel

Safety is paramount in our design. Our roof panels feature an anti-slip profile for secure footing, and the outer side panels sport indicators for water levels, facilitating maintenance routines.

Sunnik's FRP tanks are designed with a unique floor comprising of convex panels and a recessed draining panel. This configuration allows water to drain efficiently, eliminating any stagnant water during cleaning.

Compared to the expensive installation and maintenance costs of concrete and steel tanks, our FRP tanks are a cost-effective alternative, requiring neither internal nor external coatings and guaranteeing a long lifespan.

OPTIMAL HYGIENE AND MINIMAL CONTAMINANTS

Free from algae and bacterial growth & chemical residues

Sunnik's FRP panels are designed for maximum opacity, thereby preventing light infiltration, curbing chlorine evaporation, and inhibiting the growth of algae and bacteria. The hot-pressing process yields a mirror-like surface that deters adherence of organic matter.

The non-corrosive nature of FRP ensures water remains untainted by chemicals. Coupled with the absence of styrene residue from our hot-pressing process, our FRP Sectional Panel tanks are ideal for potable water storage.

Versatile Applications

The unique properties of Sunnik's FRP tanks render them suitable for a wide array of uses, spanning commercial mining, food and factory production, air conditioning MAUs, fire protection, industrial liquids, rainwater harvesting, seawater, and wastewater storage. Furthermore, Sunnik's FRP panels are fully certified, having passed the WRAS, UK test BS6920-1:2000 up to 50°C.

- **Partitionable**
- **Extendable**
- **Relocatable**
- **Fit to any room shape**
- **Wrap around complex configulations**
- **Easy-installation with no special equipment required**

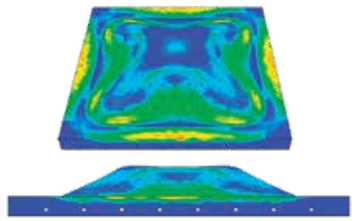
Adaptable and Easy Installation

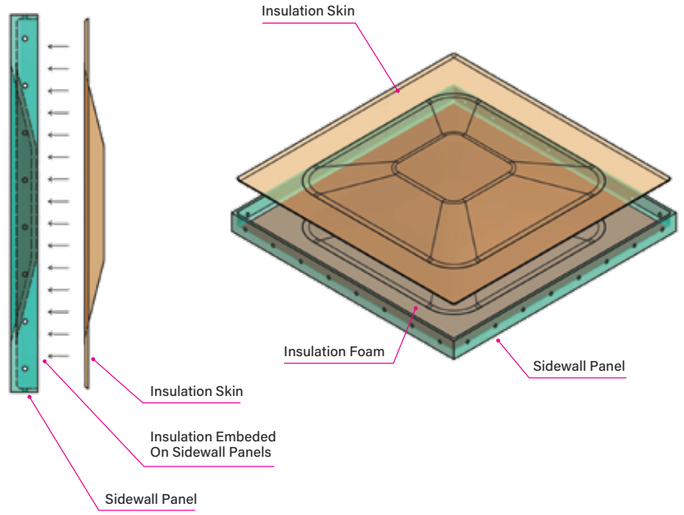
Our tanks can be partitioned for multiple storage compartments or extended for increased capacity. Their modular nature allows relocation with ease. The panel-based design caters to any room shape and wraps around complex configurations.

WEATHER-RESISTANT AND THERMALLY INSULATED

With thermal conductivity 240 times lower than steel, our FRP tanks withstand extreme climates, preventing water from freezing or overheating. Additional insulation can be achieved by installing 25 or 50 millimetre polyurethane foam induction sheets on the external FRP panel walls.

Designed to weather harsh conditions, our FRP panels have a factor of safety (FoS) of 6 times the maximum anticipated loads, ensuring resistance against earthquakes, high winds, and extreme temperature changes.





Sunnik Insulated Panels are meticulously engineered for both hot and cold climates. They come equipped with a high-density, waterproof layer of polyurethane foam which exhibits low thermal conductivity.

