



CALVERT COUNTY
HEALTH
DEPARTMENT

Division of Environmental Health

Percolation Testing Guidance Document

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Percolation Testing Guidance Document Outline

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What is a Percolation Test?

Percolation testing (perc test) is a component of any proper site evaluation for on-site sewage disposal in Maryland. The test determines the permeability & suitability of the soils on a property for the purposes of onsite sewage disposal. During this process, excavations are dug on the property using a backhoe, excavator or mini-excavator and a soil evaluation is documented by a Licensed Environmental Health Specialist (LEHS) to create a soil profile. A soil evaluation means that a description of the physical properties of a soil including color, texture, structure, limiting horizons and soil moisture content are recorded. Once the soil profile is documented, the soil is then tested for permeability at a depth that maximizes the most favorable soils. The chosen depth tested for permeability is at the discretion of the LEHS onsite and is based on their experience and knowledge as to what best satisfies COMAR requirements and should be the ultimate depth of the soil absorption component. A percolation stick (perc stick), a tool used in measuring the soil permeability, is an instrument that has 3 bolts on it that are staggered at one-inch apart. During permeability testing, the perc stick is lowered in the test hole and the hole is filled with water. The times at which each of the 3 bolts on the perc stick individually emerge from the water is documented to determine how many minutes per inch the water percolates through the soil. This is called the percolation rate. Test holes may be refilled and rates measured multiple times in order to achieve a consistent rate, at the discretion of the LEHS. The minimum allowable percolation rate is 2 minutes per inch and the maximum allowable percolation rate is 30 minutes per inch, per COMAR. Any percolation rate greater than 30 minutes per inch is considered “unsatisfactory” for conventional trench onsite sewage disposal systems.

Different Types of Percolation Tests/Site Evaluations

There are a few different types of perc testing/site evaluations. Percolation testing is conducted for repair/replacement of an existing system, proposed new construction with an On-site sewage disposal system on an existing lot of record, and proposed subdivision of land utilizing on-site sewage disposal systems. There are also different testing methods that are used to conduct percolation testing. For example, the testing method for sand mound or at-grade sewage disposal systems is very different from conventional trench testing and requires use of a single ring infiltrometer. Typically, conventional trench testing is first conducted and if the results indicate the need to perform single ring infiltrometer testing for sand mounds or at-grades a separate application and site visit are required to proceed.

Repair/replacement perc tests are conducted on properties with existing dwellings that have septic systems that are no longer properly functioning. Wet season perc tests are done to evaluate existing lots of record or subdivisions for new construction purposes.

Site evaluations/percolation testing for repair/replacement septic systems may be conducted at any time of the year. This allows property owners to repair/replace failing septic systems anytime during the year and ensures the protection of public health.

Typically, only one-hole is dug for this type of perc test. However, if soils prove to be insufficient, more holes may be dug in order to find soils suitable for sewage disposal.

Wet season percolation testing/site evaluations for subdivision of land should be performed only at the time of the year when the highest water table can be expected per COMAR 26.04.03.02. Percolation testing/site evaluations for existing lots of record are typically conducted during the wet season, but also may be conducted outside of the wet season per LEHS discretion based on soil surveys, sufficient soil information from neighboring lots and/or experience in the area. Typically wet season runs anywhere from March to May depending upon groundwater levels.

The minimum number of perc tests required to establish a suitable disposal area for existing lots of record or subdivisions is two. Three tests are standard and suggested, however, more tests or evaluations may be necessary to firmly establish consistency within the area depending upon specific soil and site constraints. Please note that up to three perc tests will be conducted per Sanitary Construction Application. Additional testing will require additional fees. The number of requested evaluations should be indicated on the Sanitary Construction Application.

Steps Required to Schedule a Perc Test

The first step required in order to schedule a perc test for a repair/replacement septic system or existing lots of record is to submit a Site Evaluation/Sanitary Construction Application to Environmental Health. The application can be obtained from the Environmental Health Office which is located at 150 Main Street, Suite 100, Prince Frederick, MD 20678. Additionally, the application can be found on our website at www.calverthealth.org. (*From the home page click on Community Services [yellow tab] and from the drop down menu select Environmental Health Services. Under Related Links select Applications and Forms click on Site Evaluation/Sanitary Construction Application.*) If submitting for perc testing for subdivision of land please follow all of the directions listed above, however, choose *Subdivision Application* instead of *Site Evaluation/Sanitary Construction Application*. Applications for new construction and subdivision must be accompanied by a concept plan that clearly indicates the requested areas for testing and/or proposed structure locations. **Applications for wet season testing will now be accepted year round. Please be aware that scheduling for wet season is first come, first serve.**

The next step is to submit the fee to Environmental Health. The fee to test repair/replacement systems is \$175 & the fee to test existing lots of record or subdivision of land is \$250 per lot. Environmental Health accepts cash, checks, money orders and Mastercard or Visa. Please make any checks payable to the Calvert County Health Department and be aware that no payments may be taken over the phone. If mailing an application and fee please mail to: Calvert County Health Department, P.O. Box 980, Prince Frederick, MD, 20678. Please be aware that the septic contractor will have their own fee for conducting the excavation for a perc test/tests. **All properties must have either proposed test locations or property lines staked by a licensed**

surveyor prior to testing. Failure to do so may result in the lot not being tested in the wet season applied for and an additional year-long delay in testing.

