



Concrete Briefs

ASTM C1701: Infiltration Test for Pervious Concrete

ASTM C1701 is the standard infiltration test for pervious concrete. We recommend that an infiltration test be performed at least annually in multiple locations to identify where and when maintenance might be needed. The test consists of four main components: Installing the infiltration ring, prewetting the concrete, testing the concrete and calculating the results.



To install the infiltration ring, first clean the surface. The infiltration ring must meet certain size requirements and be marked with two lines on the interior to correctly perform the test. The ring is then placed on the cleaned surface and secured in place with plumber's putty.



Once secure, prewet the concrete and infiltration ring with 8 pounds of water maintaining the head of water between the two marks on the interior of the ring. Begin timing as soon as the water hits the pervious concrete surface. When water is no longer present on the surface, record the elapsed time of the prewetting. The time elapsed determines the amount of water to be used in the actual test.

In most cases, 40 pounds of water will be required for the test. Record the weight. Within 2 minutes, add the proper amount of water to the ring. As with the prewetting stage, we will begin timing when the water impacts the pervious concrete surface and maintain the water head between the two lines marked on the infiltration ring. Again, when water is no longer present on the surface, record the elapsed time of the test.



With all of our data points collected, we then perform the infiltration calculation using the mass of the water, the diameter of the infiltration ring and time of the test. With that information we have our final infiltration rate.

A link to purchase the ASTM C1701 from ASTM international can be found on our web site at ChaneyEnterprises.com/PerviousConcrete

Infiltration Calculation:

$$I = \frac{KM}{D^2(T)}$$

M= Water Mass

D= Ring Diameter

T= Time to Infiltrate

K= 126,870 in (constant)



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