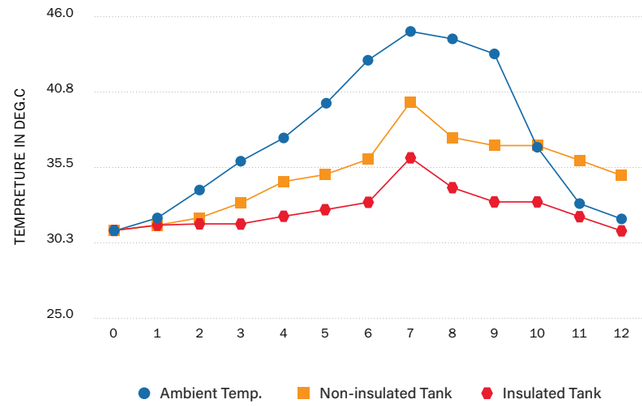
Accelerated Weathering Test

Our dedication to durability sees us undertake rigorous testing to ensure our products can withstand all manners of weathering, both indoors and outdoors. Sunnik's FRP panels have been put through 3000 hours of accelerated weathering tests. Subjected to ultraviolet light through a QUV Weathering Test Machine, the panels also endured 2-minute exposure to water spray for every 8-hour period of UV exposure, preparing them to endure climates of all severities.

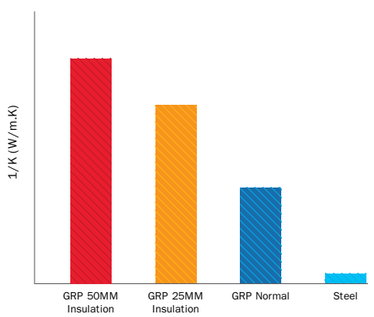
Accelerated Weathering Test Results

MS 1390:2010	Requirement	Result after 3000 hours Weathering Test	Remark
Tensile Strength	70 MN/m2 (min)	95MN/m2	Passed
Bending Strength	100 MN/m2 (min)	226MN/m2	Passed
Elastic Modulus	6,000 MN/m2 (min)	12200MN/m2	Passed
Barcol Hardness	30% or 90% of the resin manufacturer specification (whichever higher)	58	Passed
Water Absorption	1.0% (max)	0.2%	Passed

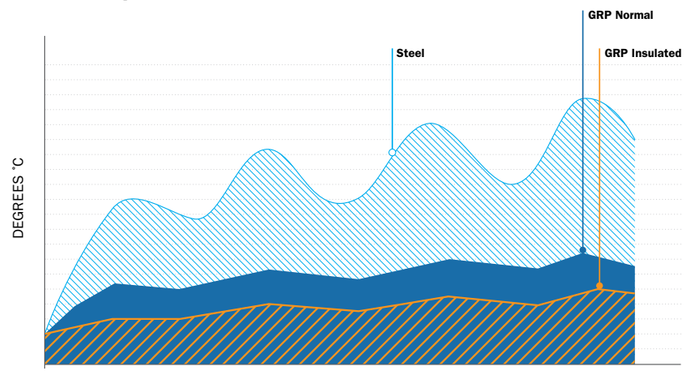
Change of Water Temperature (Hyphenated Test)



