FCI FLOOR COVERING Installer

Five Steps to Moisture Mitigation Success

The University of North Carolina (UNC) Health Care System's Hillsborough Hospital's construction plannin step process to address moisture issues in the concrete slabs.

PREV NEXT

January 19, 2017

Shane Richmond

Planning, it has been said, is "bringing the future into the present so that you can do something about it now." For the architect and owner of the University of North Carolina (UNC) Health Care System's Hillsborough Hospital, which officially opened its doors in June 2015, that approach would pay significant dividends. The Hillsborough Hospital construction planning team used a five-step process, which can serve as a template for other healthcare projects, to address moisture issues in their concrete slabs.

Step One: Include a Flooring Moisture Control System in the Project Bid.

A critical first step in the construction planning process for the Hillsborough Hospital was including a moisture control system for its 150,000 square feet of flooring in the original construction bid. Planning ahead for possible moisture issues, which is often overlooked in construction planning, resulted in significant savings of time and money as well as the elimination of countless headaches when high levels of relative humidity were identified in the hospital's slabs.

Factoring in possible issues with moisture in slabs during the bidding process is particularly important for healthcare projects because the stakes are so high for patients awaiting medical assistance. Advance planning enables moisture issues in slabs to be addressed sooner, which enables projects to be completed sooner—and allows medical professionals to begin addressing patients' needs sooner.

Step Two: Choose the Right Flooring Contractor.

It was important to hire a contractor who could both address any potential moisture issues and properly install the various flooring products specified for the project, for two reasons. First, testing for moisture across 150,000 square feet of flooring can be a daunting task. Second, four different types of flooring – sheet vinyl, vinyl tile, carpet tile and resinous flooring – were specified for the Hillsborough Hospital project. Each requires specific techniques for installation.

The answers to two questions can often help determine whether a flooring installation contractor has the right qualifications for a specific flooring project: Has the flooring contractor kept up with the latest moisture testing and moisture control systems through training and continuous education? Has the flooring contractor been factory trained or certified to install the flooring products that have been specified?

The flooring contractor selected for the Hillsborough Hospital was Vision Flooring, located in Mooresville, N.C. Vision Flooring has been in business since 1999 and is licensed in North Carolina, South Carolina and Virginia. The firm is headed by President Vickie Kindred. "We're a relationship contractor," she says, "bidding mostly on large commercial flooring projects with contractors we know."

Step Three: Correctly Test for Moisture at the Appropriate Time.

Kindred and her team worked backward from the date when the flooring was to be installed to determine when to begin testing the slab for moisture in order to keep the construction project on schedule. As a result, testing commenced in February 2014 and concluded that September.

In order to effectively test such a large area, the 150,000 square feet of concrete was divided into 10 sections. Probes were installed in each section every 1,000 square feet and the condition of the slab and the pace of the drying process were evaluated every two weeks.

Wagner Rapid RH Smart Sensor probes were used to test the relative humidity (RH) in the concrete. There are two primary benefits of these state-of-the-art probes, according to Kindred. “First, we knew, based on our previous experience, that the probes decrease the time it takes to measure moisture,” she said. “Also, each sensor comes with a National Institute of Standards and Technology (NIST) traceable factory calibration certificate, which ensures accuracy and alleviates the need for periodic calibrations.”

The results of the extensive Hillsborough Hospital testing indicated that the RH levels in the concrete slabs were higher than acceptable for the various floorcovering products being installed, pointing to the need for moisture mitigation.

Step Four: Ensure the Effective Use of the Right Moisture Mitigation System.

Once the moisture testing was complete, the Vision Flooring team began the moisture mitigation process by properly preparing the substrate in stages. This was done by shot blasting the substrate to a Concrete Surface Profile 3, which allows for the moisture mitigation system to “bite” or “grab” the substrate.

Vision Flooring selected the Ardex MC Rapid Moisture Control System to mitigate the moisture in each section of slab. It is a 100% solids epoxy system that is formulated to suppress excessive moisture vapor emissions in new or existing concrete. The system is warranted for use on slabs with RH readings up to 100% and dries quickly, allowing for priming in four hours.

“While there are a number of products to address moisture in slabs, we were confident that the Ardex product was right for the hospital, based on our extensive experience with it,” Kindred says.

After the sandblasting was complete, the dormant cracks and saw cuts in the slab were addressed with Ardex Ardifix rigid crack and joint filler. The MC Rapid hardening material was mixed into the resin using a low-speed drill and epoxy mixing paddle. It was immediately poured onto the slab and evenly spread with a short-napped roller. After drying for more than four hours, the slab surface was primed using Ardex P82 Epoxy Primer.

Importantly, in order to meet the highest safety standards, the mixing area was properly ventilated and all workers wore required safety equipment, including protective work suits, masks and goggles.

The moisture mitigation process, which began in September 2014, was completed the following February.

Step Five: Ensure the Slab is Properly Prepared for the Installation of Flooring.

The final step in the Hillsborough Hospital moisture mitigation project was the application of Ardex Feather Finish, a cement-based, self-drying finish underlayment. The product was applied using a smooth trowel to ensure both consistent coverage and a smooth surface to accommodate the various floorcoverings being installed.

An Important Lesson.

The lesson learned from the five-step approach of the Hillsborough Hospital project team is that the best moisture mitigation outcomes are likely to occur when planning ahead for possible moisture problems and recognizing the importance of hiring the right contractor. This contractor can use his or her skill sets and product knowledge to both conduct moisture testing and remediate the problem. Those who do will be rewarded with savings in time, money and headaches.

Shane Richmond is a Regional Manager at Fishman Flooring Solutions. He can be reached at shane.richmond@lfishman.com.