

LABORATORY SERVICES REPORT

Report Number: 82231182.0001
Service Date: 06/20/23
Report Date: 06/28/23



700 NE 55th Ave
Portland, OR 97213-3150
503-659-3281

Client

Western Interlock Inc
Attn: Landon Pegg
10095 Rickreall Rd
Rickreall, OR 97371

Project

#Western Interlock Lab Testing 2023
10095 Rickreall Road
Rickreall, OR 97371

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Summary: Terracon representatives performed ASTM C1781 – modified to simulate field installation in a laboratory environment – on pavers and aggregates provided by Western Interlock. One paver installation pattern provided by the client was tested for water infiltration utilizing the Roma Stone paver blocks.

Modifications to ASTM C1781: ASTM C1781-18, the Standard Test for Surface Infiltration Rate of Permeable Unit Pavement Systems, is intended to be performed as a field test on previously installed, in-situ permeable unit pavement surfaces. As no previously installed surfaces composed of Western Interlock’s Roma Stone pavers were available for testing in strict accordance with C1781, a simulated installation was created in the Terracon laboratory (see Test Apparatus and Preparation).

Limitations: As this testing was not performed on materials installed on subgrade, the influence of individual site conditions on the infiltration rate as determined by testing the laboratory-constructed system cannot be directly inferred. We recommend that if drainage of a site’s subgrade – whether native or installed – are of concern, field infiltration testing be performed to determine a realistic inches per hour infiltration rate for installation of Western Interlock pavers on that site. The effects of sedimentation over time on the infiltration rate is outside of the scope of this testing.

Test Apparatus and Preparation: The tests were performed on a paver surface installed within a wood frame. The frame’s interior dimensions were a length of 22½”, a width of 22½”, and a height of 14¾”. A grid of woven steel mesh with openings approximately 4.75 mm square was securely attached to the base of the frame, allowing material to be retained inside the frame while allowing water to pass out. On top of the steel mesh, a 4” layer of open-graded 1.5” ballast rock was placed and compacted by hand tools. The next layer was a 4” depth of open-graded 1” drain rock. It was similarly hand-installed and compacted. Atop this, a 1” layer of ¼” - #10 levelling material was placed. Finally, the selected pattern was put in place. Levelling course material was then swept into the gaps between the pavers and between the pavers and the frame.

Test Process: As per ASTM C1781, an impermeable ring was sealed to the paver surface with plumber’s putty. The interior diameter of the ring was 11.75”, and it was composed of metal. The surface was then pre-wetted with 8.0 lbs of municipal tap water, with the infiltration time noted to determine the mass of water to be used in the actual testing. In all cases, the infiltration time of the pre-wetting mass of water was less than 30 seconds, and so, per ASTM C1781, 40.0 lbs of tap water was utilized for the three infiltration sub-tests performed.

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Test Results: The Roma Stone pattern was pre-wetted, then tested three times for infiltration. The time elapsed and infiltration rate (in inches per hour) for each sub-test are shown, as well as the average values for the installation pattern. Inside ring diameter and water masses are noted in Test Process.

Western Interlock; Roma Stone Installation Pattern Provided by Client

Pre-Wetting Elapsed Time: 18.14 Seconds

	<u>Elapsed Time</u>	<u>Infiltration Rate</u>
Subtest 1:	39.38 seconds	933 inches per hour
Subtest 2:	38.32 seconds	959 inches per hour
Subtest 3:	36.98 seconds	994 inches per hour
Average:	38.22 seconds	962 inches per hour

Services:

Terracon Rep.: Mike Baker

Reported To:

Contractor:

Report Distribution:

(1) Western Interlock Inc, Landon Pegg

Reviewed By:

rvw2: tat

Mike Baker

Laboratory Supervisor

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

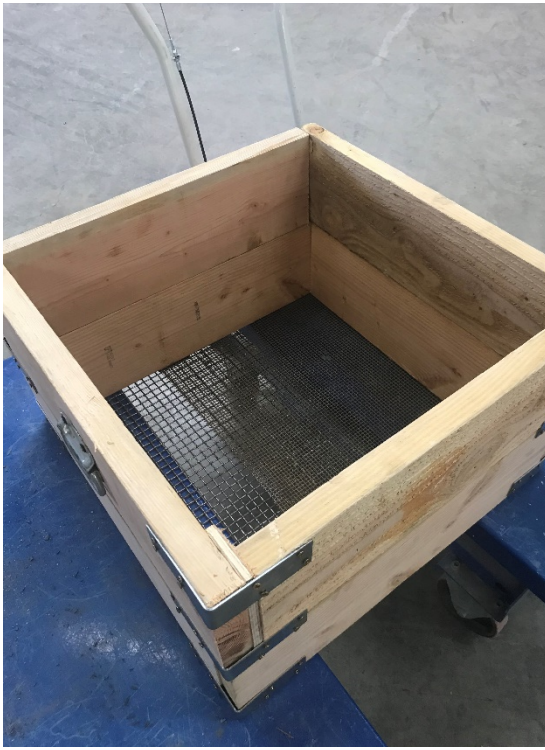


Photo #1 Empty Frame



Photo #2 Frame with Lower Ballast Layer



Photo #3 Frame with Upper Ballast Layer



Photo #4 Frame with Leveling Coarse



#Western Interlock Lab Testing 2023	Site Plan: Frame Setup	 700 NE 55th Ave Portland, OR 97213-3150 503-659-3281
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	Scale: Not to Scale	



Photo #5 Roma Stone as Installed



Photo #6 Roma Stone as Prepped (Pre-Test)

#Western Interlock Lab Testing 2023	Site Plan: Park Permeare, Running Bond	
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