

# Technical Sheet: In-Slab Tank

## Rain Reviva In-Slab Tank System

The Rain Reviva In-Slab tank has been developed to cater for new houses constructed on a concrete slab. Rain Reviva In-Slab tanks provide architects, designers and builders with a unique water storage solution where space is at a premium by incorporating the water tanks into the concrete slab of the dwelling.

The In-Slab tanks conform to Building Code of Australia AS2870-1996 and manufactured to Australian ISO Standards ISO/9000.2000.

### Features & Benefits

#### Pod design

Innovative design allows for multiple storage units each containing 660 ltrs.

#### Patented Pump Box System

The rigid In-Slab tank system utilises a patented Pump Box which houses the water diversion, litter trap, pump and reticulation piping.

#### Complete kit

In-Slab Tank Solution comes "installation ready" with all components including Pump and Mains pressure control (where applicable). New Water will customise the rigid tank connections to the necessary requirements of the dwelling.

#### Functional design

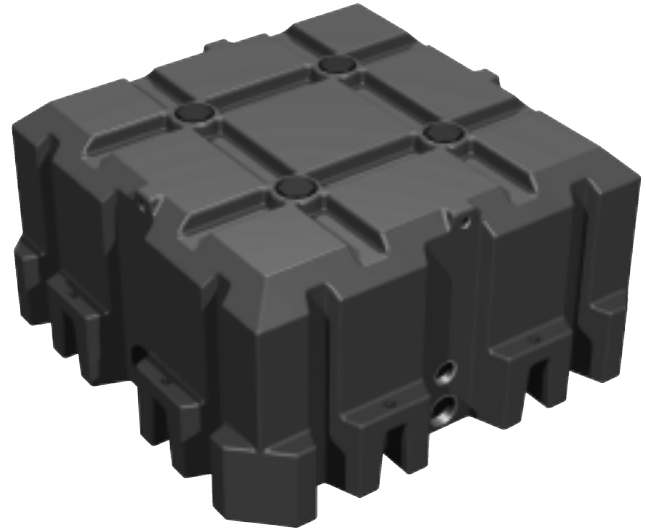
The unique pod design complements existing building techniques minimising the work required to incorporate the tanks into the concrete slab.

#### Integrated approach

The overall design allows the builder to meet the customer's water storage requirements without effecting the aesthetics or features built into the home.

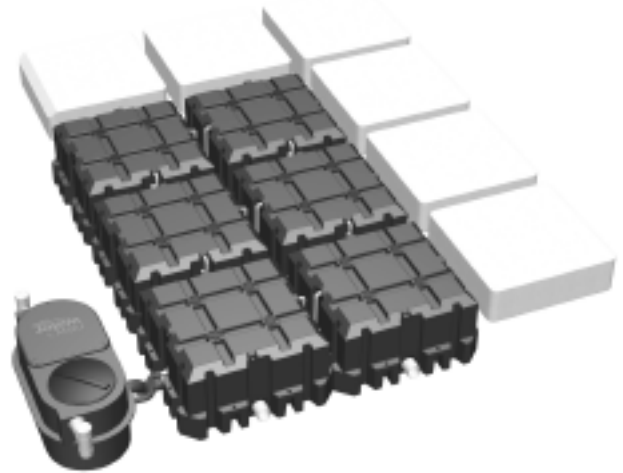
#### Unique Design

The unique design reduces the need for an expensive underground tank or a more traditional above ground tank. The In-Slab tanks work by storing the captured rainwater under the dwelling in a number of interconnected tanks or 'cells'.



Water is collected by and then distributed to various outlets around the home by a patented pump system developed by New Water.

The number of tanks incorporated into the slab is dependant on the amount of storage that you decide is necessary. Some slab types may have a bearing on the final capacity available.



#### Rigid 'Pod' In-Slab Tank

Capturing 660 litres per unit the rigid tank acts as a replacement for an EPS Pod (Expanded Polystyrene Pod) in a Waffle slab without effecting the integrity of the slab. These tanks can be linked together to enable water storage in as many tanks as there are waffle pods.

The rigid pod system can also be utilized under a "Raft slab".

