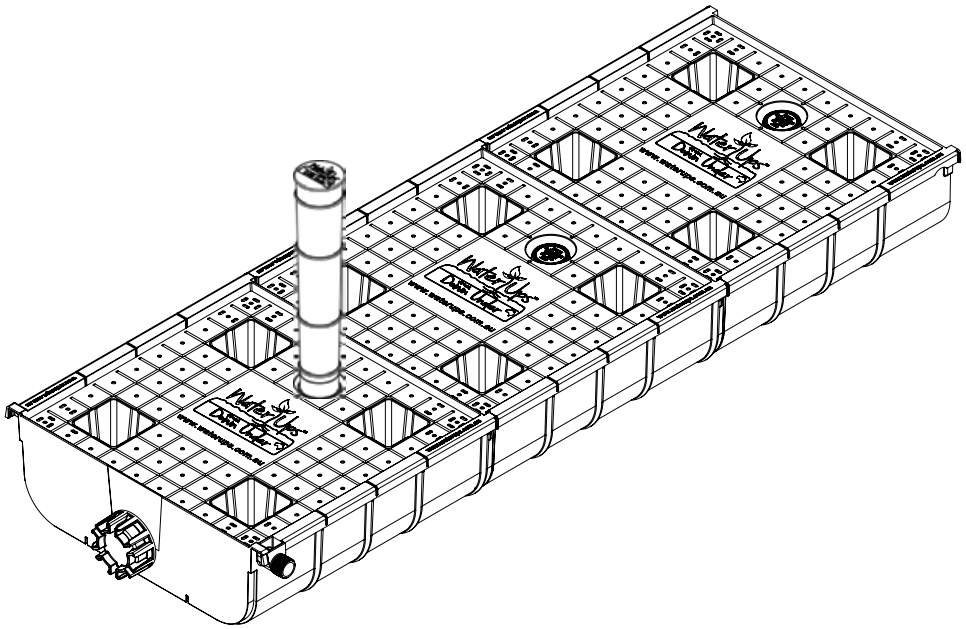
WaterUps®

Wicking our World



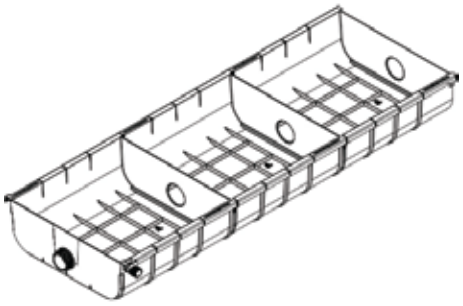
BERA WaterUps®

Assembly Guide

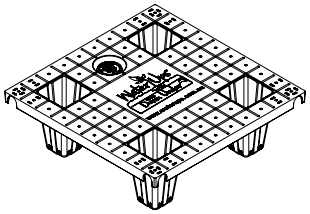
Sub-Irrigation Channel

www.bera-bv.com

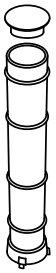
Contents - Basic Kit



1 x WaterUps® Channel



3 x WaterUps® Wicking Cell



1 x Inlet Pipe and cap

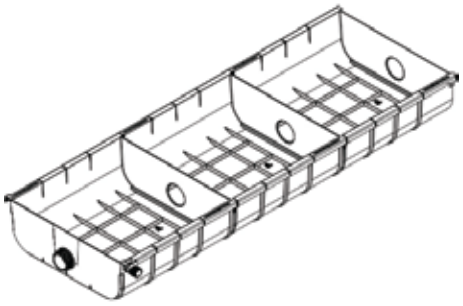
1 x Channel End Cap

1 x Spigot

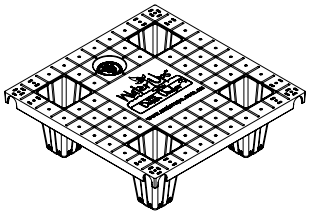
1 x Channel Nut

1 x Overflow Connector Extension Fitting

Contents - Extension Kit



1 x WaterUps® Channel



3 x WaterUps® Wicking Cell

1 x Channel Nut

You will need

Approximately 2 square metres of level ground to build each SIC on

A spirit or laser level

A sharp knife

Drill

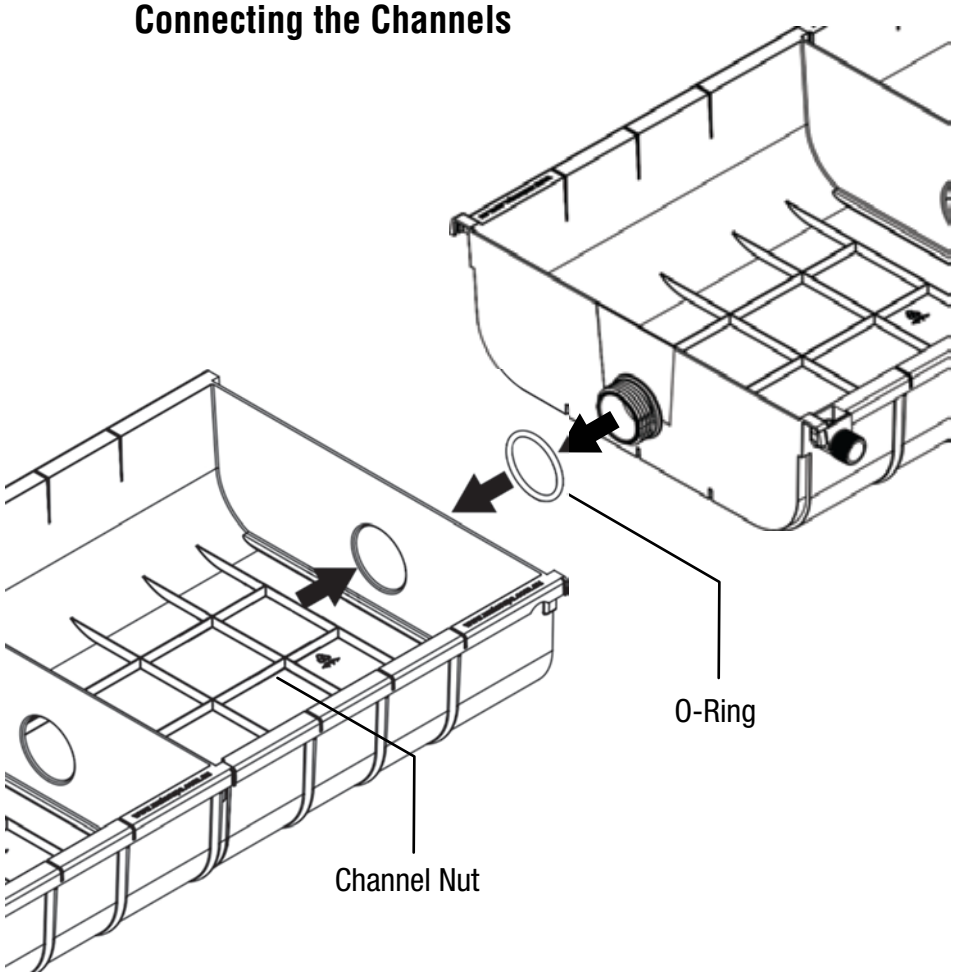