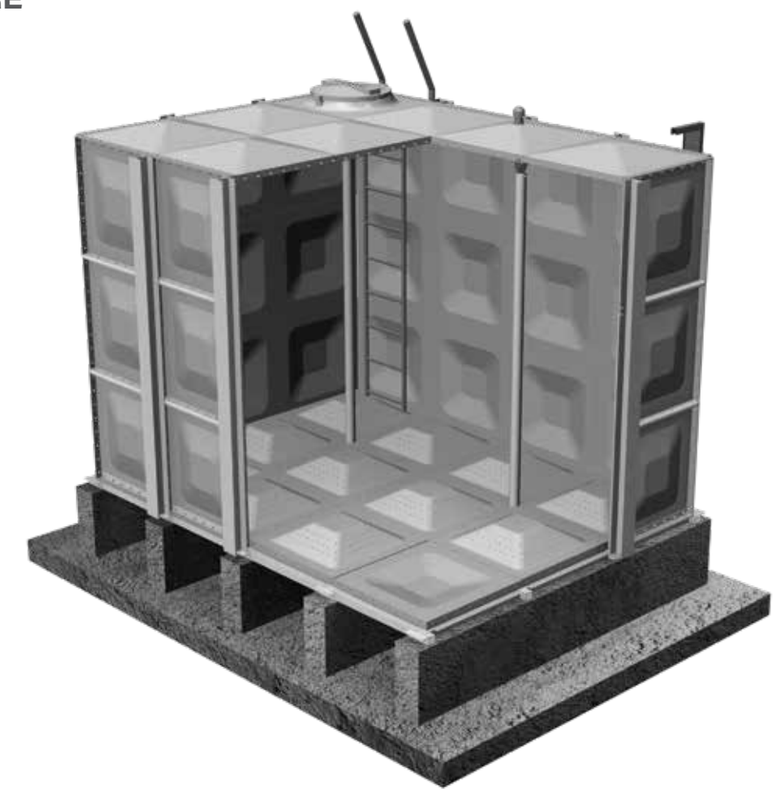
Thermal Insulation Properties



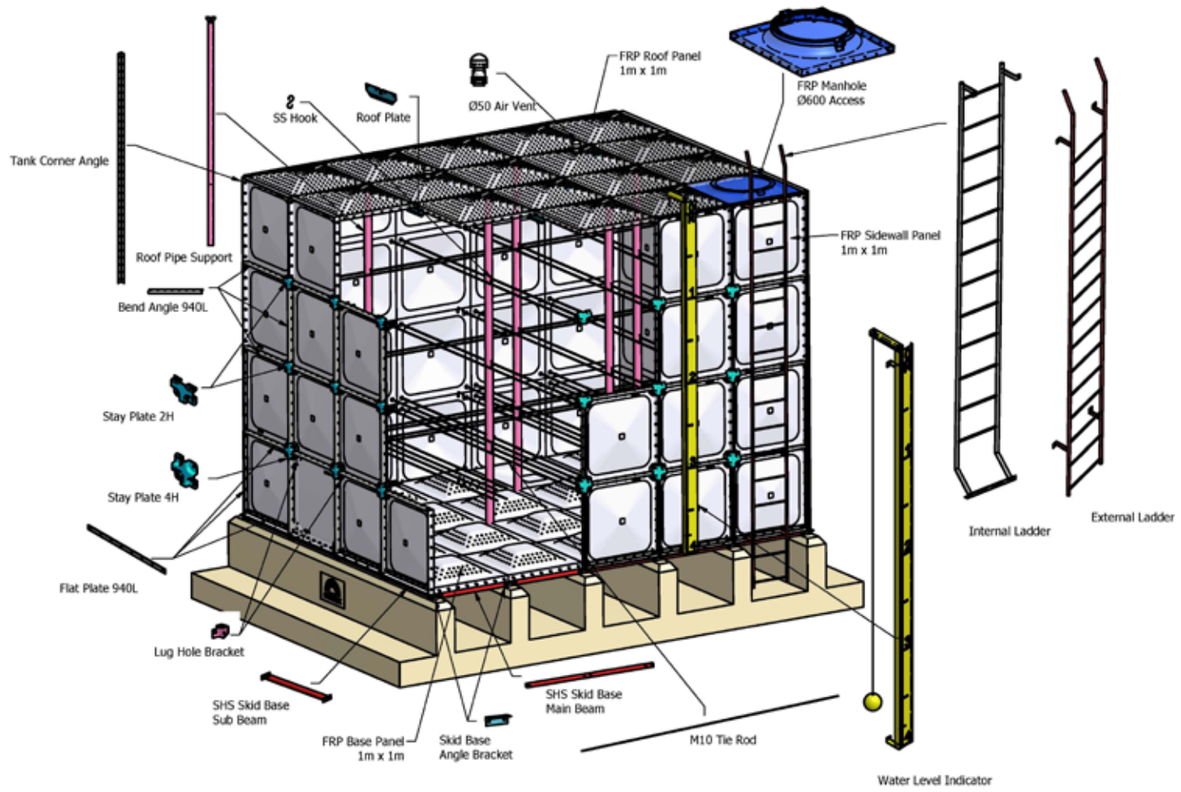
Water Temperature Variation



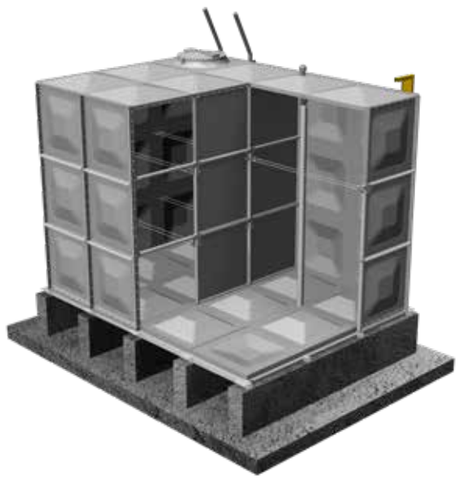
EXTERNAL REINFORCEMENT STRUCTURE



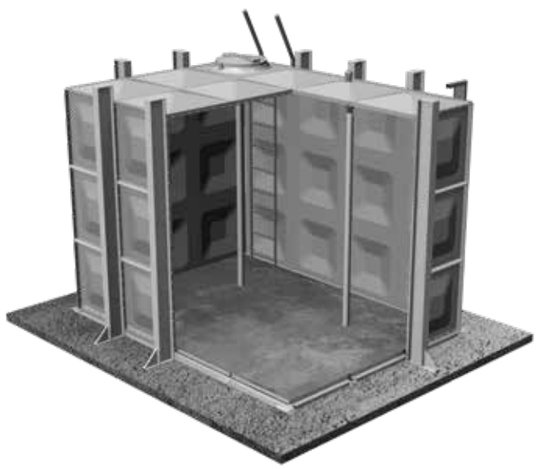
ISOMETRIC VIEW



INTERNAL REINFORCEMENT STRUCTURE

