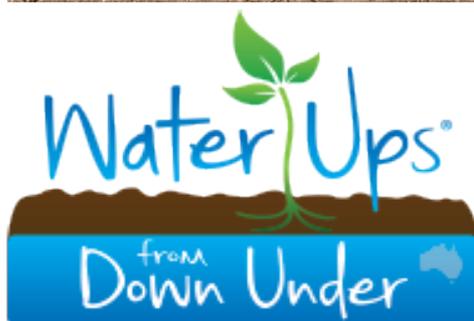




Constructing a WaterUps® timber wicking bed



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The WaterUps® Cell

When planning your new garden think about the benefits of using WaterUps® and incorporate wicking systems into your design

Timber sleepers make a great raised bed for your WaterUps® wicking system. They are extremely sturdy and long lasting. The main advantage of timber sleepers is that you can build a bed to almost any dimension. They are, however, very heavy and for this reason are best built on site.

Things you will need

Materials:

- Timber sleepers – we recommend Ironwood® 200 x 50mm 3.0m Sienna treated pine sleepers;
- **Note:** these are specified as safe for sensitive areas, such as vegetable gardens.
- Pond liner;
- Geotec fabric;
- Adhesive/sealer;
- Bag of Perlite;
- Bugel head screws (125mm) and a Bugel head driver bit;
- Sheet of corflute for under the base; and
- Galvanised clouts or staples.

Tools:

- Circular saw;
- Power drill and 5.5mm drill bit;
- 24mm speed ball;
- Spirit level; and a
- Hammer or staple gun.

Draw up a plan

Measure the space where you intend to construct your timber bed and consider the following points when drawing up your plan:

1. Your bed will need to be constructed on a completely level base – determine this with a spirit level.
2. For your bed design, the internal dimensions should ideally be in multiples of 400mm (the width of 1 WaterUps® cell). This avoids the need to cut the cells. If you do, however, want a dimension that is a multiple of 200mm, then this will work as you can cut a cell in half with a saw.
3. After working out the length and width, add an extra 10mm to each to allow for the pond liner. For example, if you had decided on a bed 2.4m x 1.2m then your internal dimensions would be 2410mm x 1210mm.
4. After you have decided on the optimal internal dimensions for your bed, remember that you need to make allowance for the thickness of the sleepers (50mm) and the supports (50mm). This will impact the external dimensions that you will need.
5. For the supports/caps you need to decide whether these are best located on the long or the short side of the bed.

6. Determine the amount of timber that you need – refer section below on cutting the sleepers.
7. Next, you will need to decide where to locate the overflow pipe – either on the long side or the short side.
8. Finally you need to consider where you want the inlet pipe. For ease of use, it is recommended that the inlet pipe be positioned near the overflow pipe so that you can easily see the overflow when filling the bed to know when it is full.
 - There is 1 marked circle on each cell for the inlet pipe.
 - Once you have decided where the pipe will go you will need to cut out the circle. Make sure that you only cut out the inner circle.
9. Before inserting the inlet pipe add adhesive to the bottom of the pipe and at the insertion point.
10. Insert the pipe and glue the pipe in position.

TIP: The inlet pipe should be glued into position ideally the day before installation to allow time for the glue to set and harden.

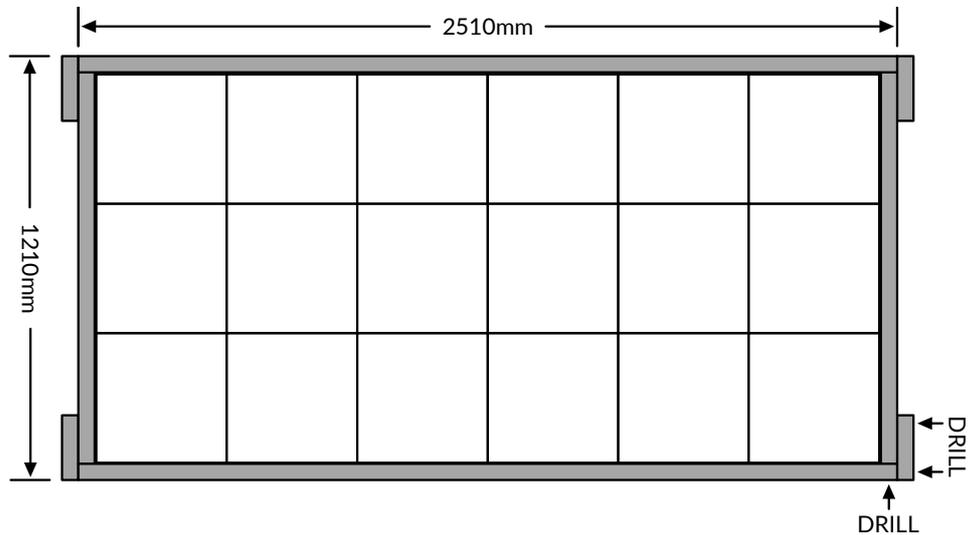
Cutting the sleepers

The most important thing to consider before cutting your sleepers is the dimensions of your bed and on which sides you have decided to locate the supports. This will determine the lengths that you will need to cut the long and short sides.

The diagram below shows the location of the supports/caps on the (long) sides of our 2400mm x 1200mm (internal dimensions) bed.