16 mm speedbor drill bit

6 litres of perlite for each SIC

IMPORTANT NOTE:

You will need to purchase the Basic Kit plus the number of Extension Kits that you will need, base on the length of the channel required for your job.

Connecting the Channels



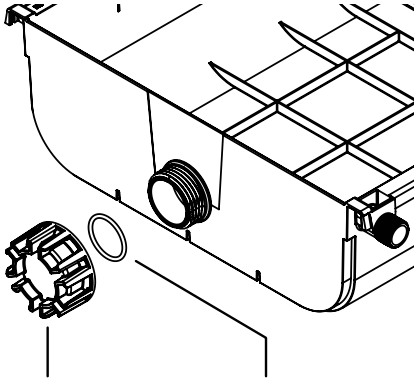
1. Assembly preparation.

Make sure that the position you are installing the Sub-Irrigation Channel ("SIC") in its completely level using a spirit or laser level.

Make sure that the base on which you are going to install the SIC on is compacted.

2. Assembling the Basic Kit.

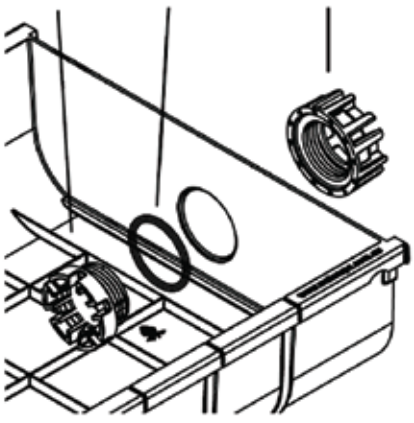
Start with the Basic Kit. Take the End Cap and check that the small o-ring is in position on the inside of the cap. Then screw the End Cap to the threaded 'male' end of the Channel and tighten.



