

Wavin
Product Installation Guide

AquaCell

Stackable System



AquaCell Installation Guide

General characteristics

AquaCell is a below ground (rain) water storage system which can be used in two different applications namely as an:

1. Infiltration system:

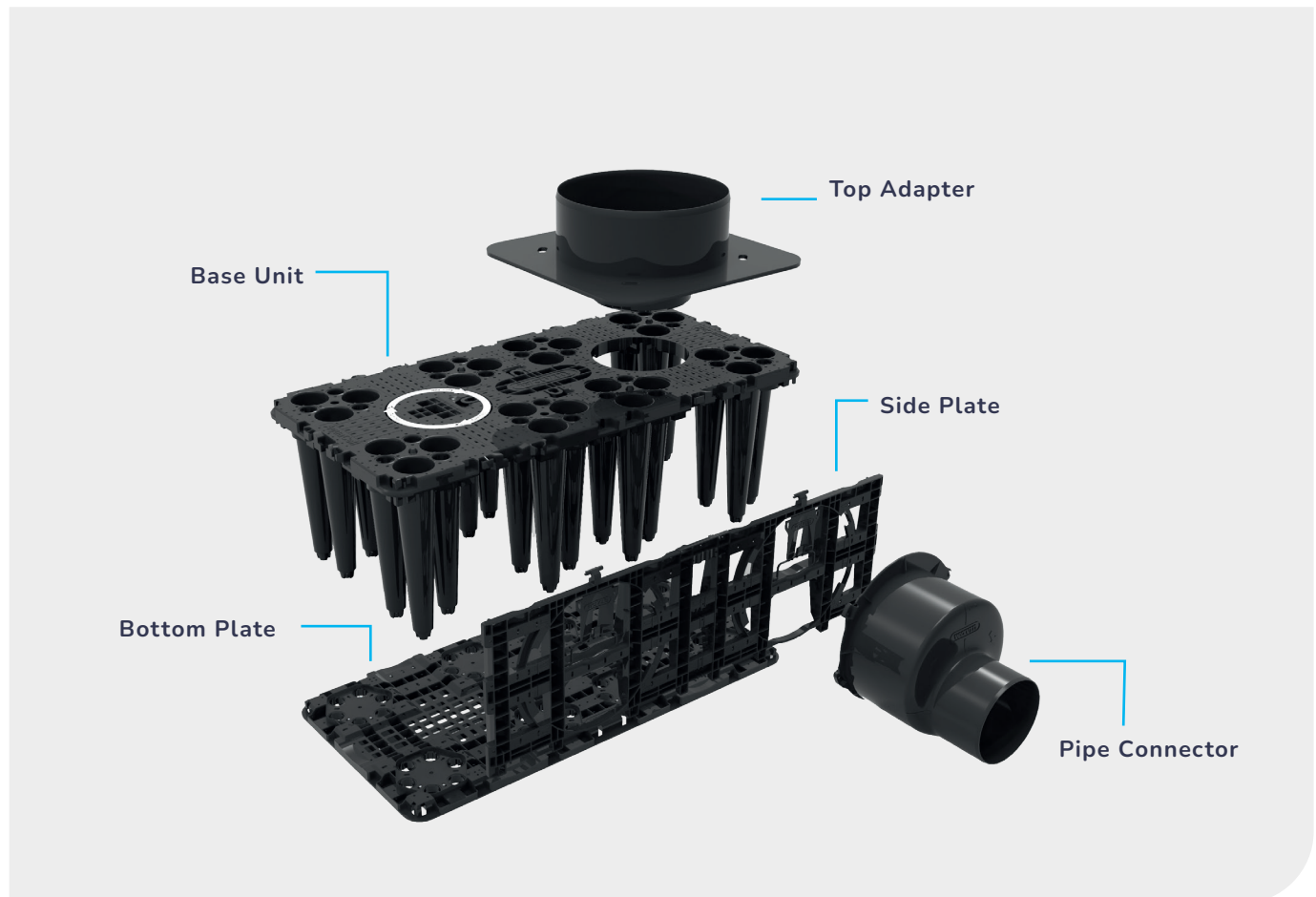
Objective: temporary storage to allow the gradual infiltration of water into the soil.

