Eneref Institute

PR FOR PLANET EARTH™

A REPORT ADVOCATING
FOR SOCIALLY RESPONSIBLE
SUSTAINABLE DEVELOPMENT

POLISHED CONCRETE FLOOR ADDS MORE SHINE TO **MELITTA COFFEE COMPANY**

ENEREF INSTITUTE EXAMINES HOW A POLISHED CONCRETE FLOOR BUILDS SALES FOR FOOD MANUFACTURER MELITTA COFFEE.

Melitta, a leading coffee company, roasts over 20 million pounds of coffee per year in their 100,000-square-foot Cherry Hill, NJ, facility. Keeping the facility safe begins with a clean floor, explained Vinny Tagliaferro, Manager of Melitta's Cherry Hill plant.

"The first impression is that floor shines," said Tagliaferro about the plant's polished concrete floor. "That is really truly one of the first impressions when you walk through the door."

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IF YOU POLISH THE FLOOR MECHANICALLY, AND MAINTAIN IT CORRECTLY, IT IS A MUCH MORE SUSTAINABLE FLOOR THAN ANY OTHER FLOOR.

VINNY TAGLIAFERRO | *Plant Manager*

BENEFITS OF A MECHANICALLY POLISHED CONCRETE FLOOR

Melitta's mechanically polished concrete flooring system has the added benefit of potential LEED sustainability points. The high gloss is also easy to maintain.

"Our polished concrete floor helps us in more scenarios than we probably realize with additional business. It presents this plant well. We've had wonderful, wonderful feedback," said Tagliaferro.

"From a food safety concern, the floor itself is much easier to deal with," said Tagliaferro. "We have a floor scrubber that we just run around, so maintaining the floor is much easier. Really that's the bottom line."

Dirt particles can range from 0.001 to 40.00 micrometers in diameter—too small to see. A mechanically polished concrete floor smooths out the concrete floor's miniscule pores and mounds, making them too small to harbor dust or dirt. Coffee particles, which are even greater in size from 5 to 400 micrometers, can't penetrate into the polished floor.

"With the very smooth surface, it's easier to sweep things up," said Tagliaferro.

Because the floor is easier to maintain and more attractive, Tagliaferro said his staff puts more effort into keeping the floor clean.

"Whether it's psychological or whatever, they have a desire to keep it clean," said Tagliaferro. "We always have, but now it's just that folks are inclined to take more pride in their areas."

Furthermore, when plant workers use loading dock trucks on a rainy day, the rainwater that the trucks bring into the plant "doesn't create any issue," according to Tagliaferro. "It's a good resilient floor."

QuestMark Flooring, a division of CentiMark, was selected to install their DiamondQuest polished concrete floor. The polishing process was operationally friendly for the plant because the installation could be done during normal manufacturing operations, one section at a time. And unlike epoxy, polished concrete is clean and quick there is no cure time.

"We were polishing while they were working on the floor, at the same time," said Greg Warner, Senior Project Manager of CentiMark.

THE POLISHING PROCESS

The smooth look of the polished concrete floor was achieved through a multi-step, progressively finer grinding system using specialized equipment with industrial-fine diamond tooling to hone and polish the concrete surface. The process is much like sanding a piece of wood, starting with a heavy grit of sandpaper and then using a lower grit until the right look is reached.

Their dust-free polishing process transformed the poured concrete floor surfaces into a finished floor with a stunning sheen and the ability to inhibit water or contaminants from penetrating the surface. Using this technique, a concrete floor can be mechanically polished to a variety of finishes, from matte to highly reflective.

"It actually looks like a new building. It brings life to the whole area," said Tagliaferro.

The DiamondQuest system also incorporated a penetrating con-

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REJUVENATED THE FLOOR

To begin, QuestMark offered to polish a 10 × 10 ft. area at no cost.

crete densifier, ensuring durability throughout the life of the facility.

Concrete floor-polishing technology has advanced at a rapid rate, and the diamond tooling technology has been critical to its nationwide success, said Joe Reardon, Director of SASE, a flooring equipment supplier.

However, it's important not to skip polishing steps. Eneref found that some low-cost contractors skipped steps, creating imperfections in the floor. To remove these imperfections, the flooring process must be redone from the beginning.

A chemical densifier was applied before polishing to fill in any pores. The densifier hardens the concrete as well as provides stain protection.

To eliminate dust during the polishing process, QuestMark employed a HEPA (high-efficiency particulate air) system. HEPA traps particles with a mechanical air filter by forcing air through a fine mesh.

Lines were carved into the concrete and filled in with polyuria, a semi-rigid filler, to eliminate potential cracking or damage to the floor from heavy forklift travel. Polyuria, which has a slight elasticity, is an ideal filler because floors can shift over time.

EPOXIES DO NOT LAST OVER TIME

Tagliaferro explained that he began searching for facility upgrades ten years ago and considered various options before deciding on polished concrete flooring.