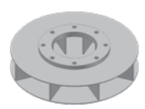


CONCRETE BASE TANK WITH EXTERNALLYBRACED

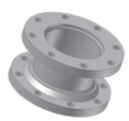


TYPICAL PIPE CONNECTIONS

Vortex Inhibitor with pipe



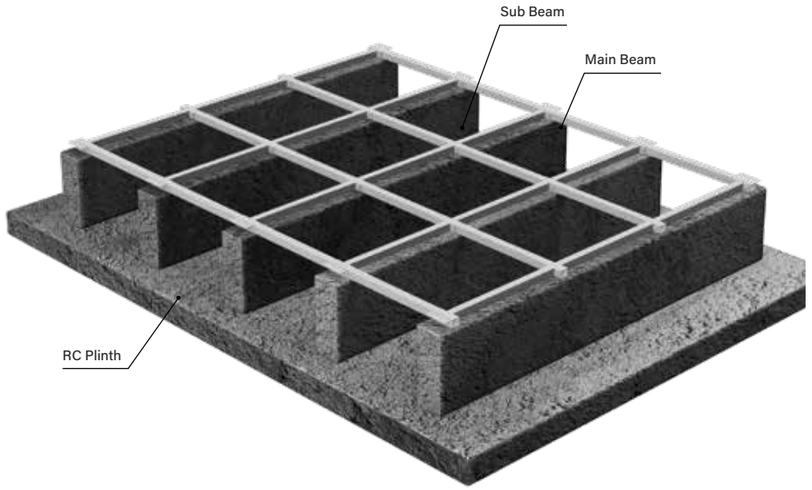
Vortex Inhibitor

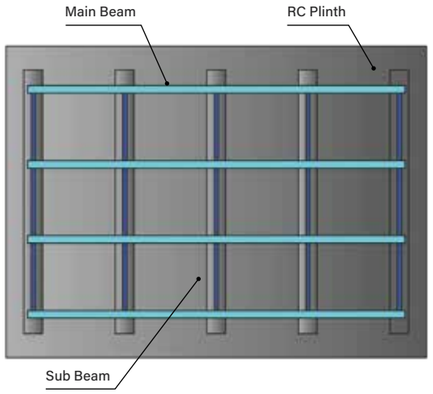


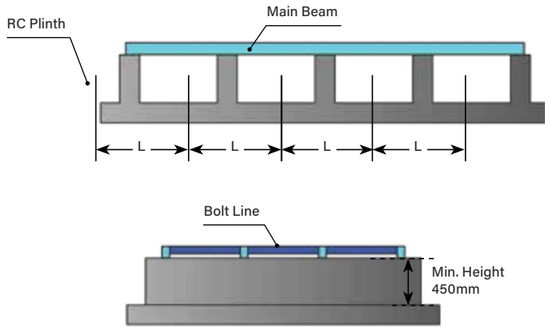
Pipe Nozzle with Flange (HDG)

