

TESTING ENVIRONMENTAL FACTORS & EXPOSURE USING MOCK-UPS

OVERVIEW

Before full-scale resinous coating installation, creating a mock-up allows evaluation of environmental effects, substrate conditions, and exposure factors on coating performance. Testing ensures the chosen system will meet adhesion, cure, chemical resistance, gloss, and slip-resistance requirements under actual site conditions.

Purpose of Mock-Ups

- Evaluate coating behavior under temperature, humidity, and airflow conditions.
- Verify adhesion to substrate and compatibility with primers or moisture mitigation systems.
- Assess appearance, color, and texture.
- Test chemical and mechanical resistance before large-scale application.
- Identify potential defects such as blistering, delamination, amine blush, or uneven cure.

Environmental Factors to Test

Chemical Exposure: Verify chemicals used in environment don't damage coating

Traffic: Assess traffic, use and wear to determine coatings functionality.

UV Exposure: Assess yellowing, color retention, and gloss stability

Moisture Vapor Emission: Measure slab RH/MVER; verify performance with primers or mitigation systems

Mock-Up Preparation

1. Substrate Selection: Use the same type and condition of substrate as the actual job site.
2. Surface Preparation: Prepare substrate using intended method (grinding, shot-blasting, moisture testing).
3. Coating Application: Apply coatings exactly as planned for the project, including primers, basecoats, accelerators, or anti-slip additives.
4. Environmental Monitoring: Record temperature, RH, and airflow during application and cure.
5. Curing & Inspection: Allow full cure, then evaluate adhesion, gloss, color, chemical resistance, and texture.

Evaluation & Documentation

- Record all environmental conditions, materials used, and application techniques.
- Document any defects or deviations and corrective actions taken.
- Use findings to adjust product selection, mix rates, or installation methods for the full project.
- Retain mock-up for owner approval, QA/QC verification, and field reference.

Best Practices

- Conduct mock-ups early in project planning to allow adjustments.
- Test under the full range of anticipated site conditions, including cold, heat, moisture, and UV.
- Involve all stakeholders (owner, contractor, applicator) for approval.