



INSTALLATION INSTRUCTIONS

THANK YOU FOR CHOOSING reo sac®
THE REVOLUTIONARY REINFORCED RAINWATER STORAGE SYSTEM

Before you begin, please take time to review the installation instructions and cross check the components against the component check list enclosed.

IMPORTANT

To validate the Warranty and ensure correct operation, the system must be installed by a licenced plumber or an accredited installer in accordance with the installation instructions. Please refer to the Warranty document in the Home Owner's envelope.

- FOR WIDTHS OF 1.1M AND 1.3M THE MAXIMUM FILL HEIGHT OF THE BLADDER IS 500MM FROM THE BASE AT THE LOWEST POINT OF THE BLADDER. THE OVERFLOW HEIGHT IS DETERMINED BY SETTING THE OVERFLOW INVERT NO HIGHER THAN 500MM FROM THE BASE AT THE LOWEST POINT OF THE BLADDER.
- FOR WIDTHS OF 1.5M AND GREATER THE MAXIMUM FILL HEIGHT OF THE BLADDER IS 600MM FROM THE BASE AT THE LOWEST POINT OF THE BLADDER. THE OVERFLOW HEIGHT IS DETERMINED BY SETTING THE OVERFLOW INVERT NO HIGHER THAN 600MM FROM THE BASE AT THE LOWEST POINT OF THE BLADDER.
- All Installations must conform to the Plumbing Code of Australia & NZ AS/NZS 3500 and HB230-2008 Rainwater Tank Installation Handbook.
- Do not under any circumstances use a knife or sharp object to open the box with the bladder in it or to cut the cardboard.
- The supplied fail-safe relief flap is a critical component of the reo sac® system and as such, must be installed to prevent over filling of the bladder in the event of a blockage in the stormwater system beyond the overflow.
- The bladder or mounting plate frame must not touch any part of any building structure.
- Ensure the outlet fittings and vent pipe fitting are tight and have not loosened during transport or installation of the bladder. When tightening the ball valves, ensure that the outlet fittings attached to the bladder are not rotated or over-tightened as this may compromise the seal of the outlets.
- If the reo sac® is not installed on a concrete base, concrete pavers must be used to support the legs of the mounting plate mini-frame. The pavers (min 200mm x 200mm x 25mm) must be recessed so that the top of each paver is level with the reo sac® base.
- There must be no cross connection between the overflow pipe and the inlet pipe. The overflow pipe-work must allow the unrestricted flow of water from the bladder and delivery pipes to the stormwater. No in-line mosquito or other filters are to be used in the pipe work.
- The bladder material is not UV stabilised. If the bladder is exposed to direct sunlight it must be protected by a cover.
- Do not roll out the reo sac® until the full installation and site work are complete. **DO NOT WALK** on the installed reo sac® under any circumstances.

INSTALLATION INSTRUCTIONS

ALL INSTALLATIONS MUST CONFORM TO THE PLUMBING CODE OF AUSTRALIA & AS/NZS 3500 AND HB230-2008 RAINWATER TANK INSTALLATION HANDBOOK.

1. OPENING PACKAGING

- **Do not under any circumstances use a knife or sharp object to open the box containing the bladder**
- Check the components against the COMPONENT CHECK LIST.
- Immediately report any damage or discrepancy to the supplier by phoning 02 9113 5593
- Ensure you do not open the protective plastic sleeve around the bladder until it is ready for installation and you have laid out the geo-textile ground sheet.

2. SITE PREPARATION

- Clear the site of any sharp objects and rake the area thoroughly to create an even and clean base for the **reo sac®** to rest on. A bed of crusher dust or sand may be added to assist in site preparation.
- The **reo sac®** **must** be installed level along its length and across its width.
- **Note:** To achieve maximum capacity, multiple bladders must be installed on bases that are at the same level. If that is not possible, then ensure higher bladders fill first and overflow to lower bladders and use check valves to prevent one bladder automatically “transferring” water from one bladder to another.
- If the bladder is being installed as part of other building works and it is being installed early in the building process, ensure that the frame, geo textile and bladder tank are completely protected from any building activity or debris.
- Where there is a risk that a damaged or leaking bladder tank may cause damage to another part of the property, then some form of spill containment or diversion is recommended to remove the risk of damage (such as bund walls or similar).