Channel End Cap O-ring

If the SIC that you are installing is only 1.2m long, then locate the Spigot and Nut. The Spigot should be placed on the inside of the channel connection hole and pushed through so that the threaded section of the Spigot is on the outside. Then add the large O-ring and screw on the Nut and tighten.

Spigot O-ring Channel Nut



3. Connecting the Channels.

The Channels can be connected by placing the threaded piece at the end of one Channel into the matching hole at the opposing end.

Screw together with the Nut and O-ring that come with the Extension Kit.

Refer to the large image at the bottom of page 2.

4. Connecting the SIC.

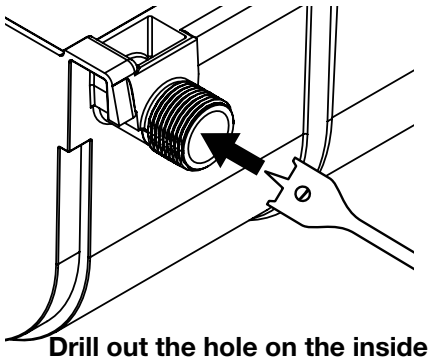
The Channels can be cut using a hand saw or circular saw between the lines marked on the underside of the Channel.

5. Overflow Hole.

It is important that close attention is given to the placement of the overflow on your sub-irrigation wicking system. The channel overflow is defined by the threaded piece adjacent to the top corner of the channel.

IMPORTANT NOTE:

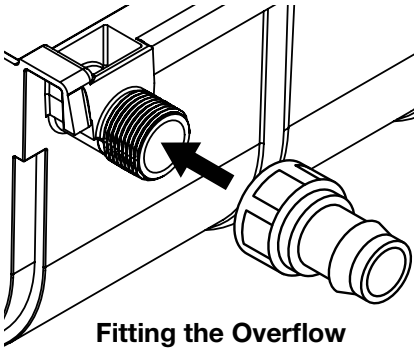
You will need to drill out the hole on the inside of the threaded overflow connection piece using a 16mm speedbor drill bit.



Drill out the hole on the inside of the overflow connection

How you connect the overflow will depend on the nature of your installation.

If you are installing the SIC in a planter or adjacent to a retaining wall, then screw on overflow pipe extension connector piece. Then attach a sufficient length of standard 19mm poly irrigation pipe so that the end of the pipe extends through the wall and is visible.



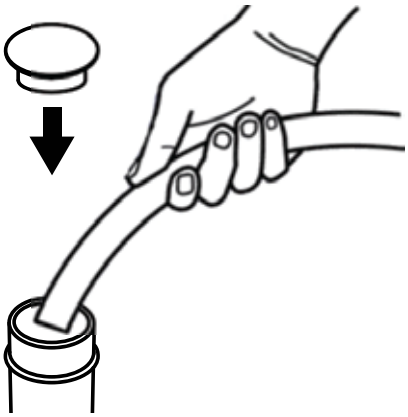
Fitting the Overflow Connector Extension Fitting

If you are installing in-ground or in a planter with a bottom drainage hole then you will need to run the overflow into an ag line or sump covered with aggregate. With this alternative you will not have visibility of when the channel system is full and overflowing.

6. Filling the SIC.

There are 2 methods for filling the SIC:

- The normal method would be to use the WaterUps® Inlet Pipe that comes with the Basic Kit (see below); and

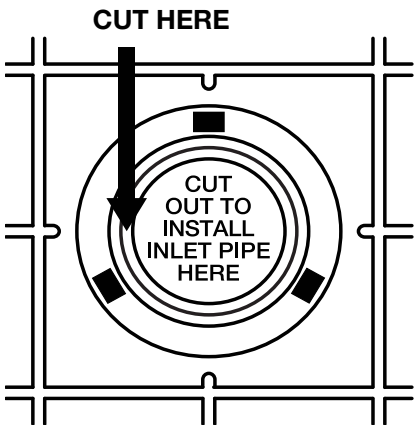


- If you have a channel system that will have more than one potential overflow holes. One of these could be used as the inlet for filling the SIC. This would require attaching poly irrigation pipe as was done for the overflow extension and connecting this to the water supply/tap.

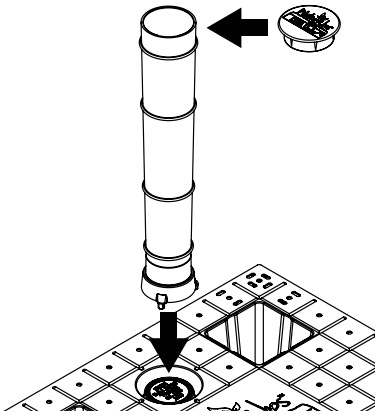
7. Inserting the water inlet pipe.