Solution: Wavin AquaCell wrapped in a geotextile.

2. Detention System

Objective: temporary water storage and management to return the water to the existing network.

Solution: Wavin AquaCell covered in a geomembrane seal, which is protected by a geotextile around it.



Technical Specifications

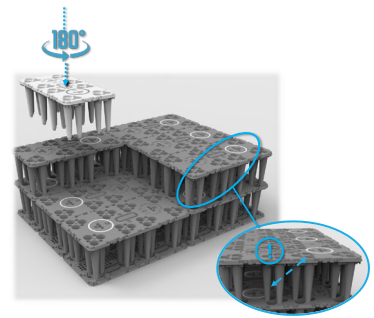
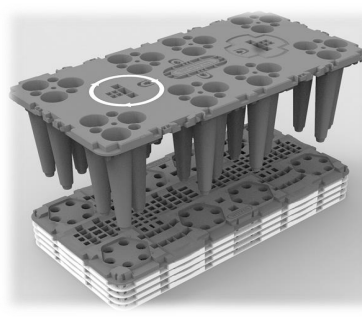
General	Raw material	100% recycled polypropylene	
	Color	Black	
	Vertical inspection access	10in	
Base Unit	Dimensions (Length x Width x Height)	48x24x17 (LxWxH)	
	Without Baseplate Attached	76 gal / 10.25 cf	
	With Baseplate Attached	73 gal / 9.74 cf	
	Void Rate (Varies by layer/side plates added)	94% - 96%	
	Weight	24lbs	
	Pipe Connections	6in, 8in, 10in, 12in	
Bottom Plate	Dimensions (Length x Width x Height)	48x24x1.5 in (LxWxH)	
	Weight	8 lb	
Side Plate	Dimensions (Length x Width x Height)	45.5x15x2 in (LxWxH)	
	Weight	5 lb	
Top Adaptor (Inspection and Maintenance)	Dimensions	10/12in.	
	Weight	3lbs	
	Dimensions	10/16 in.	
	Weight	11lbs	
Connection Adaptor 8in - 12in	Dimensions (Length x Width x Height)	14x14x12in	
	Weight	3lbs	
Minimum (d) / Maximum (H) cover depth * See diagram	Type of load	Regular Version	Extra Strong Version
	H-10 Traffic Loading [in/ft]	d=12in. / H= 14.4ft	d=12in. / H=26.2 ft
	HS-20 Traffic Loading [in/ft]	d=24 in. / H=14.4ft	d=18 in. / H=26.2ft
	HS-25 Traffic Loading [in/ft]	d=32in. / H=14.1 ft	d=22in. / H=26.1 ft.

Product Orientation Guidelines

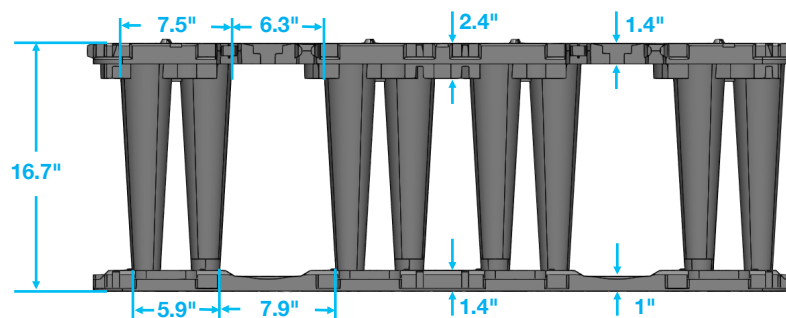
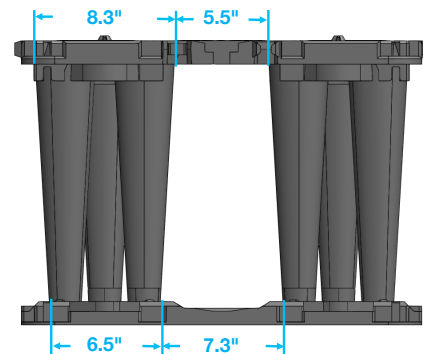
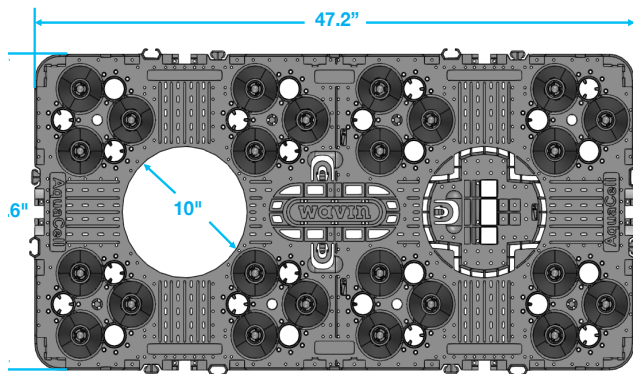
The base unit has a white ring on top, which is used for the visual orientation of the product.