3. RAINWATER INLET PIPES

- 90mm or 100mm PVC pipe may be used for inlet pipes.
- Multiple downpipes may be connected together before connection to the **reo sac®**. Ensure that there is at least one overflow for every two downpipes. **When** two downpipes are connected to the system a second fail safe relief point should be added just above the point of overflow to protect the bladder tank in significant rainfall events where the overflow cannot cope with the amount of rain. See diagram 5. The **reo sac®** has a 100mm over-pipe inlet fitting. This may be reduced to 90mm if necessary using the 100mm butt pipe and 100mm-90mm reducer provided.
- Suspend the inlet pipes from the floor structure with sufficient brackets to ensure they will not distort when full.
- If pipes are to be laid on the ground, ensure a suitable bedding of sand and cement is used to avoid future movement of pipes. The **reo sac®** system is designed so that there will be no moving pipe work.
- If a charged system is being used to fill the bladder, the delivery pipe should rise to the overflow height before it enters the bladder. The overflow should then be installed at the top of the rise no higher than 600mm above the base of the bladder tank.

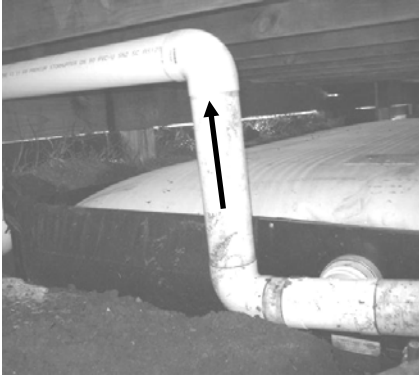
4. DOWNPIPE CONNECTIONS & FILTRATIONS

- A leaf catching rainhead **must** be installed on each downpipe supplying water to the **reo sac®**. A first flush diverter is also recommended for each downpipe (refer diagram 1). Refer to diagram 1 and HB230-2008 Rainwater Tank Installation Handbook. The quality of the water is only as good as the area from which the water is collected.

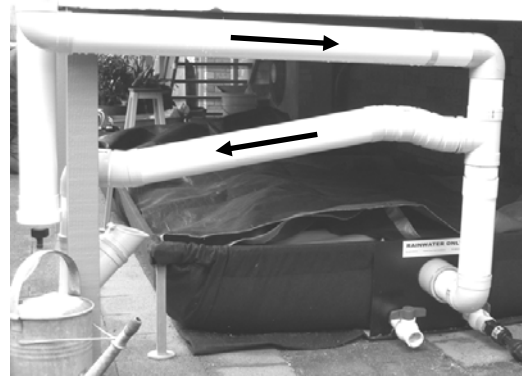
5. OVERFLOW

- The maximum fill height of the **reo sac®** is 600mm (or 500mm in the case of 1.1m and 1.3m widths). The over flow is installed as part of the pipes that fill the bladder. There is no separate overflow fitted to the **reo sac®**. The fill height is determined by the height of the invert of the overflow relative to the base (i.e. lowest point along the length) of the bladder. The invert of the overflow must be no higher than 600mm (or 500mm in the case of 1.1m and 1.3m widths) above the lowest point of the base of the bladder to ensure that the bladder is not overfilled thereby voiding the warranty.

- There must be no cross connection between the overflowing water and water being delivered to the bladder.
- The overflow pipe work must allow the unrestricted flow of rainwater to the stormwater outlet. Where more than one downpipe has been connected to deliver water to the bladder tank, a second fail safe relief point should be added just above the point of overflow to protect the bladder tank in significant rainfall events where the overflow cannot cope with the amount of rain. See diagram 5.
- Overflowing water must not have to “push up” before overflowing to stormwater. Ideally the overflow should be a T” junction in the delivery pipe at the required height.
- Ensure that there is **at least one overflow for every two downpipes** that enter the bladder.
- When two 90mm downpipes are joined together, the pipe diameter should be increased to 100mm from that point. If the stormwater in-ground overflow pipe diameter is 90mm, run the overflow from the bladder at 100mm and allow for some form of fail-safe overflow (for example, a gully trap might be installed with an air gap at the point at which the stormwater enters the ground).
- Ensure there is no fixed form of filtration located inside any pipe work as it will restrict the flow of water and may become blocked with debris. (i.e. in-line mosquito filters etc)



Not Recommended: Over flowing water must push up before going down to storm waste, this not recommended



Recommended: Over flowing water can flow freely to storm waste.