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## Specifications

Each rigid tank is made from rotational-molded Polyethylene. The In-Slab tank has been tested in accordance with AS3610-1995 relating to the structural capacity of a tank to withstand the applied load of the concrete during construction. The assessment of the tank in accordance with AS3610-1995 was conducted by Cardno, a leader in FEA (Finite Element Analysis).

## Tank Capacity

A single Rain Reviva In-Slab tank has a 660 litre capacity. The number of rigid tanks that can be incorporated into the slab is limited only by the size and type of slab. The unique design of the rigid tank allows for multiple units to be installed in a collective group, increasing the overall capacity of the combined tank system.

## In-Slab Tank Design

The In-Slab tank has been designed by engineers incorporating all the relevant requirements relating to strength, thermal and other related considerations.

The patented In-Slab tank design is compliant with Building Code of Australia – Residential Slabs and Footings-Construction AS2870-1996. In-Slab tanks are manufactured under strict ISO/9001.2000 Standards.

Constructed from polyethylene, the tank is designed in such a way that it can be used as the formwork within the slab.

## Warranty

All Rain Reviva In-Slab tanks are backed by 10 year money back guarantee.

## Design Process

Using the plans from the architect/designer/builder, New Water will make recommendations as to the positioning of the rigid tanks within the dwelling's slab to optimise the capture of rainwater.

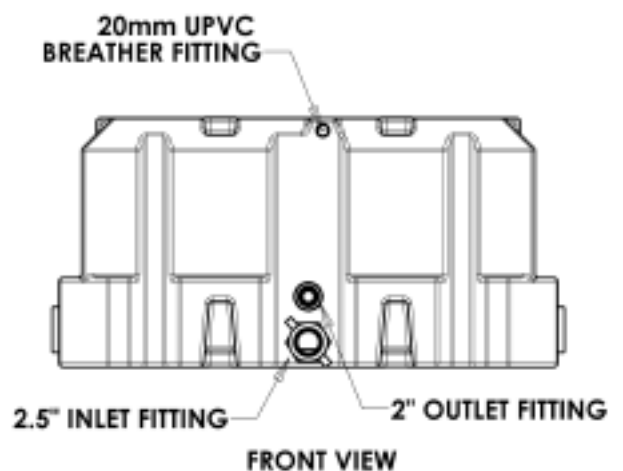
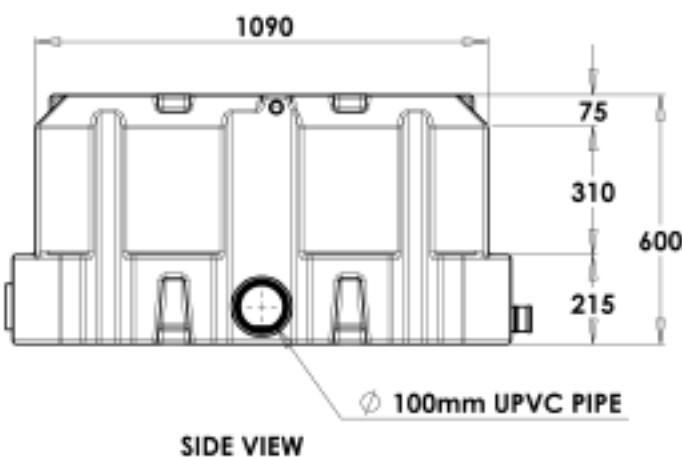
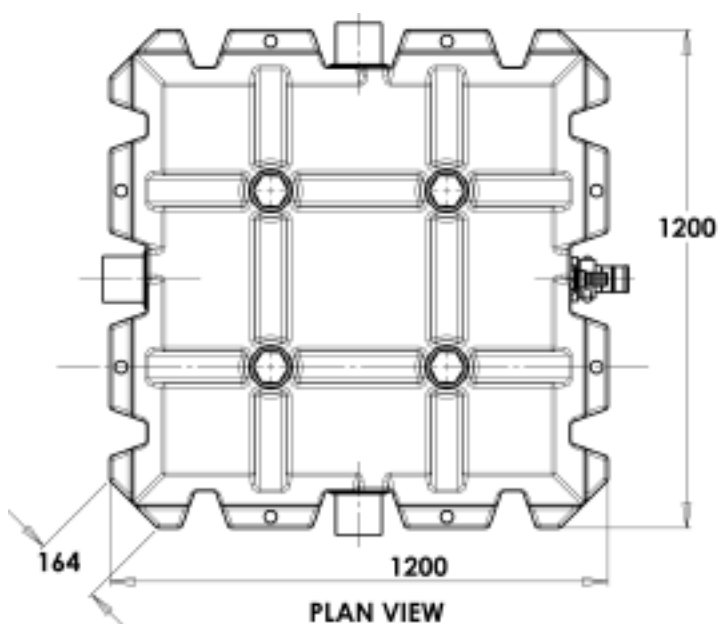
Upon the tank positioning being approved by the architect/designer/builder, New Water will then customise the system package for the dwelling.

