

# Pervious Concrete Owners Manual & Maintenance Outline

*Compiled, edited and updated by Bay Area Pervious Concrete, Jan 2023*

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## 1.0 Introduction

The technology of pervious concrete has advanced considerably in the past two decades. During that time we have made great strides in not just the quality of the finished product but also in our understanding of long term maintenance and durability-related issues. One of the most important factors in determining the degree of maintenance required and long term performance is whether or not the pavement receives run-off from adjacent pavements, hardscapes, or roofs\*. A well installed pervious concrete pavement that only receives water from rainfall, and not adjacent surfaces, will perform at a very high level long term with minimal maintenance if a few simple guidelines as outlined in this manual are followed. Pavements that do receive water from adjacent areas will, however, typically require a considerably higher level of maintenance.

## 2.0 General Guidelines

Hopefully your pavement was well protected during the construction phase and turned over to you in good working condition as verified with an infiltration test. As is true with most materials, a regular maintenance routine will be easier and cheaper than dealing with a problem caused by neglect or mis-treatment.

## 3.0 Infiltration Testing

Every pervious pavement has a different infiltration rate. The infiltration rate depends on the mix, the aggregate, the installation equipment and the technique of the installer among other factors. The infiltration rate will fall from its original rate to its steady state rate as the pavement settles into its useful life. In many cases, the steady state rate is high enough to require only minimal maintenance. Conversely, if the steady state rate is too low to infiltrate a typical storm, increased maintenance will be required. An initial infiltration test is recommended before the pavement goes into service to establish a baseline reading. Subsequent annual (or twice annual if in an area of heavy debris) testing will provide necessary guidance to establish the proper level of maintenance needed. To test the infiltration rate of your pervious concrete installation, a qualified technician can perform an ASTM C1701 Infiltration test.

## 4.0 Scheduled Maintenance

The goal of scheduled maintenance is to maintain an operable infiltration rate. A certain amount of dust, decomposed vegetation, and other debris will accumulate on and within your pavement over time. Maintenance can be as basic as regular blowing (leaf blower) or sweeping of seasonal vegetative dropping/debris off the surface before it decomposes and makes its way into the pavement pores. On larger projects scheduling a vacuum truck service may be more practical (just before and after the winter/rainy season is a good time). The precise maintenance schedule will vary by project, with the goal being to provide enough maintenance to keep the surface open and infiltrating water.

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## 4.1 Activities to Avoid

Nearby construction areas should not use pervious pavements as a staging area for construction debris, soils or fines. Washing vehicles on pervious pavements as well as heavy accumulations of organic matter or debris should be avoided.



**Landscaping and or construction debris**

**Washing vehicles with heavy accumulations of dirt on your pavement**



**Heavy accumulation of Falling leaves, needles or other vegetation left to decompose.**

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## 4.2 Surface debris

Surface debris such as leaves and pine needles are easily removed by sweeping or blowing. If you have a landscape maintenance crew on site on a regular basis, they can quickly and easily clean the surface with a blower, which may be all you ever need to do.

Where pervious concrete pavements receive run-off from adjacent surfaces, a steady quantity of fine debris which will likely settle into the pores of the pavement, greatly reducing or even preventing infiltration altogether. In these cases, keeping the adjacent pavements clean will help minimize clogging of the pervious concrete. Loose dry sediment in the pores can be removed by vacuuming (sweeping will not be effective) on a regular basis as determined by the frequency of debris loading. Note vacuum trucks will need to run at a slower speed than typical in order to pull loose debris out of the pores.

## 5.0 Occasional Spot Cleaning

### 5.1 First step: Vacuuming to prevent clogging

Prevent clogging and maintain the effective life of your pavement by quickly removing fine debris or clay soils from the surface before they become tightly packed into the voids. Fine debris is generally easy to remove while it is dry using a Shop Vac for small areas, a walk behind vacuum unit (see section 7.1) for a medium sized area, or a vacuum truck for larger areas. Occasional exposure to sticky clay or other fine sediments is not good, but generally not fatal. Use common sense and clean the surface as soon as possible for best results.

### 5.2 Second step: Pressure washing pavement

For small areas of acute clogging pressure washing, or pressure washing and vacuuming, have proven to be more effective than vacuuming alone to regain lost infiltration. We recommend pressure washing with a 2,500 - 3,500 psi unit with a 25 deg nozzle.

### 5.3 Impossible Clogs

Items like gum and migrated asphalt fines can be difficult to impossible to dislodge. In the case of something like gum, it is a small blockage and will not impact the steady state infiltration rate of the whole pavement. When asphalt pavement drains directly onto pervious concrete (which we do not recommend), debris and asphalt fines will over time migrate into the pervious concrete pores potentially clogging large areas. When the temperatures rise, the asphalt softens and sticks in the pores becoming difficult if not impossible to remove. If the pervious concrete area becomes sealed due to asphalt, the pervious concrete must be replaced to restore infiltration.

## 6.0 Repairs & Patching

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## 6.1 Small repairs

Due to the coarse and open pore nature of pervious concrete, repair of surface defects and cracks can be successfully performed by a qualified pervious concrete contractor. Note that as is always the case with any concrete, the color of a repair/replacement section may not match the original.

## 6.2 Large repairs or sub-pavement access

In the case of utility access beneath the slab or damaged pavement, a section of pervious concrete can be removed and replaced. Saw cut approximately 2/3 the depth of the slab, and then chip out the rest to create a rough surface which will allow the new section to mechanically bond to the existing. To replace the pervious material, contact your pervious concrete contractor.

## 7.0 Recommended Resources

### 7.1 Maintenance Equipment

“Little Wonder” walk behind debris vacuum - For small to medium size installations, to do maintenance in house. Can also be used on traditional impervious surfaces.

<http://littlewonder.com/lw-vac.asp>

“Billy Goat” Walk behind & self-propelled. For small to medium size installations, to do maintenance in house. Can also be used on traditional impervious surfaces.

<http://www.billygoat.com/Product-Categories/Detail/qv-quietvac-contractor-hard-surface>

### 7.2 Pavement Maintenance Service Providers

In the Bay Area:

Bling Bling Clean King

<https://www.blingblingkingclean.com/>

Look for street cleaning companies in your area who have combination pressure washing with vacuum capabilities.

*\* capturing roof water in the system is possible, however there are very specific design guidelines that need to be followed to do this successfully and minimize maintenance.*