The above photos are shown for indicative purposes only

(Note: these photos show eco sac® installations, but the filling and over flow systems are the same for reo sac®)

6. FAIL-SAFE RELIEF FLAP VALVE

- The supplied relief flap valve is a critical component of the **reo sac®** system. It prevents the bladder over filling in the event of a blockage in the storm water system. The flap valve is not required if a gully trap with an air gap is installed as described in Section 5 above.
- The relief flap valve must be installed past the overflow point preferably on the exterior of the building, below the maximum fill height of the bladder (refer diagrams 1 and 5).
- A second fail safe overflow point should be installed just above the primary overflow where two or more downpipes are supplying water to the eco sac® to ensure that it does not overflow during significant rainfall events. See Diagram 5.

7. MOUNTING PLATE FRAME & BLADDER INSTALLATION

THE EMPTY BLADDER OR THE MINI MOUNTING PLATE FRAME MUST NOT TOUCH ANY PART OF THE BUILDING STRUCTURE

- Push the four metal lengths into the corner legs, align the pre-drilled holes and fix them in place with the Phillips-head wafer screws, creating the square mounting plate frame.
- Place the mounting plate inside the now constructed square frame and using the pre-drilled holes in the mounting plate, centre and fix the mounting plate to the frame using two of the hex-head self-tapping screws provided (there are no pre drilled holes on the frame for the mounting plate). Refer diagram 3.
- Place the 520mm support bar at the lowest point on the inside edge of the frame and behind the mounting plate. Attach it to the inside of the legs using the remaining 2 hex-head self-tapping screws (there are no pre drilled holes in the legs). Refer to diagram 3 and the photos below).



- Where there is no concrete or solid base for the **reo sac®** frame to be placed on, pavers should be used to support the mounting plate frame legs. Dig out the ground material and recess a concrete paver (minimum 200mm x 200mm x 25mm) under each leg. Ensure that the concrete pavers are recessed so that the top of each paver is level with the base of the bladder. This is required in order for the **reo sac®** warranty to be valid.
- Lie out the geo-textile so that the inlet and outlet holes in the fabric are at the mounting plate end.
- Keeping the bladder inside the plastic bag, place the bladder on the geo-textile at the mounting plate end of the frame. Ensure no sharp instrument is used to cut the bag. Remove the bladder from the plastic bag.
- Partially unroll the bladder exposing the inlet and outlet fittings to enable connection through the mounting plate. Place the inlet and outlets through the geo-fabric and then through the mounting plate ensuring that the geo-textile is between the mounting plate and the **reo sac®**. The bladder should not be fully unrolled until installation is complete. **Do not walk on the reo sac®.**

8. INLET CONNECTION

- The inlet is a 100mm female fitting designed to fit 100mm DWV PVC pipe.
- As with all glued connections, the pipe and fitting must be primed and glue applied to both surfaces.
- Be careful to ensure a consistent and water tight seal is achieved between the inlet and the 100mm delivery pipe (or 100mm butt pipe if a reducer to 90mm is being used).
- 100mm or 90mm PVC pipe (in the case of one inlet downpipe connected to the **reo sac®**) can be used to connect to rainwater supply using standard fittings and reducers.

9. OUTLET CONNECTION

- Position the two outlets and the 100mm inlet fitting through the geo-textile ground sheet and the mounting plate so that the geo-textile ground sheet is between the bladder and the mounting plate.
- To hold the two outlet fittings in place, screw the two 32mm lock-nuts on to the outlets until the lock-nuts are against the edge of the mounting plate.
- Using Teflon tape to seal the pipe, screw the two poly ball valves on to the outlet fittings.
Important: Ensure that the outlet fittings are tight and have not loosened during transport or installation of the bladder. When tightening the ball valves, ensure that the outlet fittings attached to the bladder are not rotated or over-tightened as the seal of the outlets may be compromised.

