BORGERT PERMEABLE PAVEMENTS

GREEN PRODUCTS

...just better

Stormwater management solution

The Solution to Stormwater Runoff Problems

Permeable interlocking concrete pavements (PICPs) are becoming increasingly popular as more cities and states are faced with meeting stormwater runoff regulations, increased impervious cover restrictions, and the adoption of LID or LEED practices.

Permeable interlocking concrete pavement systems mitigate stormwater runoff through infiltration. This allows for reduction of volume and peak flows, improved water quality, filtering of pollutants, mitigation of downstream flooding, and recharge of groundwater.

PICPs are considered structural BMPs under infiltration practices. From an engineering viewpoint, permeable pavements are infiltration trenches with paving on top that support pedestrian and vehicular traffic. By combining infiltration and retention, permeable interlocking concrete pavements offer numerous benefits over other types of structural systems. Permeable pavements also work well in conjunction with other recommended BMP practices such as swales, bioretention areas, and rain gardens.

Cover Image: Derby Hill, Denver, CO - 2010

Colorado State University, Fort Collins, CO - 2010

Schmelz Countryside, Maplewood, MN - 2002

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Structural pavements

Earn LEED Points for using PICPs

Legacy at Woods Edge, Lino Lakes, MN - 2008

Improve water quality

Private Residence - 2010

Best BMP Practices

For years, most home builders and developers were wary of green building practices. However, with impervious cover restrictions and the increasing costs of energy now beginning to impact residential projects, the NAHB is encouraging the use of "green" products in single and multifamily developments. Permeable pavements offer an attractive solution to impervious cover restrictions.

PICPs can reduce runoff volumes and flows and recharge groundwater. They also can filter pollutants with removal rates of up to 95% total suspended solids, 70% total phosphorous, 51% total nitrogen, and 99% zinc. Reduction of runoff also may offer property owners reductions in stormwater utility fees.

Colorado State University, Fort Collins, CO - 2010

Features and Benefits of Permeable Interlocking Concrete Pavement Systems (PICP)

PICPs are attractive and can be used for residential, commercial, institutional, and recreational pedestrian and vehicular applications. They can be used for parking lots, driveways, overflow parking, emergency lanes, boat ramps, walkways, low-speed roadways, and storage facilities. ***Permeable or porous pavements should not be used for any site classified as a stormwater hotspot (anywhere there is a risk of stormwater contaminating groundwater).*** This includes fueling and maintenance stations, areas where hazardous materials or chemicals are stored, or land uses that drain pesticides/fertilizers onto permeable pavements.

- **Can be designed to accommodate a wide variety of stormwater management objectives**
- **Runoff reductions of up to 100% depending on project design parameters**
- **Maximizes groundwater recharge and/or storage**
- **Reduces nonpoint source pollutants in stormwater, thereby mitigating impact on surrounding surface waters, and may lessen or eliminate downstream flooding and streambank erosion**
- **Allows better land-use planning and more efficient use of available land for greater economic value, especially in high-density, urban areas**
- **May decrease project costs by reducing or eliminating drainage and retention/detention systems**

Hildebrand Ranch, Jefferson Cty, CO - 2010


Osseo Streetscape, MN - 2009

It is recommended that a qualified civil engineer with knowledge in hydrology and hydraulics be consulted for applications using permeable interlocking concrete pavements to ensure desired results. Information provided is intended for use by professional designers and is not a substitute for engineering skill or judgement. It is not intended to replace the services of experienced, professional engineers.

The benefits of our Permeable Pavers run deep. From efficient water management to incredibly smooth pedestrian surfaces, you're watching out for the environment with every step. Permeable Pavers recharge groundwater and help control water pollution. Where else can you put beauty and function to work so elegantly?

The possibilities are endless.

