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Green Floor Care

by **Mike Schaffer**

More and more schools are insisting that their cleaning is green.

Some advocates for green cleaning, especially those that have been encouraging the use of more environmentally responsible cleaning products and tools for some time, are almost awestruck at how the professional cleaning industry has finally embraced the movement. Much of this enthusiasm is customer driven, especially among schools and universities, which are transferring in record numbers from conventional to environmentally preferable cleaning products.

And adopting Green cleaning appears to be just one aspect of the movement they are embracing, although it is a big part. More and more facilities want their entire operations—not just the cleaning—to be Green and are seeking LEED (Leadership in Energy and Environmental Design) certification. In fact, according to the U.S. Green Building Council (USGBC), in fewer than 10 years, more than 800 projects have been certified under its LEED rating system, and more than 4,600 projects are registered to pursue certification.

Ultimately, the goal for many of these facilities is to be “living buildings.” This means virtually every component of the facility has an overall positive impact on our planet, actually helping to enrich its surroundings and providing a net environmental gain.

But to accomplish this means facilities must look at green issues with a “systems” approach. To understand a systems approach, picture the spokes on a wheel. If one of those spokes is lost or broken, the entire wheel may collapse.

This is how we must view green cleaning. All the spokes must be sturdy and in place for building occupants and the environment to benefit. Never is this truer than with one of the most involved and labor-intensive cleaning tasks school and university cleaning professionals must perform on a regular basis: hard-surface floor cleaning.

The Green Floor Care System

It is estimated that there are more than 70B sq. ft. of commercial space (school, office, medical, etc.) in the United States. Most of these floors have to be maintained on a regular basis, especially in school facilities, requiring the use of millions of gallons of strippers, finishes, glosses, and detergents along with a variety of floor machines.

Proper floor care involves three key components: vacuuming, chemicals, and floor care equipment. Each must do its part in contributing to the green floor care system and the protection of the environment.

Vacuuming

Whenever possible, custodial crews in an educational setting should vacuum hard-surface floors instead of using push brooms or dust mops. Considerable amounts of dust particulates are generated in the sweeping/dust mopping process, and as the dust becomes airborne, it has the potential of harming the health of custodial workers as well as building occupants.

Germs and bacteria on the floor that become airborne can exacerbate indoor air quality (IAQ) problems in health, education, and other facilities. To further complicate matters, dust and contaminants can be

drawn into a facility's HVAC system and spread throughout the building.

Instead of sweeping, many cleaning professionals are finding the new generation of backpack vacuums to be much more comfortable to use than earlier models because they are smaller, lighter, and quieter and help protect IAQ as well. This is because some backpacks are true-HEPA machines. The HEPA exhaust filter not only traps more than 99.9 percent of contaminants, so they are not released into the air, but the entire casing of the machine is airtight, preventing dust and soils from escaping as well.

Chemicals

Although they have served us well for decades, we now know that many conventional floor care chemicals are some of the most powerful and environmentally hazardous in the professional cleaning industry. This is because many contain such metals as zinc, considered to be a neurotoxin that can be harmful to aquatic life if not properly removed by local water-treatment centers.

Other information about conventional floor care chemicals that can trigger health concerns includes the following:

- Many have high amounts of volatile organic compounds (VOCs), which can harm indoor air quality and cause a variety of ailments from nose and eye irritation to asthma attacks, especially in children.
- A chemical found in many conventional floor strippers, 2-butoxy ethanol, is considered a possible carcinogen.
- EGME (ethylene glycol methyl ether) and EGEE (ethylene glycol ethyl ether) are found primarily in floor finishes. These compounds have been associated with eye, skin, and ear infection, and even birth defects.

Fortunately, there are some green-certified floor care chemicals now available that perform well. These are made from ingredients that are tested and proven safer than those in the traditional products used for the same or similar purpose — and even more are expected to enter the marketplace soon. Green floor care products do not contain metals such as zinc, known carcinogens, or toxins; have a low VOC concentration; and are even packaged in recyclable and refillable containers.

Cleaning professionals can also select more environmentally responsible floor care products by doing the following.

- Make sure all the ingredients in the product are clearly listed.
- Select products that do not contain zinc, toxins, or the other ingredients mentioned earlier.
- Make sure the VOC concentration is under seven percent at "use" dilution.
- Purchase from jansan distributors and suppliers that are well versed on floor care and green cleaning and will provide hands-on training.

Additionally, for health, safety, and to protect the environment, floor care chemicals should always be properly diluted per manufacturer's recommendations. And strippers should be diluted with cold water because heat may speed the evaporation of the chemical, rendering the product less effective and potentially requiring more coats to complete the task.

Floor Care Equipment

Often the buffers and burnishers used in floor care produce considerable amounts of dust when cleaning tasks are being performed. This is because the top surface of the floor is actually being "sanded" when buffed or burnished to remove soils, contaminants, and heel marks.