10. POSITIONING OF BLADDER ON THE GROUND SHEET

- Unroll bladder fully and ensure it is lying flat and centred on the geo-textile ground sheet.
- Extend bladder to full length to minimise 'bunching' at the inlet/outlet end.
Do not walk on the rolled out reo sac®.

11. AIR VENT WITH MOSQUITO PROTECTION

- A 25mm air vent is situated in the centre of the top of the bladder to release air in a rapid-filling rain event.
- Push the provided 25mm vent pipe with mosquito protection over the air vent. If there is insufficient height for the pipe, shorten it to suit the available height subject to the following note.
- **Important: Ensure that the stormwater overflow point is below the top of the air vent so that water will not be able to overflow through the air vent.**

- Check the lock nut on the **reo sac®** air vent is tight and has not loosened during transit.

12. PUMP CONNECTION

- All pumps should be installed in accordance with the manufacturer's instructions.
- The pump should be installed at, or where possible, below the outlet level to ensure 'flooded suction' when there is water in the bladder.
- Ensure the area is flat and free of debris.
- A suitable concrete paver should be used as a base to secure the pump.
- Ensure an appropriate power outlet is provided.
- Connect high pressure poly pipe to one of the ball valves. The second ball valve is for any additional bladders connected to the system or for a float chamber in the case of a mains water controller in a single bladder installation.