New Water will supply the tanks with all necessary fittings to complete the installation.

## Applicable Rebate

Your clients may be eligible for a rebate from their state or local government – check with your New Water consultant to determine which rebates are applicable in utilising the In-Slab tank solution.

*Dimensions*



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## Installation overview

The set-up and installation process encompasses the following steps:

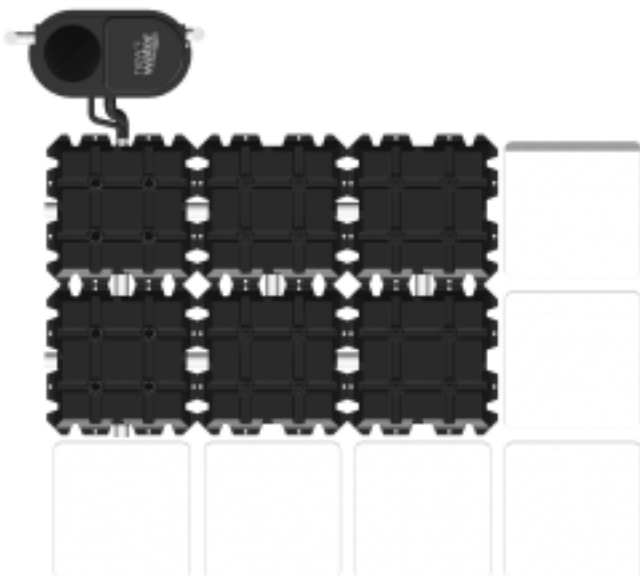
### 1. Scoping

- Establish quantity of storage – identify the volume of water required and divide by 660 giving the number of tanks required. (each tank holds 660ltrs).
- New Water will provide 'foot print' of plan for builder (including tank orientation).

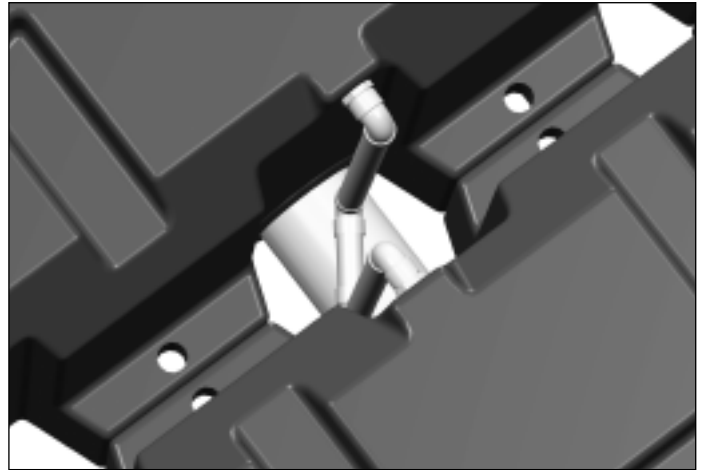
The rigid In-Slab tanks are supplied ready to install with all necessary components including a pump and mains pressure control (where applicable).

### 2. Prior to pouring the slab:

- Excavate slab 'cut' by additional 320mm in the plan areas identified by New Water.
- Place the rigid tanks on a bed (20mm) of sand or similar non-compactable material.
- Lay the tanks symmetrically within the waffle pod pattern as per the foot print plan provided by New Water (in the already excavated area).
- Check that tanks are aligned according to the foot print supplied by New Water.
- Ensure the key seals on the tanks are appropriately located.
- Connect each tank together using the 100mm UPVC Connection pipe supplied by New Water. Each UPVC Connection pipe has a 'shoulder' to ensure that the pipe is not inadvertently pushed into the tank.
- Lightly tap the UPVC Connection pipe into the tank until the shoulder located on the connection pipe is resting against the rubber key seal appropriately.