The last step is to select a contractor and note your choice clearly on the Site Evaluation/Sanitary Construction Application under the section *Septic Installer of Choice*. The contractor must be a licensed septic installer. We can provide a list of licensed septic installers upon request but may not give recommendations. Additionally, during wet season site evaluations and perc testing will only be scheduled with the chosen licensed septic installer. **Property owners, surveyors or other interested parties will not be contacted for scheduling by the assigned LEHS.** Please keep in mind that if there is not a licensed contractor listed on the application we do not know who to contact to schedule the test. This can result in delays and possible inability to schedule testing, especially during wet season testing.

Equipment Needed to Conduct Percolation Testing

In order to properly conduct a percolation test/site evaluation there is equipment that is needed. The LEHS will provide a perc stick and a measuring tape. The contractor that is hired to dig the holes must provide a backhoe/excavator with an extend-a-hoe that can dig to a depth of at least 18 feet, a hand-auger with extensions capable of reaching depths of up to 22 feet below land's surface, water and a bucket. Please understand there may be times when it is necessary to have a machine onsite that is capable of digging deeper than 18 feet. This may require a second visit and application.

Who Needs to be Present at a Percolation Test?

During a percolation test/site evaluation a Licensed Environmental Health Specialist (LEHS) and licensed septic installer need to be present. Property owners, Surveyors, Realtors or anyone else with an interest in the property are always welcome to observe.

How Long Does a Percolation Test Take?

The time needed to conduct percolation testing/site evaluation differs at each site. The factors that can affect the amount of time required to conduct a site evaluation/perc test include ease or difficulty accessing the perc site/sites, percolation rates and weather conditions. Typically, perc tests for replacement systems take anywhere from 1-2 hours while new construction perc tests take roughly 1-3 hours per lot. However, there are times when a site evaluation may take up to 6 hours.

Who is Authorized to Dig a Perc Test?

Only a licensed septic installer is authorized to dig a perc test. This ensures that the test can be conducted properly with all of the necessary equipment onsite. Percolation test holes must be dug only under the supervision of a LEHS and **may NOT be dug ahead of time. If holes are dug prior to LEHS arrival the holes will have to be dug again.**

Required Site Preparations Prior to Perc Test

There are site preparations that need to take place prior to the date/dates scheduled for percolation testing to ensure a safe, accurate and efficient process. First, the licensed contractor hired to conduct the perc test should contact **Miss Utility** to safeguard against hitting power, cable or phone lines during excavation. Next, for perc tests conducted for new construction during the wet season, the property owner should ensure that a licensed surveyor has either **staked out the property lines** or placed stakes in the area of proposed perc sites. This confirms that the tests are taking place on the correct lot and/or in the correct area that is being proposed for sewage disposal. Please note that any property scheduled for testing that is not staked will lose its place in the order for that wet season and is not guaranteed to be tested during the wet season applied for. Finally, if there is an area on the property or multiple lots that are in the woods it is helpful and time saving to have the contractor clear a path to the area/areas that are to be tested prior to the arrival of the LEHS.

How Long is a Perc Test Valid?

Percolation testing is considered valid for 2-years and must be renewed every 2-years. In order to renew perc tests a *Request for Renewal* form will need to be submitted to the Environmental Health Office. The form can be obtained from the Environmental Health Office which is located at 150 Main Street, Suite 100, Prince Frederick, MD 20678. Additionally, the application can be found on our website at www.calverthealth.org. (*From the home page click on Community Services [yellow tab] and from the drop down menu select Environmental Health Services. Under Related Links select Applications and Forms click on Request for Renewal.*) There is no fee associated with perc test renewal.

Is it Possible for a Perc Test Renewal to be Denied?

Perc test renewals are renewed at the discretion of the Approving Authority and may be denied if it is determined that this office does not possess site evaluation information adequate to ensure compliance with current regulations. Additional percolation testing or evaluations may be required before the renewal of a percolation test/tests is granted.

During the review of perc renewal requests, the LEHS is tasked with verifying that the perc testing conducted in the past provides thorough soil information within the proposed onsite sewage disposal area (OSDS). Additionally, the OSDS specifications are confirmed to be up to date with the latest regulations and are updated if necessary. Further, other site evaluation criteria must be taken into consideration such as neighboring development impacts, changes in surface and subsurface drainage patterns, history of OSDS failures in the area among other site evaluation criteria. All percolation tests must be field located by a licensed surveyor following testing. Failure to do so may result in losing the test locations and invalidation of prior test results.

Factors that Deem a Perc Test as “Unsatisfactory” for Sewage Disposal

There are several factors that may render a perc test unsatisfactory including, but not limited to:

- (1) Percolation rates slower than 30 minutes/inch (Conventional trench and seepage pits).
- (2) Insufficient soil treatment zone, 4 feet required per COMAR 26.04.02.04C(1).
- (3) Drainage areas closer than 25 feet.
- (4) Steep slopes closer than 25 feet.
- (5) Water bodies including intermittent and perennial streams closer than 100 feet.
- (6) Insufficient area for replacement OSDS replacement areas.

It is also important to note that a passing percolation test alone does not mean that the property is buildable. A percolation test is just one step in conducting a proper site evaluation and determining the suitability of a property for sewage disposal.