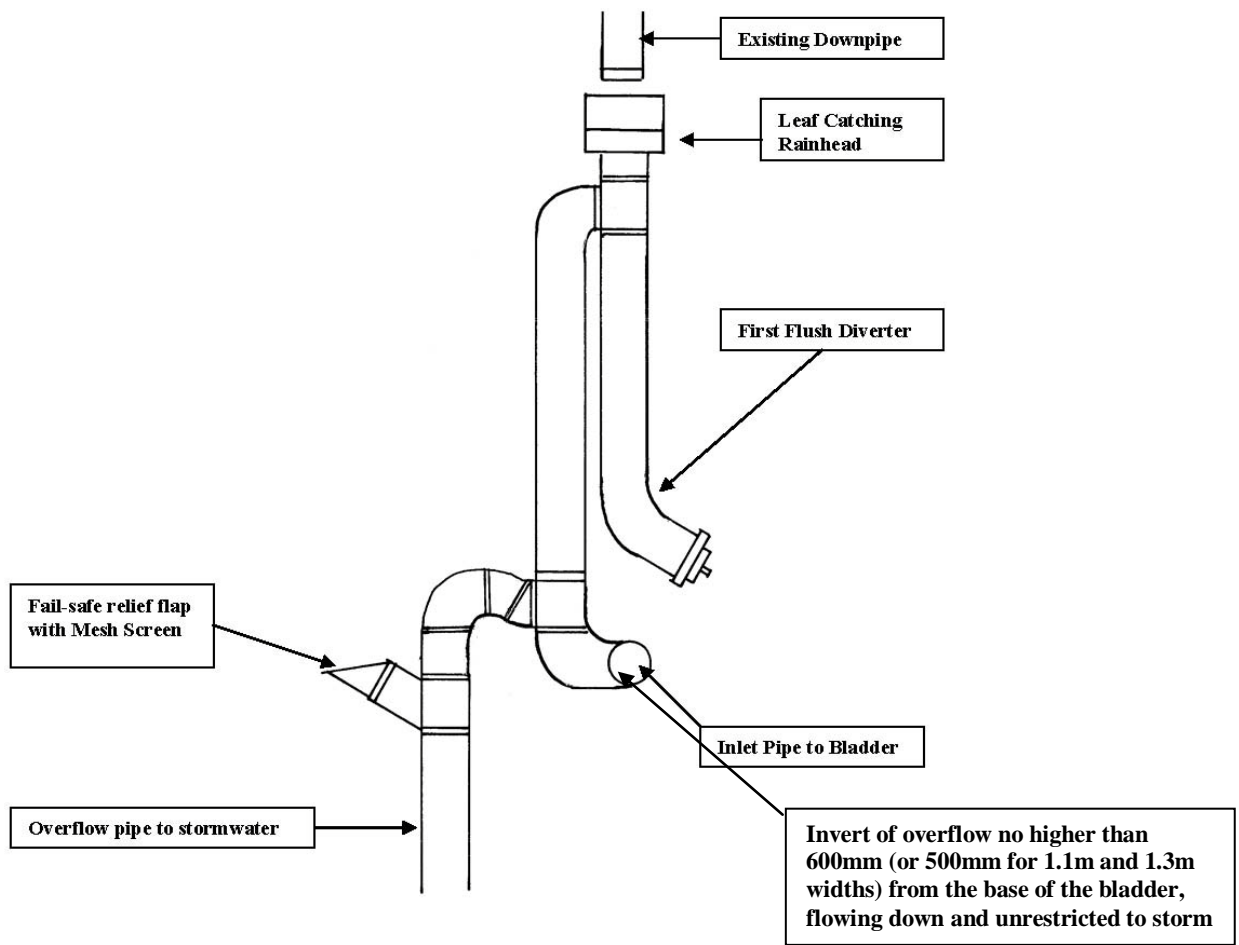
13. ADDITIONAL BLADDERS

- Additional bladders may be connected to the first bladder and should be installed in a similar manner to the first bladder. Any additional bladders should be installed at the same level as the first bladder to prevent overfilling of either bladder. If additional bladders are to be installed at different levels, refer to Note 2: Site Preparation.
- Bladders installed on the same level can be connected by a manifold on the inlet pipe work (refer diagram 4).
- Connect the second tank outlet on the first bladder to one of the outlets on the additional bladder.
- Ensure any unconnected ball valve is turned to the 'OFF' position.
- Where a site requires two bladders to be installed at different levels, the higher bladder should be installed to overflow into the lower bladder (under no circumstances should the inlet pipes of the two bladders be connected using a manifold). To prevent a higher bladder "leaking" into a lower bladder, appropriate check-valves should be installed on the outlets of the lower bladder.

14. PROTECTING YOUR REO SAC

- The material the **reo sac®** is made from is **not** UV stabilised so the bladder must not be exposed to any direct sunlight. If the bladder is exposed to direct sunlight the warranty on the bladder will be void. Cover the bladder with a tarpaulin or something similar ensuring that the bladder is not restricted from filling to its full capacity
- If the **reo sac®** is under a deck and the deck needs to be oiled, painted or cleaned with heavy cleaning agents, the bladder must be protected from any stains, oils, tannins or similar falling on to the bladder. If liquids do fall through and stain your **reo sac®**, it will reduce the longevity of your **reo sac®** and it will void the warranty

