

THE DEVELOPMENT OF A GUIDELINE FOR THE EVALUATION OF CONCRETE SUBSTRATES, MOISTURE TESTING, AND THE SELECTION OF APPROPRIATE MOISTURE MITIGATION METHODS

ICRI Subcommittee 710-B, Moisture-Related Issues with Concrete Floor Finishes, part of ICRI Committee 710, Coatings and Waterproofing, has been charged with developing a process guide. This single guide is intended to be an outline of the decision-making processes encompassing the evaluation of any given flooring project. The scope of the guide will include restrictions and limitations posed by the selected finish flooring, the type of facility and its end-use requirements, the selection of an appropriate moisture test method, data collection and interpretation vis-à-vis the decision to mitigate, and how to evaluate available mitigation systems.

The following is an explanation of the purpose of the developing process guide. At the same time, this article also serves as a request to all within and outside of the flooring industry to provide input. Only through the collaboration and input of the many well-informed industry leaders will this guide be beneficial to all segments of the flooring industry.

OUR INDUSTRY

Few within our niche of professional individuals deal with style or color. Ours is a function usually hidden from all but the most curious. And yet our



knowledge and experience have the potential to save floor-covering users millions of dollars simply by minimizing the chances of floor-covering failure. Because of this potential impact, the flooring industry needs to be better—and more broadly—defined.

We believe that the flooring industry includes, but is not limited to, architects, designers, specifiers, owners and owner agents, general contractors, concrete contractors, facilities management, public agencies, and any associated trade groups representing individuals or companies within these sectors. Naturally, the guide (born within a sector of the flooring industry) should benefit all within the flooring and other allied industries. For those within the flooring industry, we encourage you to aggressively promote the guide during your everyday activities and to educate your contacts within those allied industries.

BACKGROUND

The annual cost of flooring-related failures as a result of adverse moisture conditions reaches well into the tens of millions of dollars. One rule of thumb proves true time and time again: the average replacement cost as a result of a flooring failure is four to five times the cost of the original flooring installation project. ICRI Subcommittee 710-B believes that simple changes in the approach to the average floor-covering installation project will result in a substantial decrease of the unnecessary costs associated with adverse moisture conditions.

These necessary changes replace the current reactive mindset with a proactive mindset. Our technical knowledge—gained during years of practice, study, and discussion—is immense, relevant, and practical. And yet our input is often ignored by those who can benefit from it the most.

We as an industry need to reach out following the ideas outlined below:

- Instill within the design and build communities the necessity for due diligence—that is, identify potential problems through appropriate testing;
- The use of reproducible moisture testing results, performed by trained and skilled technicians, satisfies the spirit and the intent of due diligence;
- Test data creates a trusted and primary base line while also providing the information necessary for the correct selection of appropriate mitigation systems;
- Provide the foreknowledge that even though a new or uncovered floor slab tests dry today, there is a very good chance that once the slab is covered with an impervious flooring material, changes in moisture may develop into an adverse moisture condition; and
- Proper foresight and preplanning includes predefined potential solutions depending on recorded test data.

MAIN GUIDE SECTIONS

- Moisture & pH Related Considerations—What creates an adverse moisture condition? What is the relationship between moisture, pH, and flooring failure?
- Moisture and pH Testing—Appropriate testing methods
- Data Collection and Reporting of Evaluation Results—What data to collect, how to document the data, and what data needs to be reported
- Interpreting Test Results—With data collected and reported, what does it all mean?
- Moisture and pH Mitigation Options—How to evaluate and select a mitigation system
- Performance Evaluation—Is there any good way to determine how a moisture mitigation system is performing?
- Warranties—Placing warranties in their proper perspective by identifying the exclusions
- References
- Definitions



- Appendix
 - ACI 201.1R-08, “Guide for Conducting a Visual Inspection of Concrete in Service”
 - ACI 201.2R-08, “Guide to Durable Concrete”
 - ACI 302.1R-04, “Guide for Concrete Floor and Slab Construction” (refer to Section 3.2.3)
 - ACI 302.2R-06, “Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials”
 - SSPC-SP 13/NACE No. 6, “Surface Preparation of Concrete”
 - SSPC-TU 10, “Procedures for Applying Thick Film Coatings and Surfacing over Concrete Floors”

SUBCOMMITTEE CONTACT INFORMATION

ICRI Subcommittee 710-B, Moisture-Related Issues with Concrete Floor Finishes, meets every 6 months at national ICRI conventions. The subcommittee is chaired by Lee Eliseian. If you are interested in helping produce this guide, please contact Lee at lee@floortest.com.