It is important to know that when the white ring of a unit is positioned above the white ring of the unit below, the units will fall into each other as they are stacked on the pallet.

With a multilayer system, it is important that all the white rings are horizontally in line with each row of units. When installing the layer on top of another layer, the white ring of the next ring should NOT be oriented directly above the white ring of the base unit underneath, but in the opposite direction.



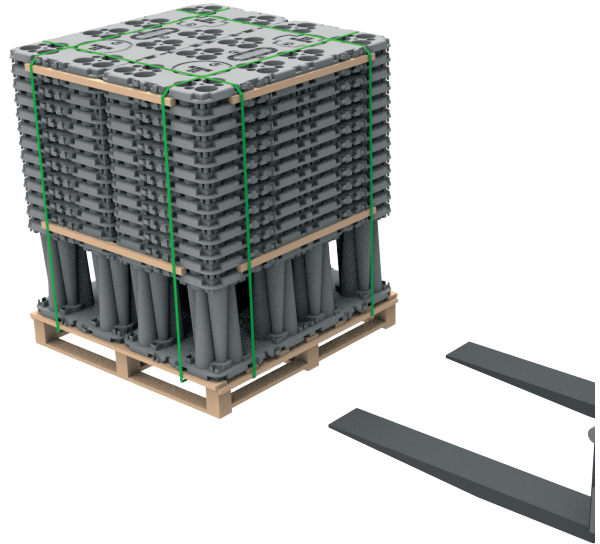
Dimensions



Unloading and Unpacking

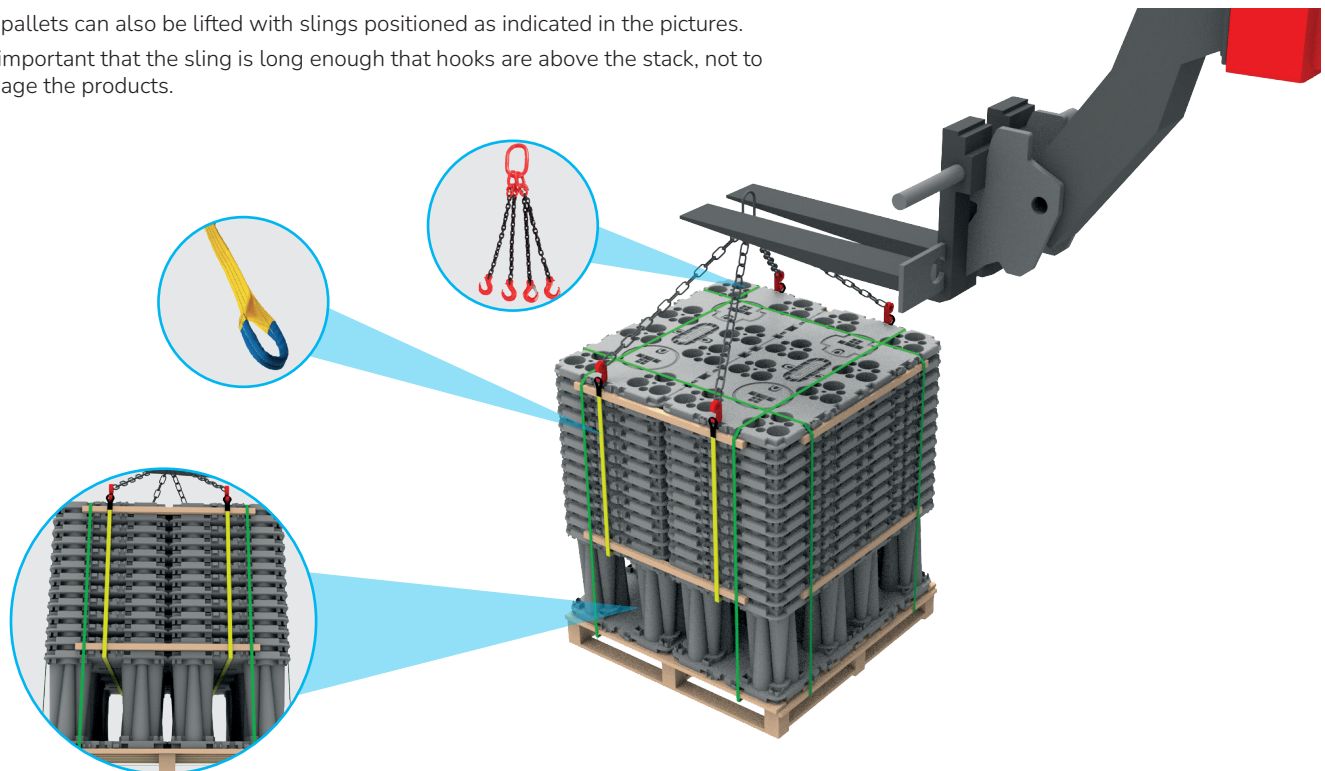
Handling by excavator or forklift:

AquaCell units are stacked 28 pieces per pallet. The pallets can be lifted with forks on an excavator or forklift by positioning these forks in the openings of the pallets (see pictures):

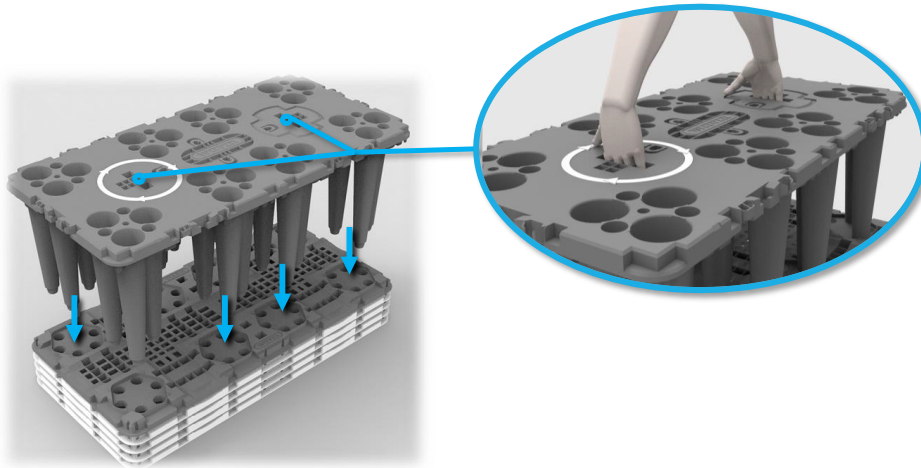


Handling by excavator or forklift:

The pallets can also be lifted with slings positioned as indicated in the pictures. It is important that the sling is long enough that hooks are above the stack, not to damage the products.



AquaCell Base unit has a low weight (11.4kg / 25.1lb) and is equipped with integrated handgrips for ergonomics.



For dismounting of the bottom layer of the stack, pull firmly on one short side of the unit while keeping a foot on the bottom layer.



2. Installation instructions

For the total installation of AquaCell the following steps have to be performed:

Step 1:

Prepare the bottom of the trench with suitable bedding material with a minimal depth of 4in / 10cm (max. 12in / 30 cm).

Remove protruding (sharp) objects (e.g. stones) which can damage the geotextile).

Step 2:

Level the bottom of the trench.