To fit the WaterUps® Inlet Pipe you must first cut a hole in the top of one of the WaterUps® Cells.

Using a sharp knife cut along the circular groove around the type on the top of the WaterUps® Cell as shown in the image at the top of page 4.

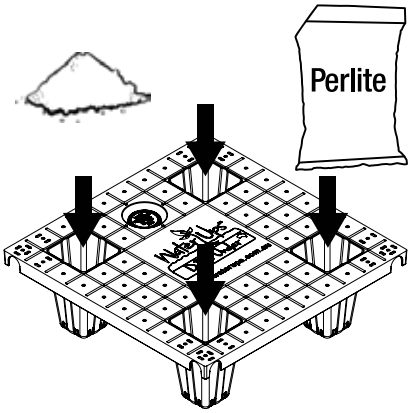


The three tabs on the bottom of the water inlet pipe must lock into the three holes in the top of the WaterUps® Cell. Apply some pressure to the inlet pipe as you insert it, until it clicks into place in the WaterUps® Cell.



8. Adding perlite to the feet of the WaterUp® Cell.

Adding Perlite to the 'wicks' will improve airflow through to the soil. Both fine and medium grain perlite work effectively for this purpose..



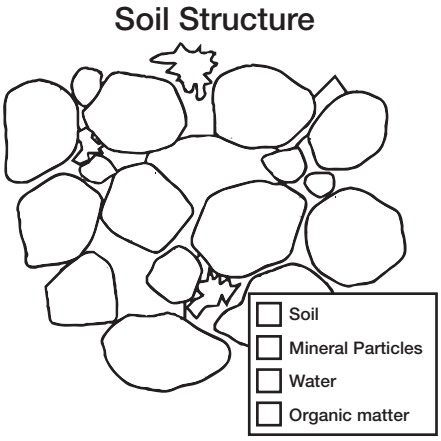
The wicks, which are the 4 feet at the base of each cell, should be filled with perlite. This will require approximately 2 litres of perlite per WaterUps® Cell.

To work out how much Perlite you will need, we suggest that you use the calculator tool on our website which you can go to using the link or the QR code at the bottom of page 1.

9. Potting mix and soil.

Soil structure

The soil structure is the arrangement of the solid parts of the soil and the pore spaces located betwee them. It is the shape that the soil takes based on its physical, chemical and biological properties. While soil structure is not the same as soil texture, there are similarities. Both affect the soil's drainage and aeration capabilities.



Potting mix

Choosing a potting mix with the best structure for wicking beds is very important.The action of wicking water requires the structure of the potting mix to be open, and friable to allow for free flow upwards from the water/air source below.

Wicking action provides the ideal moisture level, which is conducive to microbial activity in the soil for thealthy plant growth. An open structured potting mix also allows for maximum root development in the root zone.

Humus

Eventually the nutrients in the organic matter are exhausted and the remaining molecules can't be used. This matter is called humus, which consists largely of carbon.

The structure of humus is such that it acts as a buffer against soils that may be too acidic or alkaline. Humus is highly nutritious and rich in minerals and microbes vital for healthy plant growth. Humus also is able to hold 80-90 per cent of its own weight in moisture. This moisture retention capability of humus can actually be used to improve the wickability of the soil.

This can be particularly useful when you are companion planting in a wicking bed. For example, you may plant a lemon tree in a large tub with the base of the root ball 300mm above the base of the reservoir. If the root ball measures 200mm vertically, then the surface of the soil would be 500mm above the base. Normally, we would not expect our Marigold companion plants with a root depth of only say 50mm to be able to grow as well without surface watering. However while over time the roots will definitely grow deeper in search of the water below, you can add some additional humus in the top 100m of soil to effectively lengthen the wicking depth in your bed.

What to get?

The best mix for your plants will depend on their preferred PH level. Organic matter can lower the PH of your soil over time, so check the PH periodically.

Use a premium quality organic potting mix. If you are getting a bulk delivery check the quality before the truck's load is emptied. It should be friable and contain plenty of organic matter.

Add a mix of both animal and plant based composts and some humus, which is available in granular and powdered form. Some bulk landscape suppliers may also provide a humus mix. Replenish each growing season.

Add worm or compost teas regularly. This can be watered into the soil and sprayed on the leaves in diluted form.

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