

# Moisture in Concrete Flooring Systems

Moisture-related issues in concrete flooring systems can be costly if floor coverings and coatings do not meet their performance criteria or fail. CTLGroup assists clients in avoiding moisture-related problems by providing concrete floor designs, construction/installation troubleshooting, guidance, and materials testing. In the event that floor problems do occur, CTLGroup is experienced in performing forensic investigations to establish the root cause and providing recommendations on how to remediate the problem.

## Moisture Management

A common performance issue with applied flooring materials can be traced to excessive Water Vapor Transmission (WVT). CTLGroup utilizes ASTM test method E96, as well other techniques, to evaluate the permeability of coatings, floor coverings, sealants, and flooring adhesive materials. Results provide the WVT of the applied materials, but not the moisture content of the concrete floor slab.

To measure the in situ moisture condition of the slab prior to flooring material placement, CTLGroup recommends the use of a quality moisture testing method such as the Wagner Rapid RH® Concrete Moisture Test System.

## Design Development

At the design stage, CTLGroup develops and reviews specifications to meet owners' needs. Our engineers and scientists:

- Conduct pre-construction meetings
- Observe slab placement and verify conformance
- Recommend sawcut joint timing and depth
- Monitor slab drying

## Construction Services

Proper slab performance depends on proper construction methods. To help construction crews build slabs right, CTLGroup experts:

- Evaluate and recommend slab thickness and reinforcement plans
- Plan joint layouts and moisture-resistant details
- Develop and review specifications
- Review concrete mix designs
- Provide moisture-control options

## Forensic Services

When floor problems do arise, they often involve multiple parties – tenants, owners, architects and contractors – and require expert assistance to resolve. CTLGroup typically follows a four-step process when investigating problems, beginning with document review and proceeding through site inspection, material sampling and laboratory analysis. Synthesis of information obtained from this four-step process typically reveals the root cause of the problem.