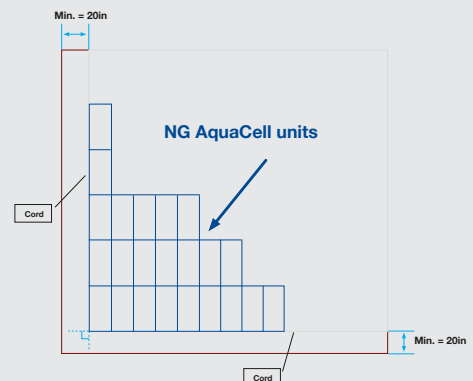
Step 3:

Install the geotextile / geomembrane on the bottom of the trench. Be sure that at least an overlap of 20in / 500mm is available at each side of the system.

Step 4:

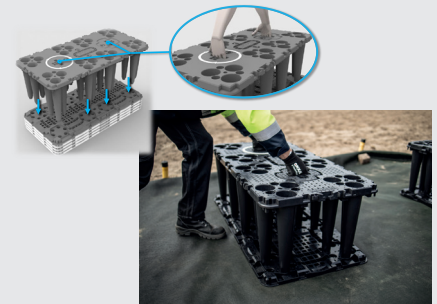
Install and outline (perpendicular) a string guide to ensure a straight system.

Note: Do not punch the geotextile/membrane with pickets. Place these pickets outside this area.



Step 5:

Bottom layer: Mount the bottom plate to AquaCell unit (make sure an audible “click” is heard to ensure a proper connection) and place this unit in the outlined corner on the bottom of the trench.

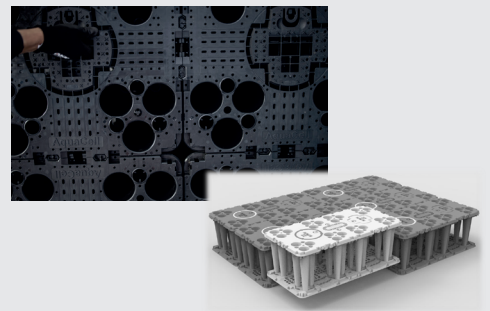


Step 6a:

Bottom layer: Place the next (outer) units (including pre-mounted bottom plates) next to the installed units by sliding the integrated connectors into each other.

Note: Check the orientation of (white circles in line!).

Repeat this until the full bottom layer is installed.



Step 6b:

Vertical inspection: When vertical access through the unit is required, the round plate / “Circle” or “Cross” on top of the unit must be cut. The cutting lines are marked by a “hand saw” logo. A saw with a blade length of at least 3in / 8cm is required.

Note: Make sure that the round “circle” plate or “cross” of each unit of each layer below the vertical access is cut.



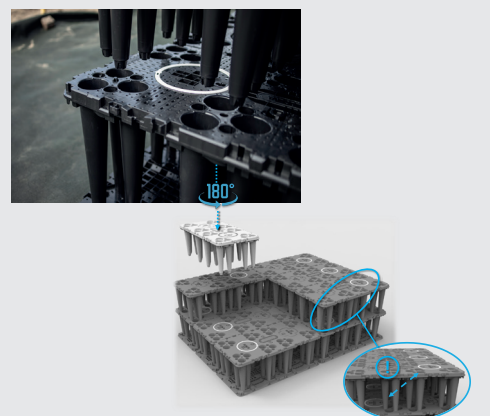
Step 7:

Next layer(s): Mount the (without bottom plate) directly on the top deck of bottom layer unit(s). Each of the pillars will fall into position and click in the top deck openings of the unit below.

Note 1: Keep in mind the orientation of the white circle (white circle above white circle is NOT possible!).

Note 2: The integrated connectors will slide into each other (vertically).

Repeat this for all the layers until all units are installed.



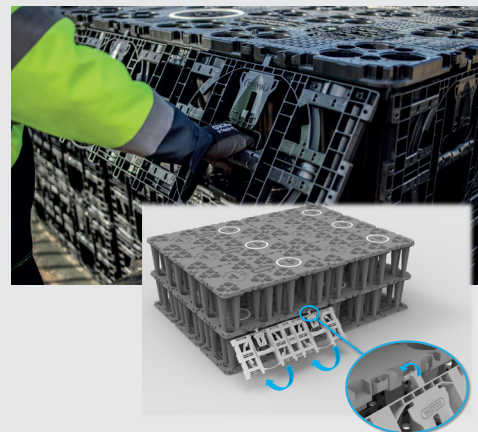
Step 8:

Side plate: The following step is to install the side plates by putting the hinge pins of the side plate into the hinge pockets of the units at an angle. Next, the plates can be hinged against the pillars of the AquaCell unit. The plate will snap to each of the unit.