- Link the next tank to protruding UPVC Connection pipe.
- Repeat until all tanks are connected together via the UPVC Connection pipe.
- Fit the Storm water Inlet pipe and the Pump Outlet fitting to the primary tank and extend past the concrete perimeter beam's space.

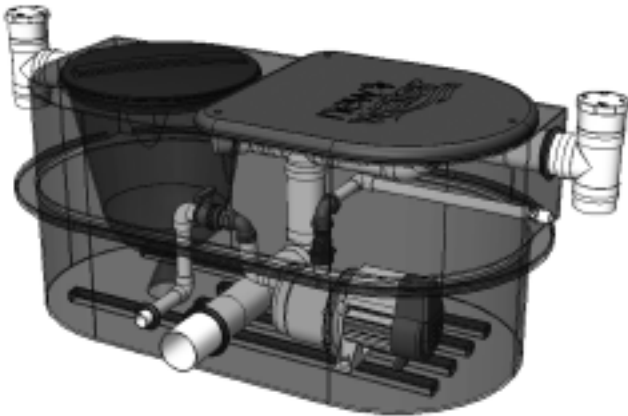


- Installed correctly on a standard slab the Storm water Connection Pipe will be below the bottom of the beam. The Pump Inlet pipe may, in some situations pass through the beam and should be protected accordingly.
- Once all tanks are linked together using the UPVC Connection pipe – fit the Breather-bypass tubes to the tanks.
- The breather bypass tube is a flexible tube connected at the top of each tank that extends down below the concrete beam and up to the next tank. As the name suggests, the breather bypass tubes allows air to circulate through the tanks and must be fitted prior to the concrete pour.
- Upon fitting all of the UPVC Connection pipes and the Breather Bypass tubes, test the tanks with water to ensure the seals are water tight and the bypass tubes are working correctly.
- To test the installation, pump water above the height of the connection points.
- When the testing is complete cover Storm water, Inlet and Pump Outlet pipes with suitable protection sleeve(s) and cover(s).
- Secure the rigid pods with correct stable back-fill by placing sand in the void ensuring that the UPVC Connection pipes are protected and not placed under stress. Tanks may be anchored using the anchor points located around the perimeter of the tanks using suitable anchor pins.

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3. At a later time in the construction that suits the building program
- Align the Pump Box with the Storm water Inlet and Pump Outlet on the primary tank.
  - Remove protection sleeve(s)/cover(s) from Inlet and Outlet pipes on the primary tank
  - Connect the external Pump Box to the Storm water drain line.

**PUMP BOX**



**PUMP BOX INSTALL**



**Waffle Slab**



**Raft Slab**

- Ensure the box is placed on a bed of free draining, non-compacting material and secure the box adjacent to the edge of concrete slab.

- Connect the Storm water Inlet and the Pump outlet to the necessary fittings in the Pump Box. (In some areas a storm-water by-pass may be required).
- Connect the Pump Box to the electrical connection
- Basic system is now set-up

## Water to Garden

In instances where the rainwater is only being used in the garden and not in the home, the set-up will require a Pump to distribute the water to the required end points. No Mains back-up supply required.

## Water to Home

Water captured and stored in the tanks in can be re-used for multiple household purposes including human consumption (in some cases), use in the washing machine or to flush toilets. In these situations, the system may need to be connected to Mains (back up) water supply to ensure there is a constant supply of water to the home in situations when there is insufficient rainfall.

The Mains switch connects to the pump and automatically switches the water supply from the tank to Mains water supply when it senses insufficient tank water.

Regulations dictate that Mains water quality is to not be put at risk when a tank system is connected to the Mains water supply.

In situations where the system is connected to the Mains using a Mains back-up switch, then the system should include a 'check-valve' designed to protect the mains water quality.

A registered plumber will be required to install either option to ensure that the install meets plumbing regulations.

## Accessories

There is more to a water saving solution than just the tank. New Water has a range of innovative products that are designed to improve the utilisation of your rainwater. These products include First Flush devices, Leaf Diverters, Water filters, Pumps and Mains (back up) switches. Your New Water consultant can assist you in determining which accessories are best suited to your project.