"I had been in plants that did resurfacing of floors with epoxies, and they look great on day one," said Tagliaferro. "But over time, that type of floor had many issues, where the epoxy would start cracking and breaking and flaking and everything else, and then

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THE POLISHING PROCESS WAS OPERATIONALLY FRIENDLY FOR THE INDUSTRIAL PLANT BECAUSE THE INSTALLATION CAN BE DONE DURING NORMAL MANUFACTURING OPERATIONS.

Unlike epoxy, polished concrete is clean and quick there is no cure time.

you end up with this mishmash of cracked areas. I was never, never really happy with any of those systems."

Wheel traffic and foot traffic can wear down an epoxy (or topical) floor, so the surface needs to be periodically reapplied. Polished concrete, on the other hand, is significantly more durable.

To convince Tagliaferro of the benefits of their flooring system, QuestMark offered to polish a 10 x 10 ft. area at no cost. This allowed Melitta the opportunity to evaluate the results and decide on the best course of action.

Tagliaferro strategically selected a location by the entrance for their trial because of the heavy foot traffic and visibility as people enter the plant. After QuestMark completed the test spot, Tagliaferro said he was impressed that the previously "dingy-looking" area now looked bright and shiny.

"It was really interesting that all of a sudden we had this juxtaposition of the old floor next to a beautiful new area. And that sold itself to management," said Tagliaferro. "All I had to do was walk them through that door and say, 'look over here, and look over there.'"

LONG-TERM PROJECT

Rather than polishing the entire floor at once, Melitta directed QuestMark to polish the floor section by section. Equipment was pulled out from areas as needed. In the end, even the loading dock's forklift area was polished when the company saw how much better the rest of the floor looked.

"And you could see each area become almost a new area of the plant, every time we did it," said Tagliaferro. "We rejuvenated an area, so, yes, we're very happy with it."

Every two years, QuestMark "spruces it up, and lifts up the shine," said Tagliaferro. To accomplish this, they use a high-speed burnisher with impregnated diamonds.

"It gives it a really deep clean and pops it back," explained QuestMark's Greg Warner.

POLISHED CONCRETE FLOORS ARE SUSTAINABLE

Mechanically polished concrete is considered a sustainable flooring technology. That's in part because its more durable than resurfaced epoxy floors. Even with frequent maintenance, topical surfaces just don't last.

"If you polish the floor mechanically, and maintain it correctly, it is a much more sustainable floor than any other floor," said Tagliaferro.

Polished concrete requires no hazardous coatings, cleaners or harsh or toxic chemicals to maintain the floor. Instead, abrasives clean it and maintain the gloss. As long as the right cleaning products are used, the polished concrete floor requires little maintenance.

While QuestMark used a HEPA system during installation, they also segregated areas as they were working on them because Melitta is a food environment.

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THE SMOOTH LOOK

Their dust-free polishing process transformed the poured concrete floor surfaces into a finished floor with a stunning sheen.

"It just was the prudent thing to do," said Tagliaferro.

The Melitta Group is a family-owned, 100-year-old coffee company. Beginning in 2009, the company began a 10-million-dollar plant modernization program in their New Jersey facility, making a significant investment to revamp all of their coffee processing equipment and packaging lines.

THE MELITTA OUTSHINES ITS COMPETITION

The mechanically polished concrete floor at the Melitta plant is not only an improvement in terms of increased food safety and lowered maintenance commitment. The shiny new floor also has a visible and lasting impact on important visitors to the plant. When two of Melitta's customers—who had inspected other coffee roasting plants before, but not the Melitta Cherry Hill plant—walked through the doors of the improved Melitta plant, they were both surprised and delighted.

"It was funny," said Vinny Tagliaferro, Manager of the Melitta Cherry Hill plant. "You could see them scan the plant floor area, and then they look at each other and start laughing."

Just like the Melitta management and plant employees, their customers were immediately wowed by the functionality and aesthetic appeal of the sleek new floor.

"It was actually like one of those sighs of relief—relief that they had walked into a facility where they said, 'Wow, this place is clean. It's well maintained.'"

AS PART OF OUR NATURAL INTERIOR DAYLIGHT INITIATIVE

Eneref Institute interviewed participants in the planning and implementation. Interviewees included, Names to come, of Company, Title to come; Names to come, of Company, Title to come; Names to come, of Company, Title to come; Names to come, of Company, Title to come;

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IGNITE A MOVEMENT.

THE ROOFING & FLOORING INITIATIVE IS A CAMPAIGN TO PRESERVE OUR NATURAL RESOURCES, AND ENJOY NICER FLOORS IN OUR HOMES AND BUILDINGS.

ENEREF INSTITUTE launched the Roofing & Flooring Initiative to champion solutions in line with our mission that deliver sound ideas to significant market influencers. The initiative is designed to encourage responsible behavior within public and private organizations, municipalities and corporations by offering common-sense solutions that achieve effective results.

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