West Broadway Retail Center, Forest Lake, MN - 2007

Eliminate stormwater run-off

Odell Brewing Company, Fort Collins, CO - 2009

Macalester College, St Paul, MN - 2009

Bethel University, St Paul, MN - 2002

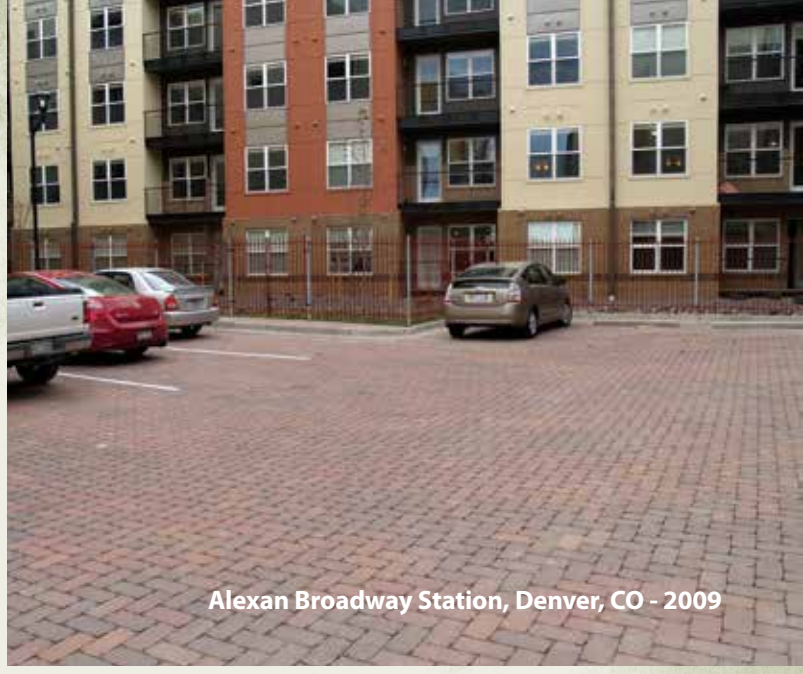
Infiltration Rate Design

Permeable interlocking concrete pavements are typically designed to infiltrate frequent, short duration storms, which make up 75-85% of rainstorms in North America. It also may be possible to manage runoff volumes from larger storms through engineering design and the use of complementary BMPs, such as bio-retention areas and swales.

If properly constructed and maintained, PICPs should provide a service life of 30 years. Like our traditional interlocking concrete pavers, they may be taken up and reinstated if underground repairs are needed. If, at the end of its design life, the pavement no longer infiltrates the required amount of stormwater runoff, PICPs are the only type of permeable pavement that can be taken up, the base materials removed and replaced, and the pavers reinstalled.

Development, Impervious Cover and Impacts of Stormwater Runoff

With ever-increasing levels of development, natural, open land is rapidly being replaced with impervious surfaces such as asphalt roadways, parking lots, and buildings. As a result, the management of increased levels of stormwater runoff and its impact on the environment has become a major issue for all levels of government throughout the country. Numerous studies indicate that stormwater runoff is the primary source of pollutants found in surface waters and contains a toxic combination of oils, pesticides, metals, nutrients, and sediments. Additionally, research has shown that once a watershed reaches just 10% impervious cover, water resources are negatively impacted.



Alexan Broadway Station, Denver, CO - 2009

Environmentally responsible

Private Residence, MN - 2010

Norlin Library, Boulder, CO - 2009

Permits better land-use planning, allowing more efficient use of available land for greater economic value.

Provides a highly durable, yet permeable pavement surface capable of supporting vehicular loads.

Locust Hills Clubhouse, Wayzata, MN - 2008

Borgert's way to a cleaner planet!

