Treatments for Protecting, Enhancing & Maintaining
CONCRETE SURFACES
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Restoring Luxury

By Kerry V. Hacker

Poured gypsum concrete underlayments revitalize floors.

HACKER INDUSTRIES.

Contractors who renovate and repair floors often encounter the same obstacle: how to fix uneven, cracked, and damaged concrete slabs. Their goal is to find a cost-effective solution that transforms the existing concrete subfloors into a hard, smooth surface for finished floor coverings.

The team from the Ferchill Group faced this problem when it began restoring the historic Book Cadillac building in Detroit into a combination of hotel and luxury condominiums. The 84-year-old Italian renaissance-style hotel has enjoyed a colorful history and thus is historically significant. When the Book Brothers built it in 1924, it was the tallest building in Detroit and the tallest hotel in the world.

But recent times have not been so kind. The structure had been vacant for almost two decades. The interior floors were subjected to a great amount of abuse and years of neglect. Fires also heavily damaged many floors.

The current project is not only a historic moment for the hotel, but it also signifies the movement to accelerate the economic rebirth of Detroit. The highly anticipated restoration of this fabled hotel began in the summer 2006. It plans to open for business later this year.

Built in 1924, the Book Cadillac building in Detroit is being restored into a hotel and luxury condominiums. The interior floors were damaged while the building was vacant for almost 20 years.

Given the significance of their work, Marous Brothers and Jenkins Construction, joint general contractors on the project, realized that they had no room for error. They called in Joe Lia, president of DiLisio Contracting a.k.a Michigan Underlayments, who recommended Hacker Industries' FIRM-FILL 3310, a tough underlayment material that would revitalize the damaged and uneven concrete floors.

"For numerous reasons, it was the only product that made sense for the Book Cadillac restoration," says Lia. "The underlayment bonds directly with the concrete surfaces, and can be quickly, yet properly, installed."

In contrast to portland cement-based products, which often require extensive surface preparation, gypsum concrete floor underlayments simply require a dry, structurally sound subfloor before installation.

Creating a flat surface

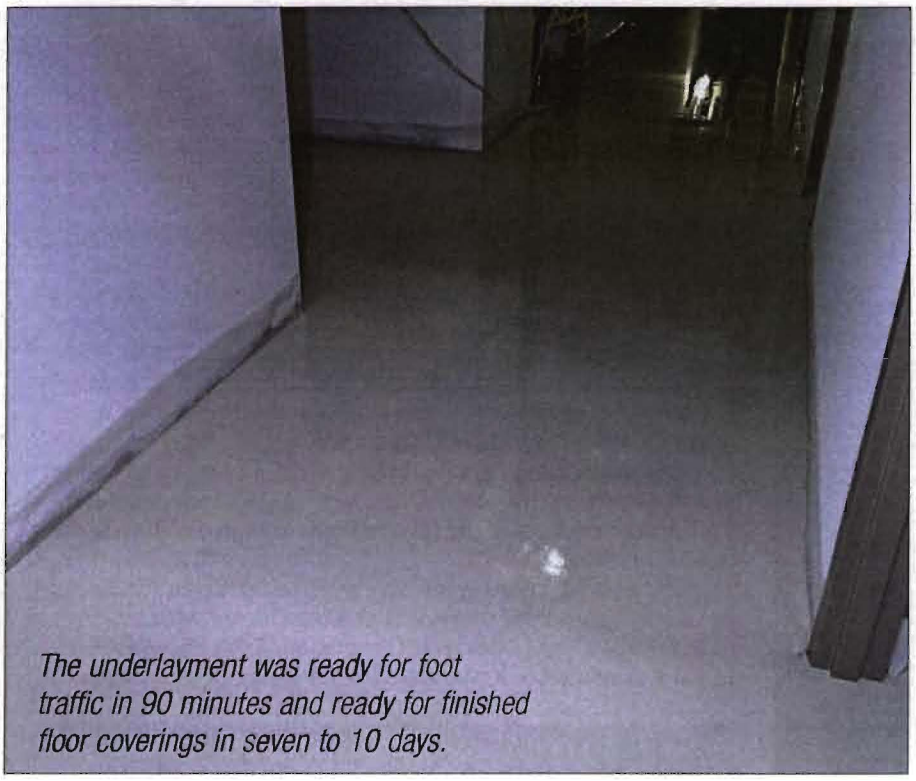
Lia selected the underlayment for two more reasons. In its hardened state, the product exhibits high compressive strengths of up to 3300 psi. And with its flowabilty, the product can be applied from feather-edge in transition areas to 3 inches thick in one lift. The final product creates a virtually flat surface upon which floor coverings can easily be applied.

A job of this size had many logistical obstacles. One of the main challenges was how to maintain product consistency while pouring the underlayment up 30 floors from a two-bag pump at ground level. Michigan Underlayments, with assistance from Hacker Industries, Inc., modified the pump and incorporated a modified 800-foot hose assembly to overcome the challenge of the tall building.

In all, Lia's crew poured 425,000 square feet of underlayment over the existing concrete floors to alleviate problem areas that were uneven and damaged. To compensate for the ⅜-inch steel plates on the subfloor, the average thickness installed throughout the building was 1¼ inches. Mixed with sand and water at the jobsite, Lia's crew poured more than 17,000 square feet of underlayment a day. The crew also regularly performed slump tests to meet quality assurance standards.

Tight schedule

The project had a fast-track schedule. The underlayment had a rapid set time. This allowed light construction traffic in the area within hours, when the site is properly ventilated and temperatures are maintained above 50° F. In many areas, the general contractor found that the underlayment was ready for foot traffic within 90 minutes and was ready for the finished floor coverings to be installed in seven to 10 days. Many favor the quick cure time of poured gypsum concrete when compared to concrete installations, which can require up to 30 days to fully cure.



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Crews poured 425,000 square feet of underlayment, or more than 17,000 square feet per day, over the existing concrete floors.

To address sound control issues on the eight stories dedicated to high-end condominiums, the crew installed a sound control mat to reduce impact noise between floors. The sound control mat was topped with 1 inch of the gypsum floor underlayment, creating a mass/isolation floor system, two of the most important elements in controlling sound transmission.

Fire resistance was another benefit the engineers gained by using this poured gypsum concrete underlayment. FIRM-FILL Gypsum Concretes are an integral part of over 84 UL fire ratings with one-, two-, and three-hour ratings over wood, concrete, and corrugated steel decks.

"I don't know of any other product on the market today that could be poured so fast and at such a competitive price point, and accomplish the desired outcome" says Lia. **CS**

Kerry V. Hacker, vice president of Hacker Industries Inc., Newport Beach, Calif., is involved with ASTM, the National Association of Home Builders' National Council of the Housing Industry–Suppliers 100, and serves on the board of the Association of the Wall and Ceiling Industry. Visit www.hackerindustries.com, *or telephone 800-642-3455 for more information.*