Diagram 1: Downpipe schematic of Inlet with Overflow and Fail-Safe Relief Flap



sac® Framework – Top View

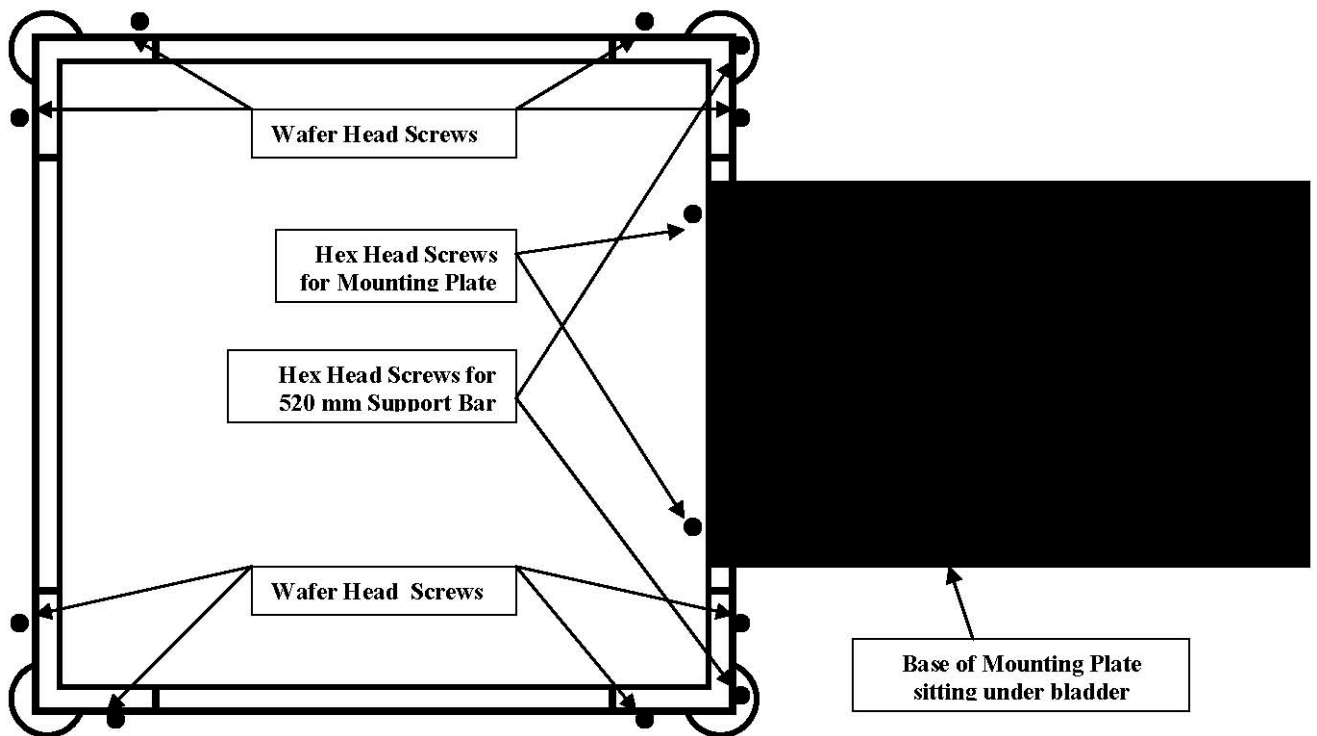


Diagram 3: reo sac® Framework

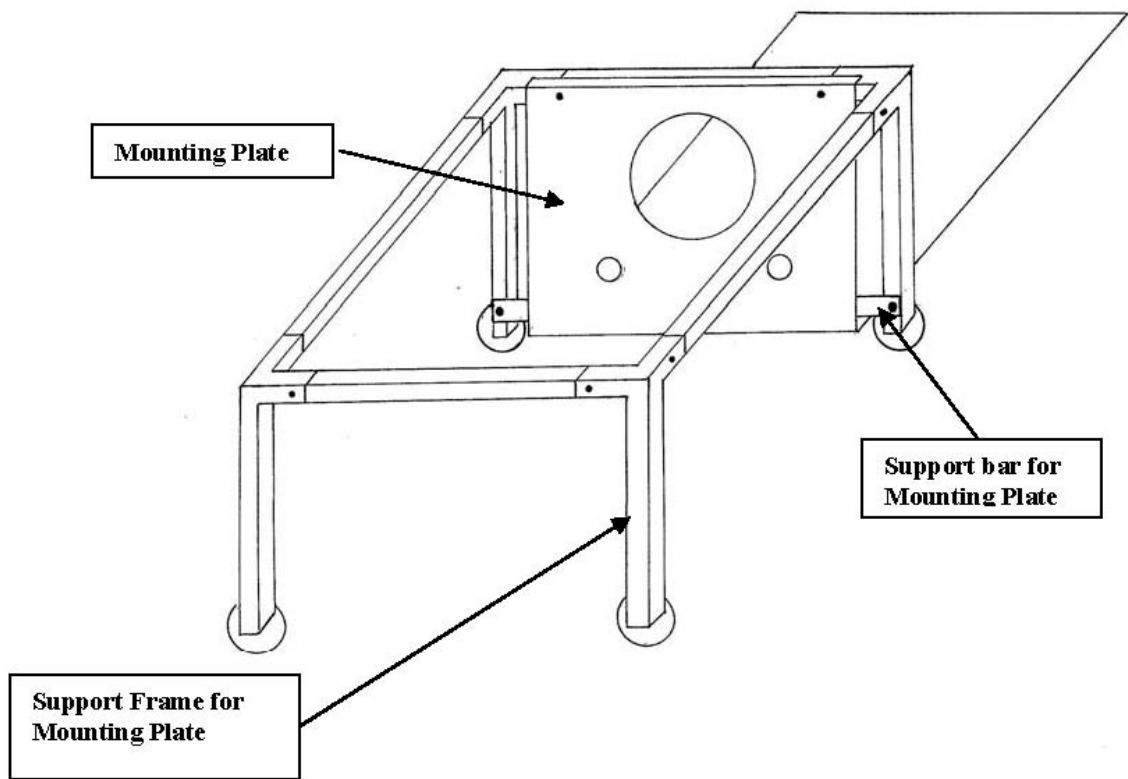


Diagram 4: reo sac® Multiple Bladder installation

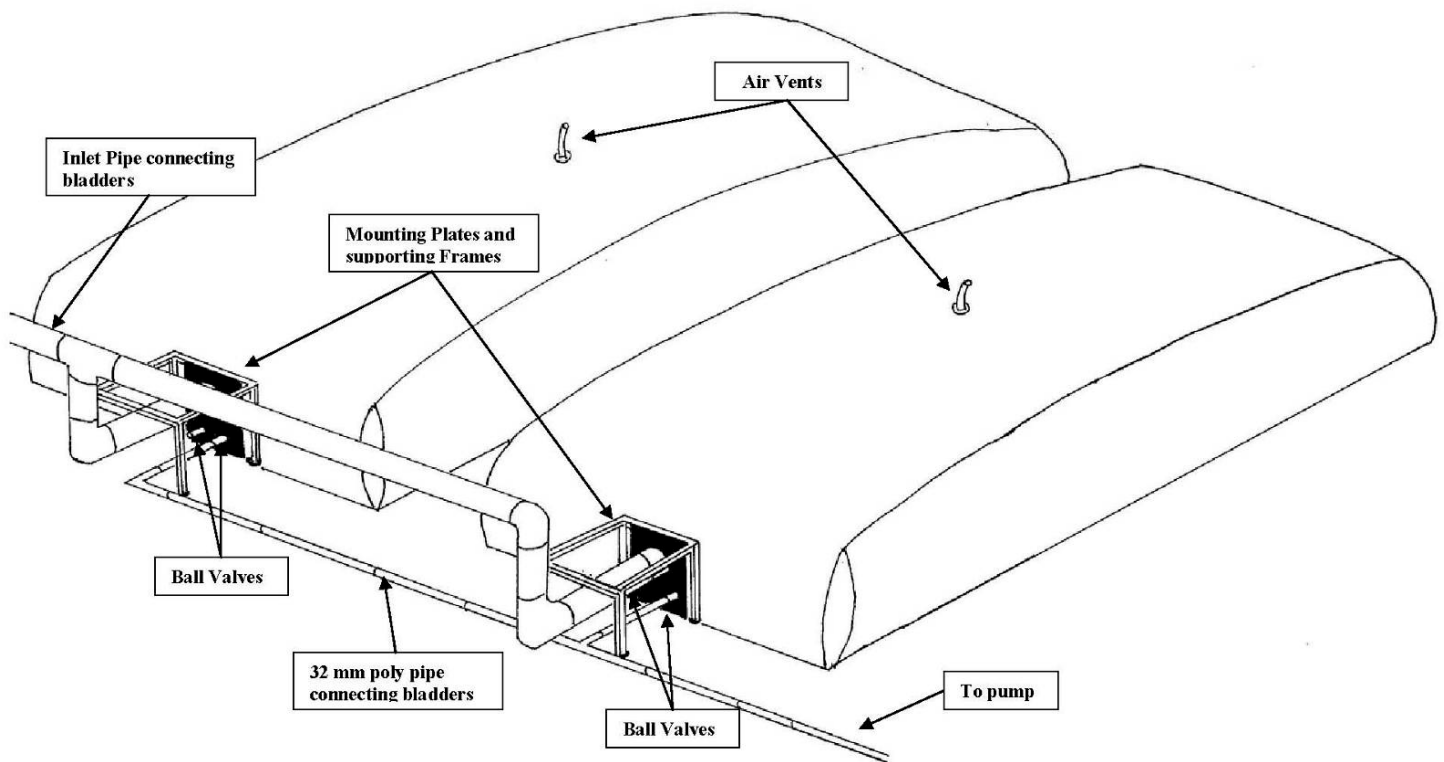
