Sanitary Flooring Solution: Polished Concrete

Because of its countless benefits and sustainable advantages, polished concrete flooring may soon become the common flooring technology for facility managers in the food manufacturing industry. Polished concrete is a trend in sanitary flooring that has recently captured the interest of facility managers of the grocery and restaurant industry, and is already the main stay of some industrial market sectors.

Chipotle Restaurant is one of the first national food chains to embrace polished concrete flooring; a technology that is cleaner, safer and more environmentally friendly than many other flooring options. HB Ives, an industrial manufacturer was an even earlier adaptor of the technology, who needed to retrofit the flooring in their New Haven, CT facility without interrupting their manufacturing schedule.

HB Ives, part of the $8 billion Ingersoll Rand Corporation, specified polished concrete on their factory floor last year. HB Ives is a supplier of high-end hardware and has shipped orders to everywhere from the Empire State Building to the Pentagon Building.

The polished concrete flooring technology was supplied by QuestMark Flooring, of Canonsburg PA, who installed the floor while the HB Ives plant was fully operational. According to HB Ives Production Manager Raymond Slaughter, about 50,000 square feet was renovated without interrupting manufacturing production because only a portion of the floor was worked during the 6:00AM to 2:30PM shift.

"We can't afford to shut down” says Slaughter. “In three days QuestMark was done, and we didn't stop working."

QuestMark developed the DiamondQuest flooring system which transformed HB Ives' existing concrete floor surfaces into a new floor with a stunning sheen and gave it the added ability to inhibit water or contaminants from penetrating the surface. Slaughter says "the DiamondQuest was the perfect complement to all the facility upgrades made over the last few years. It looks great."

While the application of polished concrete floors in the industrial manufacturing market sector is growing more common, it is certainly not limited to that sector alone. The Chipotle Restaurant chain now employs polished concrete in their front of house dining areas where the carpeting had been previously. In other parts of the restaurant Chipotle initially used stained and sealed concrete flooring, but over time the floor developed a dull look and became more difficult to maintain.

"Polished concrete has substantially improved our floor's sanitation in the restaurant's dining area", says Steve Henderson, Construction Manager for Chipotle Mexican Grill. Henderson says that polished concrete floors are specified in the front of house dining area for three reasons; they reduce the floor's long-term upkeep, they increase the floor's durability and they offer a more attractive aesthetic. In the back of house (kitchen's and rest rooms) Chipotle installs quarry tile.

Henderson reports that of the various vendors he considered, he found the DiamondQuest polished concrete the most durable. "We’re very satisfied with the application. It's very cleanable," says Henderson.

Like many retailers, Chipotle has seen creeping increases in construction costs. As a result, the company is revisiting their interior dining room specifications looking for equal or alternate options. However, since polished concrete flooring needs "half the maintenance, and has a longer lasting finish, " Henderson says, the installation cost may be easier to justify than some other building products.

And polished concrete fits into Chipotle's sustainability thinking. Chipotle was "green" long before it was popular to do so, serving sustainably grown and naturally raised foods from farms that respect the animals, the land, and the farmers. Chipotle, which opened its first restaurant in 1993 and currently operates more than 830 locations, serves good quality Mexican cuisine including burritos, tacos and fresh salads. According to Chipotle's Chairman Steve Ells, he founded the restaurant with the idea that food served fast did not necessarily have to be a typical fast food experience.

Chipotle now has four restaurants for which they are seeking LEED certifications. "It's the kind of thinking that is just part of our DNA," says Chris Arnold, Chipotle's Communications Director.

Manufacturers have been quick to pick up on this trend because polished concrete floors cost half as much to maintain as vinyl composition tile (VCT). VCT requires the laborious process of stripping the old wax off and then hours of buffing and shining the new wax.

"Over half of the floors we install are going from tile to polished concrete," reports Joseph Urbanic, President of QuestMark Flooring, who has long been the nation's leading polished concrete flooring company.

One reason that polished concrete is so sanitary is that the polishing technology itself adds to the sanitary benefits of the floor. The process is a multi-step fine grinding procedure that uses specialized high-tech resin diamond tooling, thereby reducing the surface area, or pores, that dirt can get trapped in. The floor has a very flat, smooth surface texture, so the dirt stays on top. It even requires less soap. Restaurants prefer polished concrete because it's more sanitary; whereas, VCT can hold dirt and bacteria that hide in the joints between tiles.

Tile is unsanitary if not cleaned well. The grout lines in ceramic tile collect organic material because grout is porous if not well sealed. It also cracks. And tile has space underneath it that collects moisture under the floor—which contributes to mold growth. To be effectively sanitized, tile grout requires more dwell time than polished concrete—more cleaner contact time with the surface.

For the best cleaning results, finding the right pH balance in a cleaner is crucial, says QuestMark's Urbanic, "When we first got involved with polished concrete we experimented with pH neutral. It turned out that if you use a little bit higher pH product, it's a better cleaner. So now we are recommending a cleaner with a pH of 9". A low pH product can hurt a polished concrete floor and actually etch the shine right off.

Particularly attractive to facility managers is how the floor is immediately accessible after cleaning so operations are not interrupted. There is no waiting time for materials to cure.

Both the installation and maintenance of polished concrete floors have positive environmental benefits. According to the Eneref Group (www.eneref.org [1]), polished concrete floors 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 lifespan of the already existing concrete floors. And Innovation in Design may offer a third potential credit.

And whether it’s polished concrete on the floor of a manufacturing plant or a restaurant, the outcome is the same; a bright, shiny, easy to clean surface. At HB Ives, the concrete was prepared by grinding to remove residue, followed by patching and joint filling. After further grinding, densifiers were applied to increase the floor’s ability to repel liquids and dust. Finally, the floor was ground to a super high sheen.

The result is now safer and more functional floor, according to HB Ives’ Slaughter. "It does not scratch like epoxy, so it's resilient. It's high gloss, color matching is not an issue, and it's low maintenance."

The polished concrete can be honed to a variety of finishes, from matte to highly reflective, all of them easy to sanitize, according to QuestMark. Color can be added to the finished concrete floor by using dyes.

Material handling equipment moves more easily over the flat, smooth floor, and the smoother surface is also safer to walk on. The National Floor Safety Institute (NFSI) has certified DiamondQuest to meet the slip co-efficient of friction (SCOF) for safety, and the process doesn't produce any slurry run-off that occurs with the wet grinding of concrete.

Enhanced safety, coupled with LEED sustainability and the easy ability to maintain an impeccable, more hygienic floor environment is bringing greater awareness to food serving and grocery industries.

Seth Warren Rose is the Managing Director of The Eneref Institute *[2], which reports on ecologically sensible innovations for facilities.*

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