

Wal-Mart Parking Lot, Rehobeth Beach, Delaware

Rehobeth Beach is situated along the Atlantic coast just north of the mouth of the Chesapeake Bay. When the shopping center owner needed to expand parking behind a Wal-Mart in 2002, there wasn't sufficient space for the parking lot and a separate detention pond. PICPs combined the two functions. PICP enabled partial exfiltration from the base to the soil, with backup from perforated pipe and surface drains for saturated conditions from heavy rainstorms.

Like many of the projects shown in this brochure, PICP at this Wal-Mart was mechanically installed. Mechanical installation requires that the pavers be manufactured in their final laying pattern, stacked, and delivered to the job site for installation by specialized equipment. The equipment includes a clamp that grabs a stacked layer of pavers (about a square yard or square meter) and places each on the screeded bedding material. After placing a layer, the machine operator returns to the stack to grab and place the next. With each layer only taking about 20 seconds to place, paving production rates can be increased as much as five times compared to manual installation.

A 2003 study of surface infiltration by North Carolina State University of this parking lot and several other permeable interlocking concrete pavement sites indicated a surface infiltration rate of 1000 in./hour (25 m/hr) using a modified double ring infiltration test equipment (2). This is considered excellent for new permeable pavements.

Typical cross-section:

3¹/₈ in. (80 mm) thick
permeable interlocking
concrete pavers
3 in. (75 mm) ASTM No. 8
crushed stone
6 in. (150 mm) ASTM No. 57
crushed stone
Geotextile

Subgrade:

Sandy soil

Designer:

Davis Bowen & Freidel
Engineers
Milford, Delaware

General Contractor:

A.P. Croll & Son
Georgetown, Delaware



About 40,000 sf (3,716 m²) of PICP eliminated the need for building detention pond when a parking lot was expanded behind a Wal-Mart shopping center.



The bedding layer of No. 8 stone is screeded or smoothed to receive mechanically installed PICP.



A clamp on specialized mechanical installation equipment grabs a layer of pavers for placement on the bedding. The pavers are compacted into the bedding layer, the openings and joints filled with the bedding material and compacted again to create interlock among the pavers.