Nozzle With Socket & ANSI Flange

STEEL SKID BASE







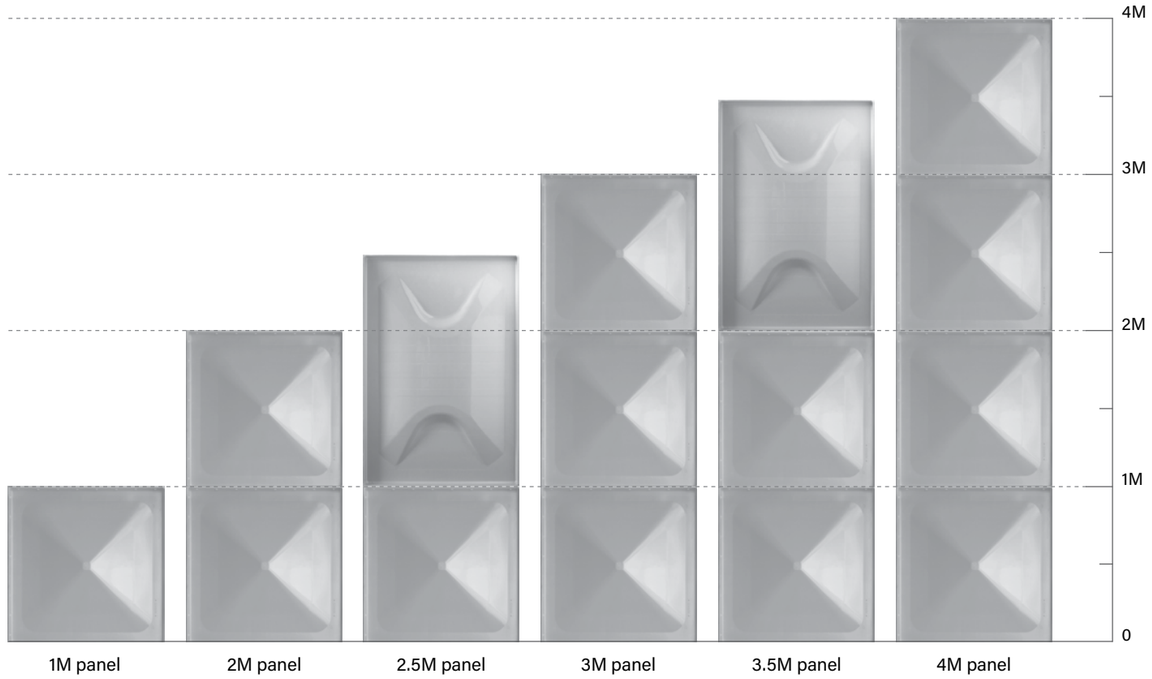
Installation

- When determining the area for the tank, ensure to account for a floor access space ranging from 450 to 600mm.
- Install steel footings on the existing concrete foundation.
- Pre-assembly begins with the precise alignment of panels.
- Application of sealant follows.
- Subsequently, the panels are bolted together.
- The base and wall panels are then connected.
- Installation of roof panels, supports, and pipes occurs next.
- Any necessary reinforcements are then installed.
- Finally, the tank is filled with water to conduct a comprehensive test.

