



General Installation Guidelines

RainSpace® Stormwater Management Detention Chamber

The RainSpace Underground Stormwater Management Detention and Infiltration Chamber is configured according to the stormwater management capacity requirement in conjunction with the available space on site. The footprint shape can be varied according to the shape of the site and the presence of other structures on the site. The depth of the chamber is also variable in order to achieve the desired volume. The standard minimum top fill depth over the top of the RainSpace Chamber is 24" and may be composed of the naturally excavated soil or imported aggregates and/or sand, depending upon the character of the excavated soils and the surface loads anticipated after installation. The top fill depth may be increased and structural stone and geogrid stiffeners may be added to accommodate heavier surface loads up to H-25 and may be augmented with pavements and other stiffening and dispersion materials as necessary.

A detailed installation guideline is provided for each installation that covers each of the steps of a complete RainSpace Chamber installation. This General Description of the Standard Installation Procedure is a summary of the principal steps of the installation.

The excavation is made according to the specifications of the given project as to footprint dimensions and depth. The excavation width and length will be approximately 6" - 12" greater than the finished dimensions of the Chamber. The excavator should exercise care to make the sidewalls as vertical as possible and the bottom as level as possible. In the excavation the corners are to be squared up with shovels and the bottom smoothed and free of large debris and rocks over 1". Sub soil may require compaction when soft.

Depending upon the firmness of the soils and the depth of the excavation, it may be appropriate to erect a simple temporary perimeter framework of scrap lumber in the dimensions of the Chamber to hold up the geotextile filter material while the Core Structural Bundles are being laid in place. In deep excavations, it may be appropriate to build a simple frame to hold up the geotextile filter material and also retain the sidewall soils until the side fill is placed along the sides of the Chamber.

When the excavation has been prepared, the geotextile filter material is placed into position and unfolded along the bottom and up the sides; the sides may be held up in the vertical position with some soil over the excavation edge or by clamping the fabric to a temporary perimeter frame or wall referenced in the preceding paragraph. Joins in the pieces of geotextile filter material shall be overlapped a minimum of two feet.

The Core Structural Bundles are then placed inside the geotextile filter material and stacked according to the Stacking Plan specification of the particular unit. The Stacking Plan describes the layout and number of the stacks of bundles, the manner of laying up each stack and the number of bundles to be placed side by side, and end to end and stacked on top of each other in layers.

Plumbing fittings for water inlets (and outlets where specified in “large inlet/small outlet detention Chambers), water overflows and air vents are installed in the designated locations before the side fill is placed. Each pipe penetration of the geotextile filter material is secured by a stainless steel banding clamp.

After each layer of bundles is put in place, side fill is placed to an approximate depth of 8.5” all around the Chamber. The side fill may be “wet in” with a small amount of water to wash the fill into place and eliminate voids. As each layer of core bundles is laid in place, the side fill is elevated to the level of the top of that layer, until the required number of layers has been placed and the side fill is even with the top of the Chamber. This sequence of placing the side fill tightly locks the Core Structural Tube Bundles into place.

If a temporary framework was used to hold up the liners it may be pulled after the side fill has been placed and soil or sand poured into the spaces left by the frame members. If a wall was installed to support the liners and side soils, it may be abandoned in place.

The top fill is spread over the top of the chamber in 6” lifts. Each lift is compacted with a plate compactor or walk behind compacting machine. The first two lifts are accomplished by placing the fill with the excavator bucket and spreading with shovels and/or lightweight loader working the edges. Equipment wheels or tracks must not be placed on top of the chamber until the first two 6” lifts have been completed. Lightweight equipment may be used to complete the top fill placement provided slow speeds are used and turns/pivots which may disturb the fill are avoided. The top fill placement continues until the specified depth is reached, which may include finished surfaces of pavements as well as soil.

Contact your RainSpace representative or visit our website at www.RainTechnH2O.com for the latest installation guidelines.