Repeat this step until all side plates are installed and the system is fully closed except at the location where the inlet and outlet must be placed.

Note 1: In case of the need of a half sideplate, the sideplate must be cut.

Note 2: After cutting there is a left and right version. Be sure that the rounded edge of the half plate is positioned towards the corner of the system (not the cut edge!) or depending on the length of the side, put the half plate in between 2 uncut plates.



Step 9a:

Connection $\leq$ 6in / 160mm : Each side plate consists out of 2 standard 6in / 160mm Inlets with integrated pipe stopper.

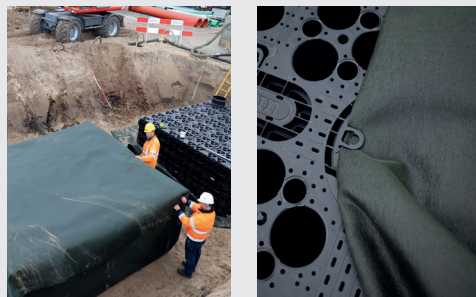
The 2 sprues of the pipe stopper can be cut/broken to activate this pipe stopper.



Step 10:

Wrap the complete system in geotextile or geomembrane. The unit has a clip to help hold the geotextile during wrapping.

Note: The overlap of the geotextile/membrane should be at least 20in / 500mm.



Step 11:

Back fill the trench around the system in lifts of max. 12in / 30cm with the appropriate soil type and compact this evenly until the level of the top inlet.

The appropriate degree of soil compacting should correspond with the existing soil and water conditions and future external load.

It is advised to compact soil at the minimum level of:

- 90 % Proctor (SP) for non-trafficked areas,
- 95 % Proctor (SP) for roads with limited traffic load,
- 98 % Proctor (SP) for roads with heavy traffic load.

In the case of high level of ground water, it is advised to increase the degree of soil compacting to the minimum level of 95% Proctor (SP) for non-traffic area, and 98 % Proctor (SP) for traffic areas.



Step 12:

Install the (top) inlet and secure/fixate the geotextile (infiltration) or seal the geomembrane (detention) to the pipe (overlap size: 39in X 39in / 1m x 1m) and backfill and compact underneath the pipe.



Step 13:

Cut the geotextile or geomembrane on top in case of an integral vertical inspection and install the top adapter by placing the 10in / 250mm spigot at the bottom of the top adapter into the cut opening of the base unit. Next the top adapter seal and top adapter can be installed by securing / fixating the geotextile (infiltration) or sealing the geomembrane (detention) to the adapter or top adapter.

**Step 14:**

Back fill the trench around the system in lifts of max. 12in / 30cm with the appropriate soil type and compact this evenly until the top is level with the system (tank).

Note: For the appropriate degree of soil compacting, see step 11.

**Step 15:**

Back fill the trench evenly on top of the system with a layer of 20cm/ 8in without compacting.

Step 16:

