



Stormwater Management Products

RainSpace® Stormwater Management Detention and Infiltration Chamber Specifications

RainSpace Infiltration Chamber Configuration

The RainSpace® Stormwater Infiltration Chamber is an underground water detention and infiltration system used in Best Management Practices for Stormwater Management and Control. Virtually any size, configuration and capacity is available including large commercial and institutional installations for stormwater management, retention, infiltration, water detention or reuse. Each RainSpace Chamber is fabricated according to the capacity requirements of the site and the space available for installation.

Rain Space Stormwater Management Infiltration Chambers are designed as stand-alone, end-of-storm drain infiltration chambers or as temporary detention chambers (large inlet, smaller outlet), with or without sub-soil infiltration, in line with storm drain systems terminating at connecting drains or surface spreaders.

Effective Proprietary Design

RainSpace High Density Polyethylene bundled, tubular, porous, “core elements” are corrugated for strength, providing both structure and void space. Curved surfaces with concentric grooves and circular passages maximize hydraulic flow while adding strength and resistance to surface loads and earth loads. Surface loads, impact loads and static earth loads are supported by and spread over the horizontal massed patented structural core bundles. There are no vertical pipes, panels, boxes or columns used for structural support. The structural core bundles can flex and heave during an earthquake or soil subsidence event. Any water mass held in the Chamber is contained within the structural core bundles of tubes, minimizing kinetic movement of heavy masses of water. These characteristics unique to the RainSpace Chamber minimize the potential for failure or collapse from quake, vibration, subsidence and surface loads.

High Capacity

The RainSpace tubular core provides over 97% void space storage efficiency. The modular design allows systems to be designed to fit any site configuration and capacity requirement.

Easy Installation

Installs quickly with a minimum of labor and equipment. Highly efficient excavation/void space ratio substantially reduces earth moving costs. Convenient, lightweight ten foot lengths are easy to transport, store and handle safely during installation. Custom lengths are available which increase the configuration options. Installation and performance are not sensitive to excavation irregularities so installation costs are further reduced. Typically requires no imported matrix or

backfill material when installed in appropriate soils. Excavated soils are typically used for top fill and side fill around the Chamber structure, minimizing imported rock or sand. Structural stone is added to the top fill when the surface use includes vehicular loading.

Versatile

RainSpace Chambers can be designed to fit any size or shape application, including curves, angular or irregular shapes or unlevel and sloping sites.

Long Life

The underground RainSpace components are not exposed to UV and are essentially impervious to normal soils and water conditions. The RainSpace High Density Polyethylene structural core bundles and the polyethylene geotextile filter fabrics are expected to have a 100-plus year life.

Environmentally Friendly

The high density polyethylene structural core bundles are made in the USA and are 100% recyclable.

Lightweight

HDPE Structural Core Bundles are lightweight and all materials can be handled and placed by hand with no heavy equipment required.

Complete Installation Component Package

Each RainSpace Stormwater Infiltration Chamber is shipped complete with all components and parts, ready for installation. Included are the Structural Core Bundles, Inlet Clarifier with filter and Sediment Isolation Filter Tube (SIFT), overflow well, clamps and fittings, all sized for the specified plumbing/drain connections and flow requirements. The serviceable Inlet Clarifier, filter and SIFT reduces total suspended solids (sediment and particulates) from the stormwater water prior to entering the Chamber. Detailed installation guidelines are provided to the installing contractor.

Technical Specifications

Green Format Specification

Section 33 16.16 Underground Water Utility Storage Tanks

Scope

This specification describes the RainSpace® modular underground stormwater management infiltration and detention systems for use in mass stormwater management and control applications.

Requirements

The RainSpace system components include geotextile filter material with 100 gallon per minute per square yard flow rates, 4" inside diameter Structural Core Bundles, inlet clarifier with filter and SIFT, overflow well, inflow and outflow fittings, lids, stainless steel clamps and all other required fittings. Structural Core Bundle elements shall meet ASTM F405 and ASTM F667.

Filter Fabric Performance

The geotextile filter fabric shall be 8oz/square yard non-woven polyethylene, 100 gpm/square yard flow rate installed continuously and overlapped a minimum of two feet at joins. Filter fabric at pipe penetrations will be secured with stainless steel banding clamps.

Core Performance

Modular core elements shall be continuous, un-joined units, factory packaged. Performance shall meet or exceed ASTM Standards 405 and 667 and AASHTO Standard M252. Core elements manufacturing process shall include not less than hourly measurement of weight, dimensions and consistency of mass distribution.

Fittings

Pipe sleeve banding clamps shall be stainless steel and shall conform to ASTM F405 or ASTM F667.

Material Properties

Core elements shall be manufactured of high density polyethylene conforming with the minimum requirements of cell classification 423410C as defined and described in the latest version of ASTM D3350; or ASTM D1248 Type III, Class C, Category 4, Grade P33. Core elements shall meet or exceed AASHTO Standard M252.

Installation

Installation shall be in accordance with RainSpace published installation instructions with the exception that minimum top fill cover shall be verified by site engineer to meet actual conditions and anticipated maximum surface loads. Install metallic locator tape at corners prior to covering with top fill.