TANK HEIGHT	BEAM	SKID DESIGN SIZES	
		1.0M Plinth (L)	2.0M Plinth (L)**
1.0M	Main Sub	SHS 50 x 50 x 4mm thk SHS 50 x 50 x 4mm thk	CH 100 x 50 x 5mm EA 50 x 50 x 5mm
1.5M	Main Sub	SHS 50 x 50 x 4mm thk SHS 50 x 50 x 4mm thk	CH 100 x 50 x 5mm EA 50 x 50 x 5mm
2.0M	Main Sub	SHS 50 x 50 x 4mm thk SHS 50 x 50 x 4mm thk	CH 125 x 65 x 6mm EA 65 x 65 x 6mm
2.5M	Main Sub	SHS 50 x 50 x 4mm thk SHS 50 x 50 x 4mm thk	CH 125 x 65 x 6mm EA 65 x 65 x 6mm
3.0M	Main Sub	SHS 50 x 50 x 4mm thk SHS 50 x 50 x 4mm thk	UB 100 x 100 x 14.8kg/m EA 75 x 75 x 8mm
3.5M	Main Sub	SHS 50 x 50 x 4.5mm thk SHS 50 x 50 x 4.5mm thk	UB 100 x 100 x 14.8kg/m EA 75 x 75 x 8mm
4.0M	Main Sub	SHS 50 x 50 x 4.5mm thk SHS 50 x 50 x 4.5mm thk	UB 200 x 100 x 17.8kg/m EA 80 x 80 x 8mm

* The recommended skid design sizes are for certain extreme conditions. These may be further enhanced based on the operating environment and conditions determined by the manufacturer. Changes may happen without notice. Please contact the manufacturer for final layout plans.
** Subject to additional charges.

SUNNIK FRP PANEL SIZES



SUNNIK WATER TANKS COMPLY TO:

NSF/ANSI 61
NSF/ANSI 372
MS 1390 : 2010
SS245 : 2014
BS EN 13280 : 2001
WRAS BS6920 : 2014

SUNNIK EXCLUSIVE PANELS DESIGN


Wall panel


Base Panel


Partition/Flat Panel


Roof Panel


Half panel


1.5M wall panel

COMMITMENT TO QUALITY AND ENVIRONMENT

Our unwavering commitment to superior quality is reflected in our rigorous testing procedures and globally recognized certifications.
–

MEMBER OF:

- American Water Works Association
- The International Water Association
- Federation of Malaysian Manufacturers
- Construction Labour Exchange Centre Berhad
- Construction Industry Development Board Malaysia

COMPANY CERTIFICATION:

ISO 9001:2015 BUREAU VERITAS Certification

PRODUCT CERTIFICATION:

- SPAN National Water Services Commission Malaysia
- SIRIM BS1564:1975
- Water Regulatory Advisory Scheme, UK (WRAS)
- State of Qatar Ministry of Interior
- Brunei Water Authority
- Water Authority Hong Kong
- Standards Organisation of Nigeria
- National Center for Research on Earthquake Engineering, Taiwan

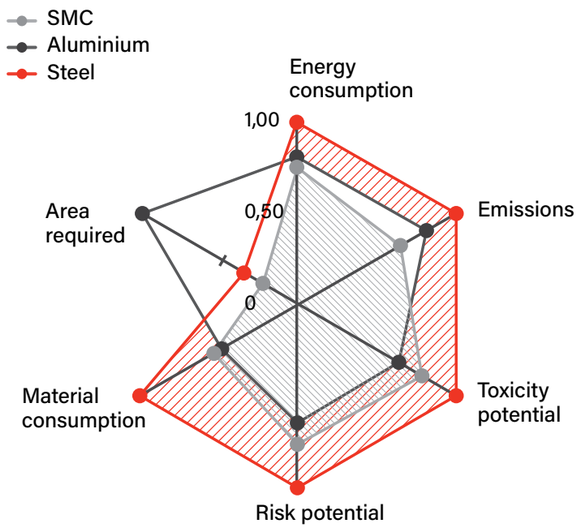
ACCOLADES:

The Malaysia Construction Industry **Excellence Awards 2013**
International Achievement
Special Mention

Federation of Malaysian Manufacturer Award 2014
Top 3 Finalist

COMMITMENT TO QUALITY AND ENVIRONMENT

Sunnik's FRP Sectional Panel solutions are consciously designed with a focus on environmental sustainability. Our solution combats water wastage due to leakage and saves energy in extreme climates by maintaining the water temperature. Being fully recyclable, FRP panels can be reused or ground down for reinforced concrete. Our energy-efficient manufacturing and installation processes, coupled with the modular design of our tanks, contribute to an overall reduced environmental impact.
–



Footprint of SMC FRP parts compared to aluminium and steel

Indubitably, the FRP Sectional Panel tanks are the embodiment of the future of water storage solutions.

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