With the supports/caps on the long side this means that you will need to cut the sleepers into the following lengths:

1. 4 x 2510mm (long sides). **Note:** this is 100mm longer than the internal dimensions (plus 10mm allowance for pond liner).
2. 4 x 1210mm (short sides).
3. 4 x 400mm (supports/caps).



Drilling holes for the screws and the overflow pipe

1. On the 200mm side of each of the 4 x 2510mm sleepers, drill 2 x holes centred (ie. 25mm in from the top and the bottom) and 50mm in from the end. Drill these all the way through. Refer to the above illustration and the photo below.



2. On the 4 supports/caps, drill 4 holes (all the way through). The holes should be located 100mm in from the ends and 25mm in from the sides. Refer photo below.



3. If you have decided to locate the overflow pipe on the 1200mm (short) side, then the location of your overflow pipe should be 420mm in from the end of one of your 1210mm lengths and 120mm up from the bottom. Drill as follows:

- Use the 5.5mm drill bit to drill a small hole; and
- Then use the 24mm speed bore or hole saw to drill the hole for the overflow pipe.

TIP: When the tip of the drill starts to penetrate the bottom, turn the sleeper over and finish drilling from the other side. This will help prevent the timber from splitting. Refer photo below.



Hint: Mark the bottom so that you will know which way the sleeper should sit when you go to install it.

Preparing the base for the bed

1. Ensure that the base of the bed is level.
2. It is often beneficial to lay down some Corflute sheet to provide a perfectly even base. This will also protect the underside of the timber sleepers and the pond liner.

Assembling the bed

It is now time to start putting your timber raised bed together.

1. Lay the 2 x 2510mm (long) lengths in position. Then, take 2 x 1210mm end pieces and place them in position. Use your spirit level to double check that the bed is located on a level surface. Insert the Bugel Heads into the pre-drilled holes on the long sections and screw the base together.
2. This is probably a good time to check the position of the overflow pipe.
 - Each cell has 8 semi-circles (2 at each corner) cut out underneath the flat top of each cell to locate the overflow pipe. Choose which cell and placement position you want to use.
 - Place the overflow pipe into position on the underside of the cell. Use a cable ties to hold it in place.
3. Do the same with the other 2510mm and 1210mm sleepers and then place on top.
4. Take the 4 x support/cap pieces and screw where you have pre-drilled.

You have now completed the timber frame and your bed should look similar to the photo below.



Adding the Pond Liner

1. Before adding the pond liner, lay it out flat and cut to make sure that your liner measures as follows:
 - Long side: 3200mm
 - Short side: 2000mm
2. Next measure and mark where to cut out the circle for the over flow pipe. This should be on the short side as follows:
 - 820mm in from the side and up 520mm from the bottom;

- trace the outline of the overflow pipe around the marked position;
 - Before cutting the hole place the pond liner into the bed to ensure that you have marked the position of the hole correctly;
 - Cut out the circle.
3. Add the pond liner so that it covers the entire base and all internal walls. You should have sufficient liner to reach the top of the bed.



4. On the corners take care to fold the pond liner diagonally to ensure that hot sits neatly to the edge of the base and up the wall. You can tack or staple the folded edges in place to make it easier to position the rest of the liner and the cells.

Hint: Do not pull the liner too tight as it needs to cover the entire base right into the corners.

5. Next add the cell with the overflow pipe and place it in position.
6. Add the cell with the inlet pipe.
7. Then add the rest of the cells.
8. Check the the pond liner is in the correct position and reach near the top of the bed on all sides.



9. You can now tack or staple the top of the pond liner in position.



Adding your soil mix

TIP: Before adding any potting mix spray water over the WaterUps® cells. This will help combine any dry particles of soil and prevent them from contaminating the water reservoir below.

In order to achieve the most efficient wicking outcome, we suggest:

1. That your soil/potting mix should contain a good amount of composted material and organic matter, together with some coarse sand.



2. Mix your soil/potting mix with Perlite (50/50) and then add this to the wicks, which are the 4 feet at the base of each cell, and push down.
3. Adding Perlite to the "wicks" will improve airflow through to the soil.

4. Give the top of the bed a light spray of water. This will help compact the potting mix in the feet.
5. Then, add potting mix evenly across the top of the wicking cell platform to a depth of around 10cm. Once this base level has been established give the mix another light spray to assist the compaction. Continue filling the bed with potting mix in layers, giving each layer a light spray of water.

TIP: For the right choice of soil/potting mix we suggest that you speak to a local nursery or landscape supply company to discuss your plans and to get their input on your requirements.

Further information about how to calculate the amount of potting mix required etc are included in the FAQs on our website. www.waterups.com.au

Watering your wicking bed

1. Give the bed a final soak and then insert the hose into the filler pipe and fill with water until you observe the overflow pipe discharging water, which indicates the reservoir is full. Then place the cap on the inlet pipe (lightly) to prevent insects or other debris entering the reservoir.
2. Ideally, allow 24 hours for the soil to 'wick' water up into the bed and then fill the reservoir again via the inlet pipe. The wicking bed is now ready to use. If planting small seedlings, the bed will need surface watering until their roots develop to reach the wicking beds moist soil.

A wicking bed of 2400mm x 1200mm (comprising 18 WaterUps® cells) will house almost 350 litres of water.