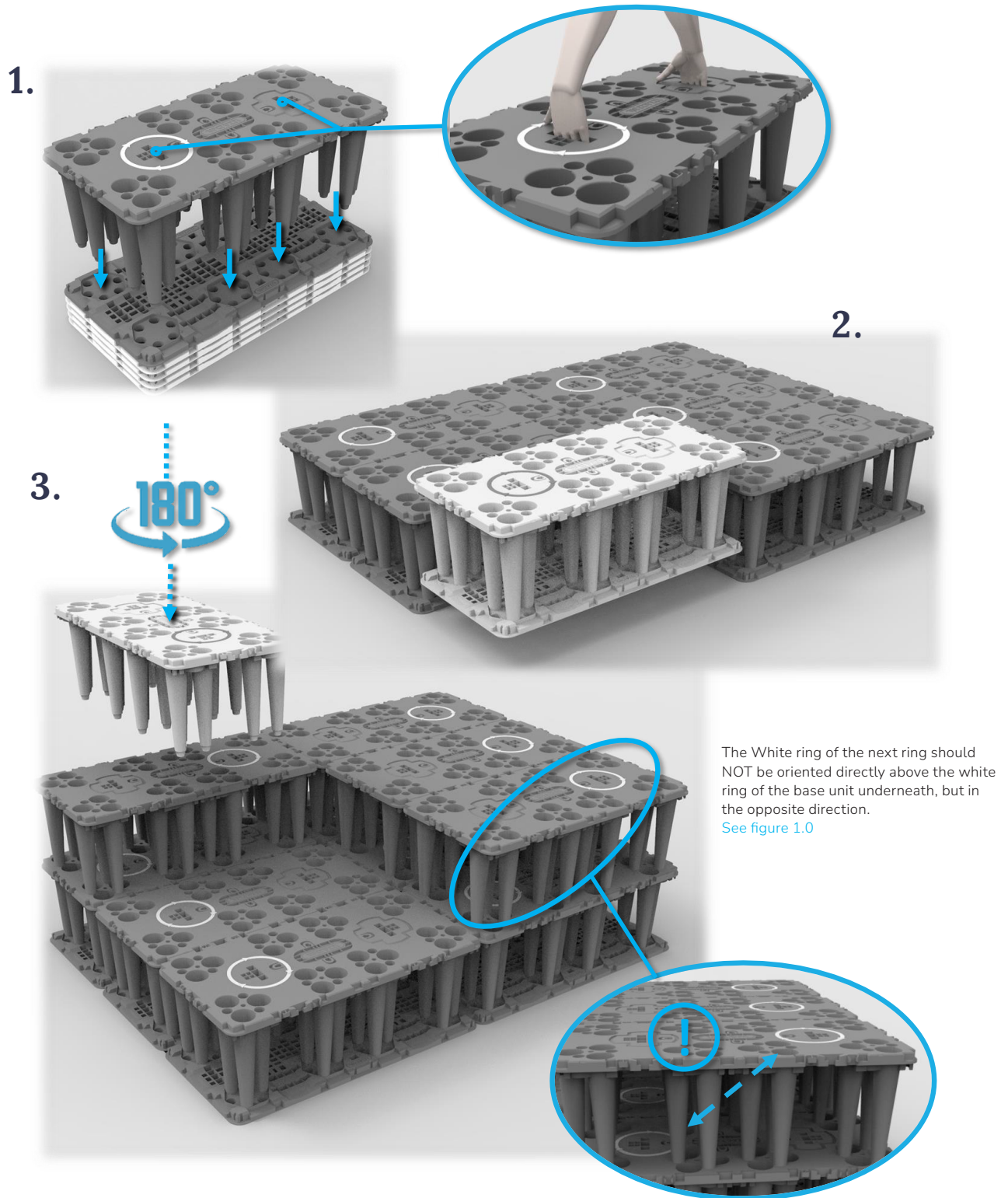
Back fill the trench in layers of max. 12in / 30cm with the appropriate soil type and compact this evenly until it is level with the surface.

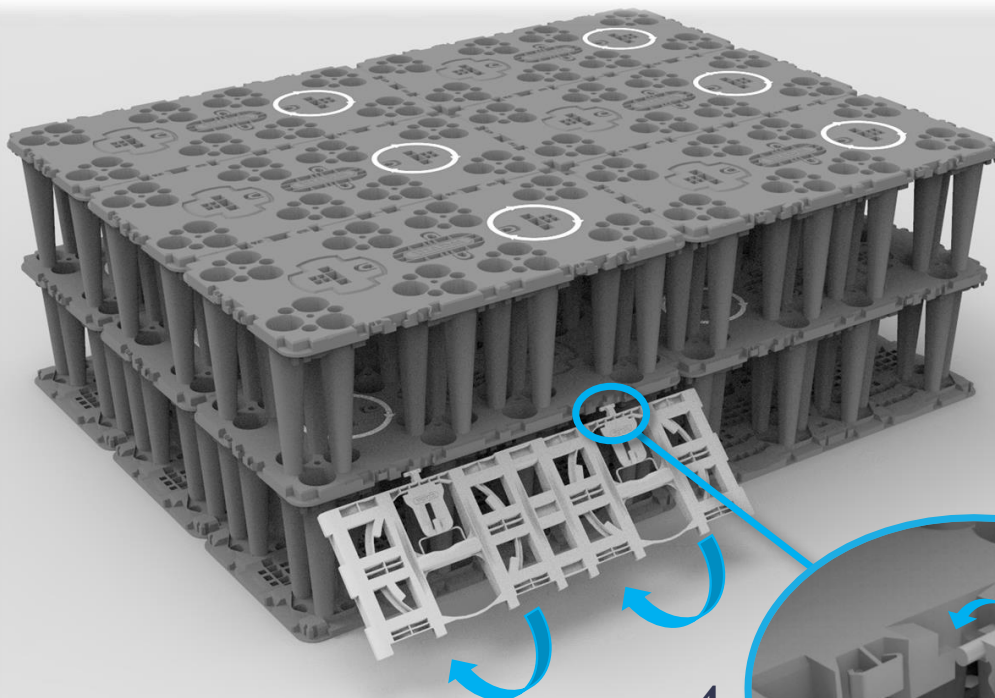
Note: For the appropriate degree of soil compacting, see step 11.

