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Let The Blue Sky Shine in The Floor!

Eneref Institute reports how discolored concrete floors can be repaired by polishing to a shine in Ag-Pro's showrooms in Arkansas and the Monroeville convention center in Pittsburg, PA.

Exhibitors have long known that a spotless floor helps customers feel better about their facility space. But when a new facility flooring system comes along that shines beautifully, is easy to maintain and is environmentally friendly, the industry takes notice.

"You can actually walk up to our showroom and see the blue sky shining in the floor. That's how shiny this is," says Richard Smith, general service manager of the Ag-Pro Dealership, speaking about his new DiamondQuest polished concrete floor. Ag-Pro is a service-oriented John Deere dealer with seven Arkansas locations.

Polished concrete flooring is a relatively new technology that was introduced to the industrial facility market several years ago by QuestMark Flooring, Canonsburg, PA, with their DiamondQuest product line. More recently, the flooring technology has found its way into locations as diverse as grocery stores and airplane hangars. Particularly because of its distinctive look and easy maintenance-it's as bright and shiny as a marble floor - DiamondQuest polished concrete is now specified on the floors of several con-

vention centers as well.

Initially, when polished concrete was specified in industrial buildings, it was seen as an affordable upgrade to a straight, bare concrete floor. Traditional straight concrete floors in warehouses need constant maintenance to stay clean and dust free. Advances in con-

crete floor polishing from QuestMark created a new floor that was far easier to keep clean. More recently, the retail industry has discovered the benefits of polished concrete for which a sparkling clean floor is crucial to sales.

Besides being good for the environment, ease of maintenance was a major reason the Ag-Pro John Deere showroom made the decision to polish their straight concrete floor.

"DiamondQuest is a lot easier to maintain because we sweep it, and it just stays clean. We periodically buff it, but that's to put the original high luster back on it," says Smith.

Cleaning and maintaining a bright shine on a polished concrete floor costs as little as .09 to 25 cents per square foot, depending on the level of shine. Tile is substantially more labor inten-



The reflective surface of polished concrete improves ambient lighting at Ag-Pro's John Deere showroom

sive to clean and therefore costs several times more to maintain as well. And specifically because of the low maintenance cost the payback for installing polished concrete is recovered quickly. It's especially cost-effective when the tile or carpet on top of the concrete needs to be removed and replaced.

While the low cost of maintenance is as attractive as the floor itself, many facility managers are proud that the floor is considered environmentally friendly. According to The Eneref Research Institute, both the installation and maintenance of polished concrete floors have positive environmental benefits. They contribute to potential LEED points in at least three categories. In the Energy and Atmosphere category, polished concrete could contribute to LEED points because they don't employ VOC materials and because the sheen actually increases the room's ambient light. In the Materials and Resources category, the technology increases the life span of the already

Ag-Pro wanted.

"It is a lot easier to clean because the DiamondQuest actually hardens the floor, so that oil and water can't soak in," says Smith. "Sweeping the floor is just about all we have to do to keep the floor shining."

The large floor was completed in just a day, and because there was no waiting for materials to cure, the floor was immediately accessible after the process was completed. In fact, the sales floor was never really interrupted during the flooring process.

The Monroeville Convention Center in Pittsburgh, PA, reports a similar experience with their new polished concrete floor. The Center was originally a furniture warehouse with its existing concrete floor hidden under carpeting. Open in May of 2009, the Center decided to renovate the floor their first year of operation. Fran Driscoll, director of engineering for the Davidson Hotel Company which owns the building,

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existing concrete floors. And Innovation in Design may offer a third potential credit.

QuestMark began the process by working on Ag-Pro's existing straight concrete floor. DiamondQuest is a multi-step fine grinding process that uses specialized high-tech resin diamond tooling.