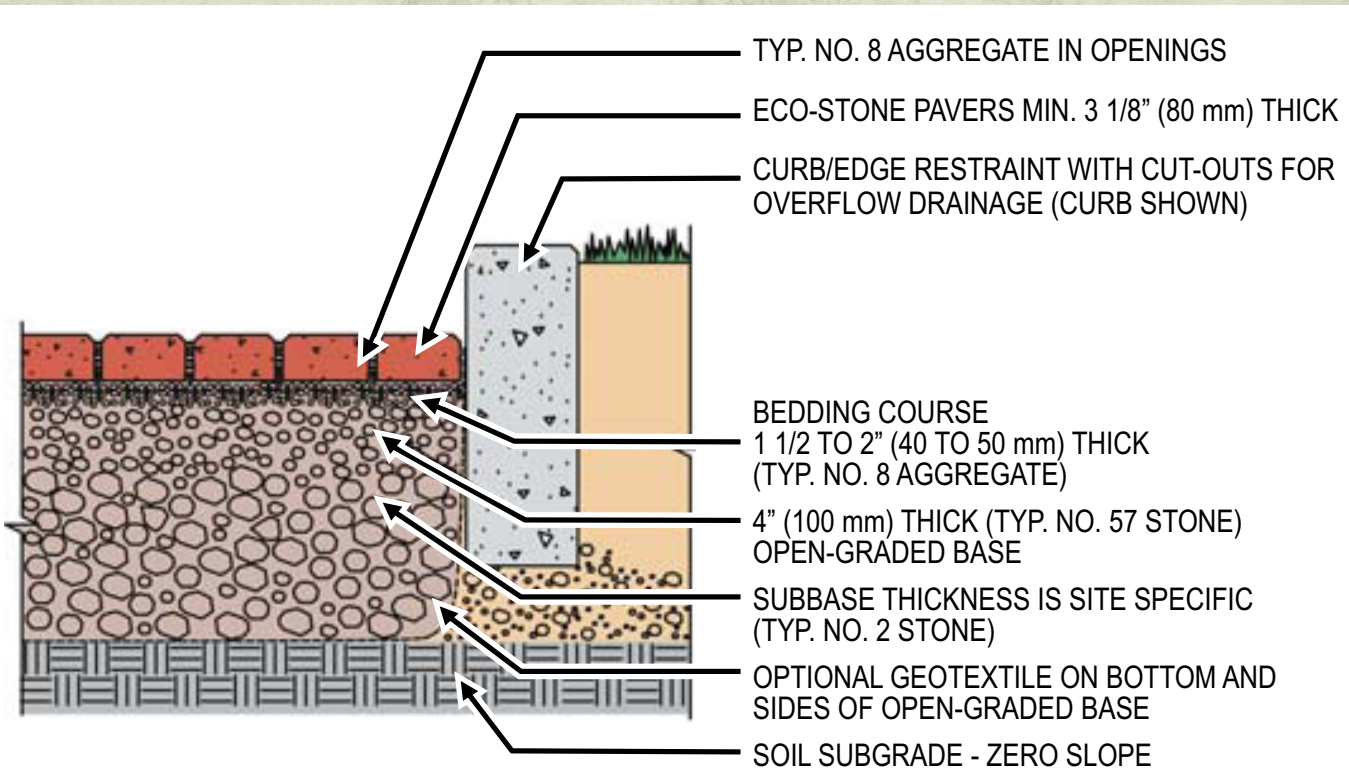
Borgert Products is proud to provide eco-friendly, versatile products for stormwater management and water conservation.

The possibilities are endless.

Terra Springs, Stillwater, MN - 2004

Reduce groundwater pollution

Hildebrand Ranch, Jefferson Cty, CO - 2010



Cross-section of Permeable Pavement - Full Exfiltration

Note: Base thickness / details are site specific. Consult an engineer.

Hildebrand Ranch, Jefferson Cty, CO - 2010

Payne Avenue Streetscape, St. Paul, MN - 2011

Odell Brewing Company, Fort Collins, CO - 2009

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Our Mission

Our mission is to produce premium interlocking concrete pavements and related products, with a responsibility to customer attention, employees and the environment.

Lifetime Guarantee

Borgert Products, Inc. provides a lifetime guarantee on the structural integrity of its paving stones to the original purchaser of the product for residential use. Material installed using our installation guidelines that proves defective will be replaced without cost. Color matching cannot be guaranteed and replacement labor is not included.

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Scan the code on your smartphone for instant access to our website

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EST. 1923

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