

## **AquaCrate Installation Instructions**

### **Pre installation notes:**

For attenuation systems: position the inflow and outflow connections level with the base of the Aquavoid structure

For infiltration systems: position the inflow connection at the top of the AquaCrate structure. Installation Instructions:

1/. Excavate to the required length, width and depth and level the base. Make sure that the area is enough to allow plant access around sides to compact the backfill material (300mm minimum). Ensure the base is smooth and level with no sharp protrusions. Check that the slopes are cut back to a safe angle or adequately supported and that a safe access is possible to allow site personnel to enter the excavation.

2/. Inspect the base for soft spots and if any are present, excavate and replace with compacted granular fill material.

3/. Lay 75mm sharp sand bedding layer to the base of the excavation and level off. Lay the geotextile protection fleece (White non-woven geotextile ), ensuring a minimum 150mm overlap. This is required for both attenuation and infiltration structures.

4/. Lay the geomembrane (if attenuation) over the geotextile and sand bedding layer and up the sides of the excavation. Examine the geomembrane for damage and test all welds if apparent.

5/. Assemble the AquaCrate units (1m x 1m x 0.333m High) and install within the void in accordance with the installation schedule for correct positioning. Arrange the units so that the pre-formed sockets are in correct alignment with the inlet and outlet pipes. Special clips are provided to join the units to prevent displacement (single clips for adjacent units (3 per unit) and double clips for all multi layer applications (1per unit)).

6/. Complete the geotextile and/or geomembrane encapsulation to the sides and top of the installation, ensuring that the protection fleece (if attenuation) has sufficient to overlap by 150mm minimum. The geomembrane should be welded with double seams and inspected for damage, testing the welds as required.

7/. Connect the drainage connections to the installation using proprietary adaptors. Ensure that the preformed socket positions for pipe connections are located correctly to receive the pipe-work.

Alternatively for infiltration systems use flange adaptors and attach them to the AquaCrate units with self tapping screws. For attenuated systems, it is recommended that all connections and air vent installations are achieved using sealed drainage connections into a preformed socket using proprietary seals "top hats" available to order.

8/. Backfill around the installation with Type I or 2 sub base, compacting in 150mm layers, in accordance with the Specification for Highway Works.

9/. Place a 75mm sharp sand protection layer if required over the top of units and continue to backfill as follows: For trafficked areas (car parks etc):

Type 1 or 2 sub base material compacted in 150mm layers in accordance with the Specification for Highway Works. Compaction equipment on top of the system not to exceed 2,300kg per metre width.

For landscaped and non-trafficked areas:

Selected "as dug" material with a unit size no more than 75mm compacted to 90% maximum dry density. Compaction equipment on top of the system not to exceed 2,300kg per metre width. 10/.

Finalise the pavement construction / landscaping over the Aquacrate system.

# Loadbearing underground water storage/attenuation system

## The Advantages of AquaCrate

- # Assembled ready to install with up to 75M<sup>3</sup> on a full load
- # Available in different configurations to meet specific requirements
- # High load bearing capability capable of withstanding HGV traffic
- # Simple and fast to install with 3 units per M<sup>3</sup>
- # Modular size of 1m x 1m plan x 333mm height ensures great versatility in both size and shape of storage
- # Small modular height (333mm) allows use with high water tables
- # Standard connectivity with both 110 or 160mm connections
- # Lightweight units under 20kg removes need for mechanical handling



## The Principle

- # For permeable infiltration schemes AquaCrate units are wrapped in a white non-woven geotextile which allows water discharge through the subsurface whilst preventing the ingress of soil or sand particles
- # For water storage a geomembrane is used between the geotextile and the crate assembly

## Why us Aquacrates?

- # Prevents extreme peak flows to main drainage and water purification systems
- # Rainwater is "cleaned" by the geotextile surround
- # Decreases inconvenience of flooding during heavy rain falls
- # Allows development of difficult sites by use of attenuation storage
- # Decreases environment problems caused by development

## Design

- # Following detailed assessment of the required storm water to be stored (see CIRIA C522, RI 56 & BRE 365) the total number of Aquacrate units can be calculated using approx. 3/m<sup>3</sup> (1000 litres). Decide on the best configuration for the characteristics of the site in question and create the "box" accordingly using the length and width dimensions allowing for a 94% void ratio.
- # Aquacrate is suitable for landscaped and car park areas as well as heavier duty use. As a guide, units require approx 0.75m of cover in landscaped areas and 1metre cover in vehicular areas with 75mm sharp sand base.

PRODUCT DATA	AquaCrate
NOMINAL SIZE	1000 x 1000 x 333 mm
CAPACITY	333Litres(3 per cu.metre)
UNIT WEIGHT	17kg
VOID RATIO	
COMPRESSIVE STRENGTH	400+KN/mA2

## Made in UK from strong copolymer polypropylene

- Can be used for water storage and for attenuation to prevent flooding
- Helps prevent peak flows to main drainage and purification systems;
- Rainwater is "cleaned" by geotextile surround;
- Decreases inconvenience of flooding during heavy rain falls;
- Promotes the balance in the groundwater position;
- Decreases environment problems caused by development
- Easily installed (see overleaf)