The concrete floor was first prepared by removing buildups of glue or coatings. Then, special liquid chemical densifiers were applied to ensure the floor was hardened resist stains. Polishing the floor with increasingly finer diamond grit tooling ultimately produced the high shine floor surface

says that in the 10 years he ran the previous exhibition center building, he replaced the carpet at least twice. Driscoll says, "You ask yourself, 'do we want to just keep replacing carpeting?'"

The Monroeville Convention Center is 12 miles outside downtown Pittsburgh and has room for 500 trade show booths. The north hall has 44,000 square feet of assembly space with 32' ceilings. The south hall has 35,000 square feet of space. A separate 12,000 square feet of space is used for break-out rooms.

During shows that cater to the construction industry, large trucks move in and out of the building, damaging the

carpet. Heavy machinery and construction equipment, like bulldozers, tend to rip carpet, especially with tight turns and placement maneuvers. During food shows, foodstuff and waste permanently stain and stick to the carpet. And over time, the constant set-up and take-down was destructive to the floor.

Before the polished concrete floor was installed, Driscoll used carpet squares to cover up tears or stains on the carpeted floor. But soon the individual carpet squares exposed their seams. Besides spoiling the appearance of the floor, carpet seams can gather dust and mold. And carpet is damaged by liquids, creating further sanitation problems.

Now, with polished concrete, Driscoll says that during normal set-up and take-down, a riding scrubber follows behind large vehicles, cleaning up traces the vehicles leave behind. That way, the floor is kept clean even on inclement days when vehicles track in snow, road grime and mud.

At first, Driscoll considered replacing the Center's carpet with tile, but the "long-term maintenance cost" of tile shaped his decision for choosing the DiamondQuest polished concrete floor instead.

The environmental benefits of polished concrete flooring are two fold. The concrete material often already exists under carpet or tile, making application of the floor especially environmentally green. And the polishing process itself is considered green. The new floor is polished without any environmentally harmful chemicals. The low-VOC (Volatile Organic Compound) emitting cement surface is ideal for environmentally conscious facilities.

Driscoll, a 30-year employee with the Monroeville Convention Center, says, "The polished floor is ten times easier and quicker to clean up. It's just

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The Convention Center is seeking LEED certification. Along with the DiamondQuest floor, the Center installed an HVAC system that requires 20% less energy than conventional systems and a white roof that reflects sunlight, thereby keeping energy costs down.

Ag-Pro John Deere also finds that easy maintenance is the primary benefit of their new polished concrete floor. Rubber tire marks from the John Deere equipment were a particular problem on the floor of the showroom before the new installation, says Ag-Pro’s Smith.

“Before, we had to have something sitting under rubber tires because the tire would stain the concrete. That’s not a problem anymore,” Smith reports.

A polished concrete floor is espe-

cially safe for foot traffic for several reasons. First, the smooth floor eliminates high and low areas and rough spots. Second, the smoothness actually adds traction. That’s why the National Floor Safety Institute (NFSI) has certified DiamondQuest floors to meet the slip co-efficient of friction (SCOF) for safety.

The polishing process removed adhesives, paints, thin mil urethane coatings and epoxy coatings, leaving a lightly textured profile without corn rows, linear or circular tracks. This makes travel for material handling equipment easier because of a flatter and smoother floor - with no bumps at construction joints.

Successful public spaces expect the kind of foot traffic that requires a floor to be both tough and attractive, and

that is the primary reason Driscoll and Monroeville do not foresee going back to carpet. “Polished concrete is definitely the way to go in convention centers.”

Ag-Pro’s Smith, whose primary motivation for polished concrete was a path to low maintenance, was surprised by how durable the floor turned out to be.

“If it will hold up under the conditions that we put it in, it will probably hold up under anything,” said Smith. ●

This article is an excerpt of the future



Eneref report which assesses the impediments to building zero-energy urban

communities in the US. A companion film documentary, The Eneref Project, will seek to demonstrate to key decision-makers how zero-energy communities can be commercially viable.