



CULTEC Residential Stormwater Management System FAQ

What is Residential Stormwater Management?

Residential Stormwater Management is the practice of controlling stormwater runoff generated by residential properties. Impervious surfaces like roofs, patios, driveways, and heavily compacted pervious surfaces such as lawns prevent rainfall from being evenly distributed across the ground and eventually absorbed into the native soil. These impervious surfaces increase the volume of runoff and the rate at which the runoff occurs. The increased volume and runoff rates can have negative impacts downstream including channel erosion and flooding of adjacent properties.

How are Residential Stormwater Management Systems sized?

Local mandates typically provide system requirements, such as those for volume, soil infiltration rates, depth to ground water, and distance to foundations. In general, systems are sized to capture and hold runoff generated from proposed impervious surfaces from a chosen rainfall event.

In municipalities where a residential stormwater mandate exists, how is the required storage volume determined?

The runoff depth required in the sizing calculation varies from site to site. In some municipalities the storage is calculated with 1 inch of rainfall over new impervious cover. Other locations base it on the 100-year, 24-hour storm. Using the impervious area, the [CULTEC Residential Drainage Sizing Table](#) applies rainfall depths ranging from 1 inch to 6 inches which captures most residential applications. It is recommended that any requirements beyond that should seek a licensed engineer to conduct a drainage study and calculations.

How to choose the right CULTEC model for a Residential Stormwater Management System?

The CULTEC R-model is our recommended approach. The R-model is a stand-alone unit with two fully closed end walls that is available in a variety of chamber sizes. The CULTEC R-model of any size can be used alone, combined with other R-models in a side-by-side configuration, or trimmed to overlap one another and form a tunnel. The R-model chamber size is selected based on available area and depth, usually driven by offset to groundwater or ledge. The R-model of the Contactor 100, Recharger 180 and Recharger 330XLHD are the best products to consider for residential applications. [Refer to this chart for CULTEC chamber sizes.](#)

What is the most efficient configuration for a 2-chamber, 4-chamber system, etc.?

[CULTEC's Residential Drainage Sizing Table](#) is set up so the storage requirement will be met regardless of the configuration. Use a configuration that meets the best practices for locations outlined below. Generally, the configuration that permits the greatest storage capacity in the smallest footprint is the most efficient configuration.

What are the best practices for the location of a CULTEC Residential Stormwater Management System?

CULTEC systems can be installed beneath lawns, greenspaces, hardscapes and beneath driveways with adequate cover. It is recommended to maintain at least 10 feet of horizontal separation between a CULTEC system and any foundation, retaining wall, or other structural member. Adequate setback dimensions from property lines, as prescribed by the local municipalities must be considered. Additionally, adequate cover over the chambers should be maintained so future home maintenance or construction may be conducted without damaging the CULTEC system.



CULTEC Residential Stormwater Management System FAQ *(cont.)*

How does a Residential Stormwater Management System work in poorly infiltrating soil such as clay?

Infiltration systems do not work well in these situations; other solutions like bio-retention are more appropriate when soils have low infiltration rates. We suggest the designer defer to the local stormwater management manual for minimum allowable soil infiltration rates. In NY State, for example, the minimum required soil infiltration rate for an infiltration basin is 0.50 inches per hour. When designed as a detention basin, with a controlled outfall, CULTEC systems are effective when installed in poorly infiltrating soils such as clay.

What are the best practices for the design and installation of a CULTEC Residential Stormwater Management System?

Typical design generally includes 6 inches of stone above and below the chambers, as well as a 12-inch border of stone surrounding the chambers. The void space within the stone is used for water storage, therefore the entire system is wrapped in non-woven filter fabric to prevent sediment from entering and clogging it. 12 inches of minimum cover above the top of the chamber is necessary for greenspace, non-traffic applications. For traffic applications, 18 inches minimum cover is required above the chambers.

How do owners maintain their CULTEC Residential Stormwater Management System?

It is recommended to have at least one inspection port on a system to allow camera access for interior inspection. However, without a pre-treatment option, a CULTEC system cannot be effectively cleaned. CULTEC recommends the StormFilter T-80 unit upstream of all CULTEC systems. The StormFilter T-80 effectively filters leaves, sediment, trash, and debris from stormwater runoff, allowing a homeowner to access and clean the system easily.

Can a CULTEC Residential Stormwater Management System have landscaping around or on top?

Landscaping with shallow root systems is allowed over the CULTEC system. Rain gardens and bioswales may be built ovetop the chamber system, given adequate depth of cover. Please consult with a landscape architect to ensure that the root system depths do not exceed the cover depth over the chamber system. Large trees or those with deep root systems are not allowed near the chamber system. If placed near the system, consult a landscape architect to determine root reach and depth. Chamber systems must be located outside the critical root zone.

After installing a CULTEC Residential Stormwater Management System, can a vehicle drive over it?

Please consult the [Installation Instructions for CULTEC Stormwater Chambers](#) and use the tables on page 18 for maximum allowable vehicle loading.

Helpful links:

Web page: [CULTEC Chambers for Residential Drainage](#)

[CULTEC Residential Drainage Brochure](#) includes CULTEC Residential Drainage Sizing Table on pages 2-3.

Call your local CULTEC salesperson for further information. [Find a Rep](#)