



Maintenance recommendations for Permeable Interlocking Concrete Pavement (PICP)

Prepared by Urban Drainage and Flood Control District (UDFCD), revised February 2018

Snow and ice removal:

<p><u>DO:</u></p> <ul style="list-style-type: none"> • Plow with a rubber snow blade and shovel. • Use granular deicing salts sparingly when needed. 	<p><u>DO NOT:</u></p> <ul style="list-style-type: none"> • Never use sand. • Do not use liquid deicer. This is ineffective as it will not stay on the surface of the pavement. • Do not use a metal snow blade to scrape the pavers. As with all pavements, this can scratch the pavers. Additionally, with PICP, it may pull up a paver. Set the blade slightly above the pavement.
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Additional notes on snow and ice removal:

- Permeable concrete pavers are extremely resistant to freeze-thaw events.
 - Small, high density units resist cracking from freeze-thaw events. (Smith 2011)
- Due to the infiltration capacity of permeable pavers, any ice or snow left over from plowing will drain into the section during the day, reducing any refreezing at night.
 - If freezing of water occurs in the sub base, the pavement will not heave due to sufficient void space in the aggregate layer. (Smith 2011)
 - This will also result in less use of deicing salts
- Since deicing salts will infiltrate into the basin and soil they should be applied sparingly, as they can accumulate in the soil subgrade. PICP requires less deicing salts than asphalt pavements, since permeable pavement retains remains warmer throughout the winter. (Smith 2011)
- Do not use sand for traction or for sweeping as it will speed up clogging and require additional maintenance.
 - If needed, open graded chips or stone (ASTM No. 9) may be used during the winter for traction if ice is present but will require sweeping and removal in the spring.
 - If sand is used, schedule maintenance (sweeping) following snowmelt.

Routine maintenance:

The following is suggested to maintain infiltration rates, remove sediment, avoid and remove weeds, and stains:

<p><u>DO:</u></p> <ul style="list-style-type: none">• Sweep 1 to 2 times per year with a regenerative air sweeper.• Replace aggregate between the pavers when it is more than half an inch below the surface of the paver.• Kill weeds with a torch or spot treat with herbicide.• Use a biodegradable foaming degreaser to remove oil stains. Wipe off residue.	<p><u>DO NOT:</u></p> <ul style="list-style-type: none">• Never pressure wash the PICP.
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Additional notes on routine maintenance:

- Individual concrete pavers can be replaced if damaged with little equipment required.
 - Replacement of pavers should be performed by experienced paver installer.
 - Replace aggregate between pavers with washed ASTM No. 9 aggregate.
- A regenerative air sweeper should be used for routine maintenance to maintain infiltration rates.
 - Sweeping and vacuuming is most effective when the pavement is dry. (ICPI 2009)
 - Broom sweepers can be used to remove sediment on the surface of the paver and can be used to reduce sediment that may end up in the joints but will not pull sediment from the joints as required for routine maintenance.
 - Pure vacuum sweepers can be used in case of accidental contamination (e.g. spilling of landscape material on the PICP) or when routine maintenance is not regularly performed and the pavement becomes clogged.
 - Settings on the sweeper may need to be adjusted to avoid uptake of the aggregate from the pavement voids.

- Pressure washer is not recommended as it will push sediment deeper into the void space, effectively clogging the pavement.
- Infiltration tests can be conducted to ensure pavement surface is infiltrating properly. This includes:
 - Observation during a storm to determine if water is infiltrating into the surface or bypassing the pavement and entering storm inlets.
 - Pour approximately 1 gallon of water onto the pavement over approximately 30 seconds. If the water travels 10 feet or more, maintenance or additional infiltration tests are recommended.
 - Measure infiltration per ASTM C 1701.
- Replenish aggregate between pavers with washed ASTM No. 9 aggregate if more than a ½ inch from paver bottom. This will keep sediment at the surface where it can be removed with a regenerative air vacuum. (Smith 2011)

REFERENCES

Interlocking Concrete Paver Institute (2009). *PICP Specialist Course*. Web. 10 March 2015.
<http://www.icpi.org/sites/default/files/Section_9_PICP_Course_Manual_Layout6.pdf>

Smith, David R. (2011). *Permeable Interlocking Concrete Pavements*, 5th Ed., ICPI, Virginia.

Urban Drainage and Flood Control District (2010). *Urban Storm Drainage Criteria Manual*, Vol. 3, Water Resources Publications, Colorado.