UNDERSTANDING MOISTURE VAPOR EMISSION (MVE) & VAPOR TRANSMISSION

OVERVIEW

Moisture vapor emission refers to the rate at which water vapor migrates from a concrete slab into the environment. This upward vapor movement occurs naturally as slabs dry or respond to humidity and temperature differences. Excessive MVE can cause blistering, delamination, haziness, or improper curing of resinous flooring systems. Understanding how vapor travels through concrete is essential for selecting appropriate primers, mitigation systems, and coating procedures.

How Moisture Vapor Transmission Works

- Concrete contains capillaries and pores that allow moisture to migrate upward.
- Vapor movement is driven by vapor pressure differentials between slab interior and ambient air.
- Warmed concrete increases vapor drive, accelerating emission rates.
- High humidity slows vapor escape, while low humidity accelerates it.
- Solvent-based coatings may trap vapor, causing pressure beneath the film.

Why It Matters to Installers

- High MVE can break adhesion bond, cause osmotic blistering, or produce amine blush.
- Coatings not designed for high MVE will fail prematurely.
- Moisture mitigation primers may be required based on test results.

Best Practices

- Perform MVE testing before installation.
- Evaluate ambient conditions (temp, RH, dew point).
- Use moisture mitigation primers when emissions exceed product limits.
- Follow manufacturer MVER/RH thresholds.