

Water Displacement Test Report

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There is not an industry-recognised methodology that specifically defines how to measure the rate at which surface water is displaced from raised external paving systems. In the absence of specific guidance, Ryno developed a test procedure designed to simulate the build-up of surface water, and measure the speed at which it was displaced. The test was conducted both with and without the use of the surface tension drainage device, enabling comparison of its impact on water displacement performance. The methodology and results are detailed below.

Procedure:

- The test was conducted indoors at an ambient temperature of approx. 20 degrees, away from direct sunlight.
- A single 600x600x20mm paving tile was used as the test area.
- The paving tile was set on a completely level surface, within a watertight containing 'tray', and placed on supporting pedestals and rails; replicating a roof terrace installation.
- Test 1 incorporates standard paving spaces on the 4 corners of the tile, representing a typical Rail System installation
- Test 2 incorporates Drainage Spacers on the 4 corners representing installation of the Rail system with the drainage spacer
- A measured volume (7.6 litres) of water is slowly and evenly distributed over the whole surface of the tile, representing rainfall over the paved area.
- A wet film thickness gauge was used to measure the depth of water on the surface of the tile every 10 minutes, in 5 places: the 4 corners and the centre of the tile.
- Results for each location are recorded every 10 minutes for an hour. The results of the 5 areas were averaged and recorded in the results table.

Results:

Sample	Timestamp Hr:Min	Surface water depth (microns)	% of water displaced from 00:00
Standard 4mm spacer	00:00	1400	0%
	00:10	1320	6%
	00:20	1260	10%
	00:30	1220	13%
	00:40	1220	13%
	00:50	1140	19%
	01:00	1140	19%

Sample	Timestamp Hr:Min	Surface water depth (microns)	% of water displaced from 00:00
Drainage Spacer	00:00	1340	0%
	00:10	480	64%
	00:20	274	80%
	00:30	239	82%
	00:40	169	87%
	00:50	41	97%
	01:00	25	98%