EVALUATING SLABS FOR MOISTURE MITIGATION NEEDS

OVERVIEW

Accurately determining whether a concrete slab requires a moisture mitigation primer is critical to preventing coating failure. Moisture movement within concrete can vary by age, location, construction method, and environmental conditions. Installers must base decisions on test results, slab history, and visible conditions, not assumptions. Proper evaluation ensures that coatings are applied within their moisture tolerance limits and that long-term adhesion and film integrity are maintained.

Key Indicators That Mitigation May Be Required

- MVER above coating manufacturer limits.
- In-situ RH values exceeding 75–85% (or product limits).
- Slab-on-grade construction without underslab vapor barrier.
- Efflorescence or mineral deposits visible on surface.
- Darkened concrete indicating moisture saturation.
- History of flooring failures or adhesive breakdown.
- Hydrostatic-related dampness or seasonal moisture fluctuations.

Evaluation Process

1. Review project history: assess age, vapor barrier presence, and drainage.
2. Conduct surface inspection: look for efflorescence, damp spots, discoloration.
3. Perform moisture testing: RH and/or $CaCl_2$.
4. Check environmental conditions: humidity, dew point, temp swings.
5. Determine moisture source: vapor emission vs. bulk water.

When Moisture Mitigation Is Required

- RH > manufacturer limit.
- MVER above standard epoxy tolerance (usually >3–5 lbs).
- No vapor retarder present on slab-on-grade.
- Coatings require <80% RH or <5 lbs MVER.

Best Practices

- Use mitigation primer as insurance on questionable slabs.
- Document all test results before application.
- Avoid installing over slabs with active water intrusion.