

WATER DROPLET TEST FOR ABSORPTION AND SURFACE PROFILE EVALUATION

OVERVIEW

The Water Droplet Test determines how readily a concrete surface absorbs water. Absorption rate is an indicator of porosity, surface profile, and presence of contaminants such as oils, sealers, curing compounds, or densifiers. A properly prepared concrete surface should allow water to wet out and absorb at a predictable rate.

Surface Requirements

- Test only on clean, bare concrete.
- Remove dust, coatings, curing compounds, adhesives, and sealers.
- Surface must be dry prior to testing.

How to Perform the Test

- Place several small droplets of clean water on the concrete surface (coin-sized).
- Observe the water behavior for 60 seconds.
- Note whether the droplet absorbs, spreads, or beads.
- Perform tests in multiple locations, especially in areas where contamination is suspected.

Interpretation of Results

- Rapid absorption (within 10–20 sec); High porosity; May experience outgassing, consider primer application.
- Moderate absorption (20–60 sec); Acceptable porosity.
- Slow absorption (>60 sec); Additional mechanical profiling recommended.
- Water beads or remains on surface; Contamination/sealers present; Degrease, grind, or remove contamination.

Why It Matters

- Ensures the coating can penetrate and bond to the substrate.
- Identifies sealants, oils, or densifiers that must be removed.
- Helps verify that concrete has the proper CSP (Concrete Surface Profile).

Best Practices

- Perform test immediately after surface preparation to verify results.
- Document locations and results for project records.
- When beading occurs, mechanically abrade the surface and retest.
- Use in combination with other substrate evaluations: pH, moisture testing, Mohs hardness, and CSP assessment.