

PICP Systems Infiltration Guidelines & Testing

Interlocking Concrete Pavement Institute (ICPI) Recommendations For Testing & Maintenance:

- New installations are expected to meet a minimum infiltration rate of 100 in/hr in accordance with testing meeting ASTM C1781 testing standard.
- Test every site (every site varies) twice per year for accumulated sediment and how it affects maintaining infiltration rate of 100 in/hr.
- Check the site immediately after a rain storm - if more than 20% of the surface shows ponding, check infiltration rates in these areas using ASTM C1781.

ASTM C 1781: Drain Time, Surface Infiltration Rate and Cleaning

This table indicates the relationship between the time for the water to drain and the calculated surface infiltration rate. Most PICP installations will require two or three tests on clogged areas to determine the infiltration rates. These values should be averaged and then compared to the table on the right.

If infiltration rates are below 20 inches (508 mm) per hour, the surface should be cleaned. Users of C 1781 should be advised that water will take 30 to 60 minutes to completely infiltrate; users may want to conduct other inspections for maintenance while waiting for the test to run its time course.

| Seconds to Infiltrate 40 lb (18g) water | Minutes to Drain | Approximate Surface Infiltration Rate in/hr (mm/hr) | | |
|---|------------------|---|---|-----------------------|
| 30 | 0.5 | 1,000 (25,400) | ↑ | |
| 60 | 1 | 600 (15,240) | | Okay |
| 100 | 1.7 | 360 (9,144) | | |
| 200 | 3.3 | 180 (4,572) | ↓ | |
| 360 | 6 | 100 (2,540) | | Clean before it clogs |
| 450 | 7.5 | 80 (2,032) | ↓ | |
| 900 | 15 | 40 (1,016) | | |
| 1,800 | 30 | 20 (508) | | Clean NOW |
| 3,600 | 60 | 10 (254) | | |



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SEK-Surebond's PICP Joint Stabilization Testing

PermChip & PermStik™ Infiltration Testing

Performed By: Chicago Testing Laboratory, Inc.
Test Location: St. Charles, IL
Test Date: May 22, 2018
Test Standard: ASTM C1781
Pavers Used: 3.125" Pavers
Joint Infill Material: PermChip: Sunset Red, Saturn Tan, Stormy Gray & Eclipse Black
Stabilizer: SB-1000 PermStik™ PICP Chip Stabilizer
Specifics: Testing was performed on both stabilized & un-stabilized (loose) PermChip



Results Summary:


Both Unstabilized PermChip and **Stabilized PermChip** with **SB-1000 PermStik** tested well above minimum target of 100 in/hr infiltration rate. Both are likely to test similarly on all installations, regardless of region or circumstances, if PICP installation specifications per the ICPI are followed.



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SEK-Surebond's PICP Joint Stabilization Testing

PermChip & PermStik™ Infiltration Testing Results

| | Test Location (From Center of Tube to NE Corner of Respective Block System) | Location ID # | Type of Paving Unit | Pre-Wetting Time (s) | Weight of Water (lb) | Inside Infiltration Ring Diameter (in) | Time of Infiltration Test (s) | Infiltration Rate (in/hr) | |
|------------------------|--|---------------|------------------------|-------------------------|-------------------------|---|-------------------------------------|------------------------------|--|
| PERM CHIP UNSTABILIZED | 18.90" S, 20.35" W | 1 | Sunset Red | 12.6 | 39.90 | 11.75 | 55.3 | 663.5 |  Okay |
| | 61.15" S, 20.35" W | 2 | Saturn Tan | 19.6 | 39.95 | 11.75 | 72.9 | 503.6 | |
| | 113.40" S, 17.15" W | 3 | Stormy Gray | 11.2 | 39.95 | 11.75 | 59.8 | 613.9 | |
| | 146.40" S, 26.40" W | 4 | Eclipse Black | 22.5 | 39.55 | 11.75 | 69.8 | 520.7 | |
| PERM CHIP STABILIZED* | 18.60" S, 20.60" W | 5* | Sunset Red | 23.7 | 39.65 | 11.75 | 69.9 | 521.3 | |
| | 58.40" S, 20.60" W | 6* | Saturn Tan | 24.0 | 39.50 | 11.75 | 84.8 | 428.0 | |
| | 110.60" S, 16.80" W | 7* | Stormy Gray | 27.7 | 39.50 | 11.75 | 140.3 | 258.7 | |
| | 162.90" S, 16.80" W | 8* | Eclipse Black | 17.5 | 39.65 | 11.75 | 74.0 | 492.4 | |

*Locations 5 through 8 were stabilized with SB-1000 PermStik PICP Chip Stabilizer



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