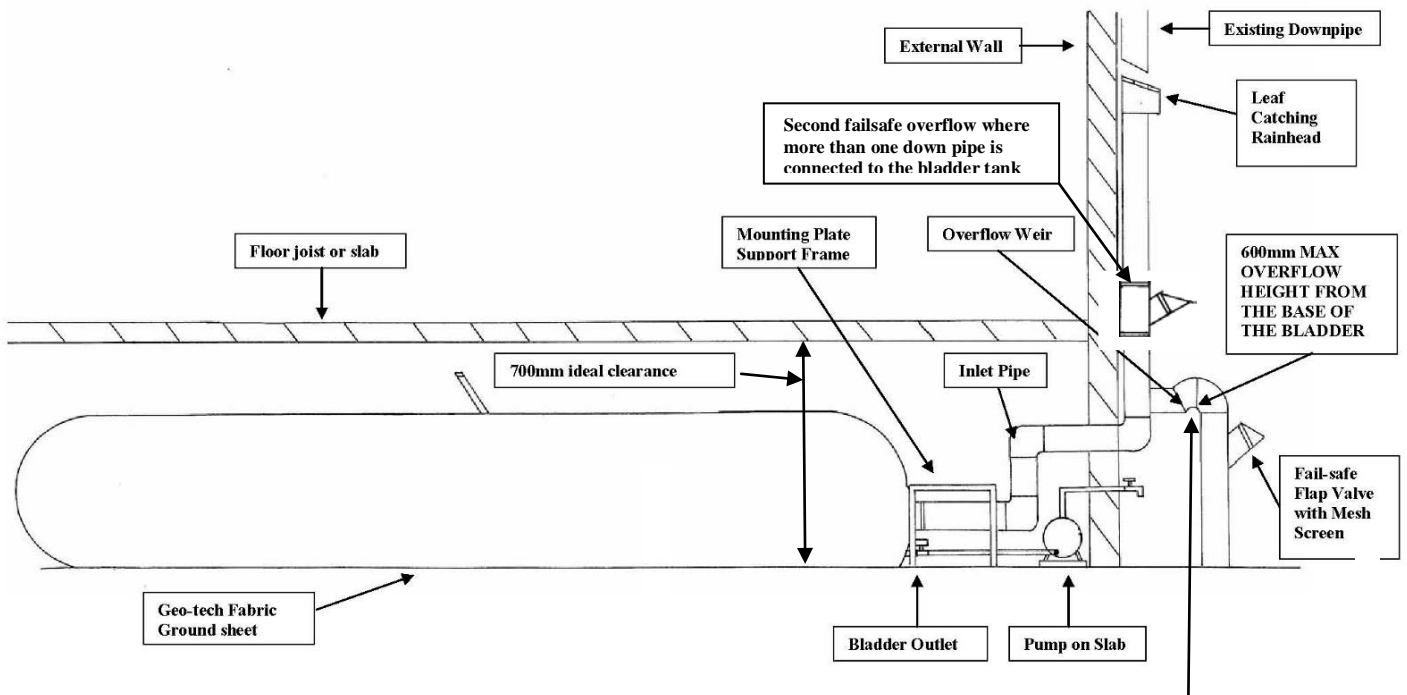


Diagram 5: reo sac® Side View



Note that the maximum overflow height is 500mm for 1.1m and 1.3mm width bladders

Accessories available from reo sac®

The following products are available from **reo sac®** as accessories to the standard **reo sac®** kit:

- Leaf catching rainheads with mosquito protection
- First flush diverters for downpipes
- A range of quality pumps and mains water controllers
- A float chamber for mains water controller sensors

If you have any questions relating to your **reo sac®** installation, please contact **reo sac®** for clarification by phoning +61 2 9113 5593 or email info@reosac.com.au



www.reosac.com.au