

install Pervious Concrete. The NRMCA Certification Program distinguishes three levels of certification based on experience – Technician, Installer, and Craftsman. ACI 522.1-13 requires that the project be supervised by three (3) Installers or one (1) Craftsman. A list of NRMCA Certified Contractor installers can be found at www.specifyconcrete.org in the Pervious Concrete tab.



PACA conducted a Pervious Concrete Maintenance and Operations workshop at the Westmoreland County Conservation District. A video of the demonstration can be found on the video page of www.specifyconcrete.org.

Maintenance & Operations

The longevity of Pervious Concrete falls into the hands of the owners and their Operations and Maintenance practices.

- In 2013, PACA created a *Maintenance and Operations* document designed to detail the procedures to maintain Pervious Concrete. In addition, PACA has also developed two videos that demonstrate the cleaning of Pervious Concrete and the testing procedure (ASTM C1701) for measuring the in-place filtration

rate of Pervious Concrete. These documents and videos can all be found at www.specifyconcrete.org under the Pervious Concrete tab.

- Deicing has proven to be detrimental to Pervious Concrete. Sand should be used as an alternative to deicing chemicals.
- Steel snowplow blades used directly on the surface can damage Pervious Concrete. If the blade is allowed to run onto the surface and it drops into a joint, the surface can be severely damaged. Plows should be outfitted with a rubber surface boot or set up to be held 1”

Lastly, the Standard Specification for Pervious Concrete is ACI 522.1-13.

The updated version can be purchased at <http://www.concrete.org/Store/ProductDetail.aspx?ItemID=522113>

If you have additional questions regarding Pervious Concrete, please contact the PACA office

at
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 717-234-2603

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Key Elements to a Successful, Long Lasting Pervious Concrete System



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The Scottsdale Gazebo, Scottsdale, PA, is an excellent example of the proper way to design with Pervious Concrete. The gazebo and the Pervious Concrete is designed at the highest elevation with the landscaping at lower elevations so dirt and debris are not washing on to the Pervious Concrete.

Design

There are several design elements that must be considered when using Pervious Concrete to control your stormwater run-off.

- The aggregates detention base must be properly designed using the rainfall criteria for the area in which the project will be located.
- A subgrade percolation test must be performed in order to determine what the depth of the detention base will need to be. It is essential that the base be deep enough so the water does not get trapped in the Pervious Concrete layer in freeze thaw climates. Underdrain pipes may be necessary in cases when soil has minimal percolation rates.
- Pervious Concrete should not be used as a catch basin to drain surrounding areas. If this is unavoidable, a maintenance plan should be required.
 - Roof drains should not be directly

emptied onto the surface, as large amounts of roof debris may be present in the run-off.

- Areas with mulch should not be allowed to drain onto Pervious Concrete. Either design the Pervious Concrete layer at a higher elevation than mulched areas, or design the system with a curb to stop the mulch from washing onto the Pervious Concrete.



Pervious Concrete Mix

The evolution of Pervious Concrete mixes has made it much easier to place. The older/ first generation mixes were much drier.

The concrete mix is a critical factor in determining the success of the system.

- ASTM C1688 is the Standard Test Method for Density and Void Content of Freshly Mixed Pervious Concrete. The ready mixed concrete producer should be incorporating this test method when designing the Pervious Concrete mixture.
- The only applicable test method for approval or rejection of the fresh Pervious Concrete at this time is its density. ACI 522.1-13 states that, for

acceptance, Pervious Concrete should be + 5 lbs. of the accepted fresh density from the submitted approved mixture proportion.

- The truck delivery schedule is critical. There should be no delays greater than 20 minutes between trucks, nor should trucks be stacked up on the site. Communication between the concrete producer and the contractor is essential.
 - You should always choose a concrete producer with experience producing Pervious Concrete. A list of qualified ready mixed concrete producers can be found at <http://www.specifyconcrete.org/producer-locator/>



The latest innovation in installing Pervious Concrete is to finish with a motorized pan float. This creates a much more uniform finish. Caution must be taken when using this method to be sure that the surface doesn't seal.

Installation Contractor

Contractors are a key element in the construction of a successful Pervious Concrete system.

An experienced NRMCA Certified Pervious Concrete Contractor should always be used to