Step 17:

Shorten the top adapter (if necessary) and install the cover part(s).

3. Universal Installation Instructions

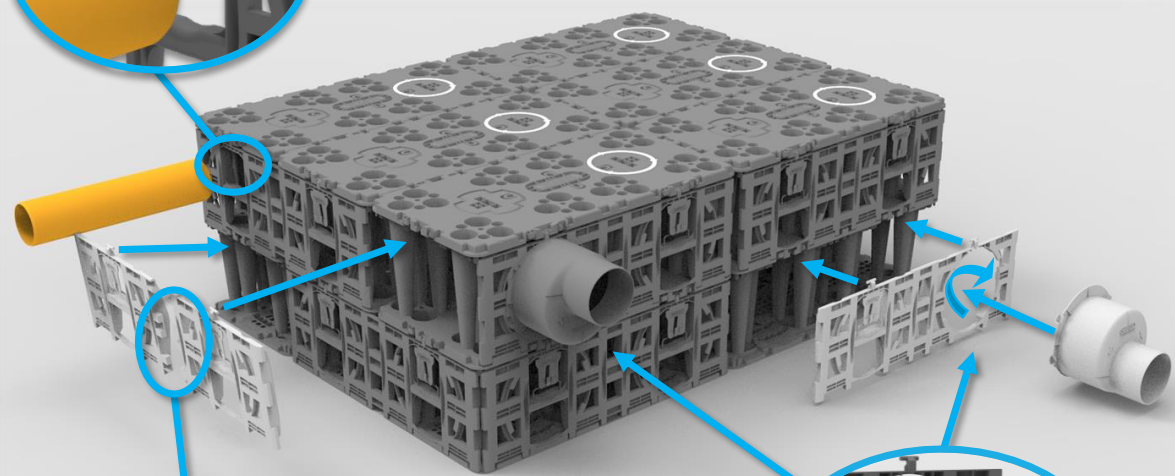
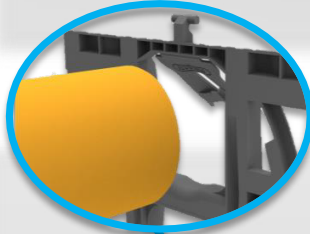




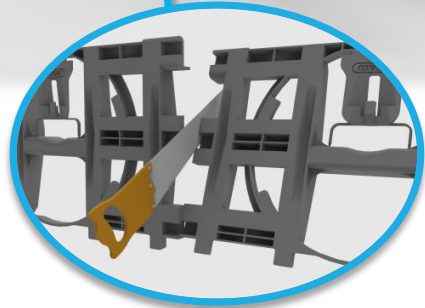
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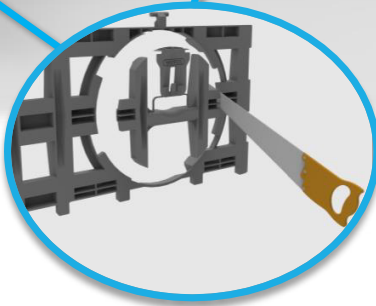
7.



5.



6.



Notes

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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