



*creating
sustainable
environments™*



GEOBLOCK® POROUS PAVEMENT SYSTEM

Environmental regulations that control and limit storm water runoff, reduce impervious surfaces, and increase green space have resulted in the growth of permeable pavements for traffic areas.

The Geoblock® Porous Pavement System offers support for all vehicular loadings and protects the grass from the damaging effects of traffic while allowing natural groundwater replenishment.

Examples where the Geoblock® system provided solutions for fire access requirements are illustrated in this case study summary.

GEOBLOCK® *fire access system*

CASE STUDY SUMMARY 1

test 1

THE CITY OF KENTWOOD • KENTWOOD, MICHIGAN • 1994

GEOBLOCK® SYSTEM PUT TO THE TEST

The City of Kentwood, Michigan put the Geoblock system through a worst-case scenario field test to measure performance and prove the system's capabilities.

Prior to testing, a series of less-than-ideal installation conditions were established:

- Five inches of sand subbase was installed, developing a base support capacity of only 2.8% CBR.
- Geoblock units were laid parallel (rather than perpendicular) to the direction of traffic.
- Edge restraints, typically used to help prevent block shifting until vegetation establishment, were not installed.
- Infill and vegetation were omitted—both which help anchor the system.
- The test area was not proof-rolled prior to load application.

The fire marshal directed a 22,400 kg (60,000 lb) ladder/pumper to drive onto the unfilled 3.9 m x 14.6 m (13 ft x 48 ft) Geoblock test pad, drop its outriggers and begin tests while geotechnical engineers monitored the system performance.

After a series of rigorous tests, the ladder/pumper stayed on the Geoblock pavement for a full hour.



Project Photos courtesy Price & Company

THE RESULTS

Under loading, inspection revealed only a 13 mm (1/2 in) deflection in the pavement system. After removal of the load, the Geoblock pavement rebounded to its original condition in less than one hour and the units were recovered for future use. As a result of this test and the system's performance, the City of Kentwood approved the Geoblock system for use on its fire access lanes.

case study 1

MICROSOFT CAMPUS • REDMOND, WASHINGTON • JANUARY 1996

THE CHALLENGE

As Microsoft Corporation's facilities expanded through the years, so did their need for fire access lanes at their campus buildings. Grassed access lanes rather than hard-surface paving were desired to enhance the aesthetics of the new buildings and grounds. The search for a reliable porous pavement system led them to the Geoblock system.

THE SOLUTION

At their Washington State Campus, 800 m² (8,600 ft²) of the Geoblock system was installed for permeable, grass fire access lanes around nine campus buildings.



Project Photos courtesy Soil Stabilization Products Co.

Previously, 840 m² (9,000 ft²)

installations were installed around three other campus buildings. At other locations, existing fire access lanes not wide enough to meet newer code, were expanded using the Geoblock system.

THE RESULTS

Implementation of the Geoblock system helps preserve the campus' natural look while providing the load support necessary to accommodate all emergency vehicles.



test 2

AT&T CORPORATE CENTER

BASKING RIDGE, NEW JERSEY • 1994

A worst-case scenario field test was also required by the Lyons Township Fire Department, New Jersey prior to approving the Geoblock system for a fire access lane at the new AT&T corporate convention facility.

A test pad was installed in front of the facility adjacent to a concrete block entrance-drive. Side restraints, sometimes used to anchor the pavement system, were purposely omitted. A few weeks later with only light grass established, the Lyons Township Fire Department was ready to begin the testing.

Under full pressure, firemen turned the hose directly on the Geoblock platform and proceeded to saturate the test pad. With water still standing on the pad, a 29,900 kg (80,000 lb) fire engine was backed over the saturated area, and with the outriggers lowered, was lifted off its tires. A series of tests was performed under full load and less-than-ideal conditions to determine the capabilities of the Geoblock system.



Project Photos courtesy Ragen Associates

THE RESULTS

After passing the tests successfully, the Fire Department approved the Geoblock system at the AT&T Corporate Center for fire access use.

case study 2

FRIENDS UNIVERSITY • WICHITA, KANSAS • NOVEMBER 1999

THE CHALLENGE

When officials at Friends University planned to beautify the exterior of the campus' newly renovated Davis Hall, it included removing the large driveway leading up to the building's main entrance. The university wanted to create a large open area, or pedestrian mall, where campus events could be held in front of the 110-year-old Davis Hall. The new design included a 23-m (76-ft) diameter paving stone mosaic at the Rose Window Plaza in front of the hall to replicate the pattern of the stained glass window. The finished concept would include sidewalks, flowerbeds and period lights.

Removing the frontage road and circle drive left the mall with diminished emergency vehicle access. The university sought an alternative to hard surface paving that would blend naturally with the green look of the campus while providing the necessary load support for maintenance and emergency vehicles.



THE SOLUTION

The Geoblock® load support solution was chosen to best complement the new pedestrian mall and paving stone design work. About 840 m² (9,000 ft²) of the Geoblock system was installed with an engineered base of sand and topsoil. Topsoil and a hearty bluegrass and fescue blend sod were placed in the cells of the Geoblock units.

THE RESULTS

The Geoblock system met the University's need for vehicular and pedestrian load support over grassed areas while complementing the aesthetically-pleasing entrance and protecting the grass from the harmful effects of the traffic.



Project Photos courtesy ASP Enterprises

case study 3

HOMESTEAD VILLAGE COMPLEX • BELLEVUE, WASHINGTON • OCTOBER 1997

THE CHALLENGE

Faced with the common problem of providing emergency vehicle access while maintaining desirable green space, architects and contractors building the Homestead Village Complex rejected traditional paving materials in favor of a permeable system.



Project Photos courtesy Soil Stabilization Products Co.

THE SOLUTION

The Geoblock® system was utilized in three areas at the apartment complex—two fire access lanes and one access road to the complex's water detention pond. In all, three areas totaling 280 m² (3,000 ft²) were installed in less than three days starting from site preparation through seeding.

RESULTS

After the system was fully vegetated, tests were performed by the local fire department and the Geoblock system was approved for use.



case study 4

INTERVET, INC. • DESOTO, KANSAS • APRIL 2002

THE CHALLENGE

The mall area in front of the pharmaceutical company's office building was designed with a series of intersecting concrete roadways for emergency access. The owner desired green space for visual appeal in the large adjacent areas. However, a typical turf-only surface would not reliably support the load of fire trucks and emergency vehicles.

THE SOLUTION

The Geoblock system was chosen for its aesthetic appeal, ease of installation, and load support capabilities. The Geoblock units were placed on a prepared base such that their tops were flush with the adjacent concrete roadways. Units were set in place, cut as needed to conform to site irregularities, infilled with topsoil, and seeded.



Project Photos courtesy ASP Enterprises

THE RESULTS

The landscape contractor and owner were very satisfied with the final solution. When tested under full load, less than one half inch of deflection was noted in the loaded areas.



PRESTO'S COMMITMENT

At Presto, we're committed to helping you apply the best solution to your fire access requirements. Rely on the leaders in the industry when you need a solution that is right for your application. Contact Presto or Presto's distributor/representative for assistance with your permeable pavement needs.

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