To help minimize this, building managers and school administrators should select machines that have built-in vacuum systems that help trap the dust before it can become airborne. In some areas of the world, floor machines will have separate motors for the vacuum system and the pad. However, in the United States most machines have one motor doing double duty.

These systems should have a deck shroud or “skirt” covering the base of the machine. This helps collect and trap dust and particulates so that they can be vacuumed up by the machine.

Additionally, cylindrical brush floor machines, a newer technology, are increasingly viewed as a “greener” choice for floor care because they tend to use less water and chemical than conventional machines. Whenever less chemical is required, whether green or conventional, it is a positive component of green cleaning because it helps reduce cleaning’s impact on the environment. Also, because they use brushes instead of pads, cylindrical machines often can remove more deeply embedded soils from porous floors and grout without requiring the use of more or stronger chemicals, also improving worker productivity.

Finally, some of the advancements in floor care equipment in general can be considered green because they result in less worker error — which can negatively impact the environment. For instance, over the past decade, many auto scrubbers have been fitted with solenoids to control water flow. The use of solenoids avoids the old problem of water or cleaning solution accidentally flowing if an operator leaves the valve open. Now, on these machines, the water and solution will only flow when the machine is on, helping to save water and chemical. Another noteworthy advancement in green floor care equipment includes extended battery life and batteries that avoid the possibility of acid overflows.

The Hidden Green Component: Training

There are few cleaning tasks in a facility that require as much skill and training as floor care. This is especially true when implementing a green floor care program.

Cleaning workers should be well educated on the proper use and dilution of all cleaning chemicals used in floor care. As mentioned earlier, an important component of any green cleaning program is to use only as much chemical as is necessary to produce satisfactory cleaning results. When it comes to floor care, cleaning workers must properly dilute strippers and detergents, using the least amount possible and never more than the manufacturer recommends to avoid possible injury, waste, or harm to the environment.

Training on the use of equipment, especially buffers and burnishers, is also imperative. Time and resources spent on learning how to use floor care equipment most effectively and productively can be quickly repaid and produce much more satisfactory — and healthier — results.

Finally, workers should be trained on how to best maintain floors on a daily basis to minimize refinishing cycles. This can include increasing the use and size of entryway mats and implementing more frequent and thorough daily maintenance routines using backpack vacuums and/or microfiber flat mops. Also, more durable finishes should be selected. These help minimize refinishing cycles and reduce the overall amount of chemicals necessary for floor care.

Mike Schaffer is president of Tornado, a leading manufacturer of professional cleaning tools and equipment.

Greening Carpet Care

By Danna Adams

The U.S. Environmental Protection Agency warns that cleaning chemicals and wet carpets can contribute to indoor air pollution and negatively impact the environment. This means that in order to “Green” carpet cleaning, the chemicals selected must be more environmentally responsible and the machines used be more effective at removing moisture from carpets after cleaning.

Chemicals

Reports dating back more than 25 years have found a correlation between carpet cleaning chemicals and respiratory outbreaks. Very often, these occur shortly after carpet has been cleaned. In one report, children in a day-care center complained of respiratory problems within a few hours after the carpets had been cleaned in nearby classrooms.

Often these outbreaks are caused by the high concentration of VOCs released into the air from some

conventional carpet cleaning chemicals. High levels have the potential of serious harm to indoor occupants, and even when occupants have been exposed to low levels of VOCs, it has resulted in eye, nose, and throat irritation.

Fortunately, just as with floor care chemicals, many carpet cleaning solutions have been replaced by chemicals that have fewer VOCs and other ingredients that can cause potential health risks. Additionally, some have been certified by independent, third-party organizations such as EcoLogo™ and GreenSeal®. Certification means the products have been evaluated and proven to have less impact on the environment while maintaining satisfactory cleaning effectiveness when compared to conventional cleaning products.

Equipment

Not only are chemicals now being certified, but carpet extractors are as well. The Carpet and Rug Institute's Seal of Approval Program (SOA) awards Gold, Silver, and Bronze certification to machines that pass strict criteria. One of the items examined is how much moisture the extractor injects into carpets and how effectively it removes the moisture along with cleaning solution and soils. Some low-moisture extractors use a gallon of water or less per minute during the extraction process. The more effectively it is removed from the carpet, the less chance for mold or mildew to develop. Additionally, more thoroughly removing carpet cleaning chemicals helps protect indoor air quality and helps prevent rapid resoiling of the carpets.

To help aid in cleaning effectiveness and boost carpet cleaning performance, extractors should heat the cleaning solution to more than 200° F. Heat improves the effectiveness of cleaning chemicals, so less may be needed.

Additionally, cleaning professionals and school administrators need to pay more attention to the wand used for carpet extraction. Historically, the only differences between wands were that some were single, two, or even three jets. However, new wand technologies have recently been introduced that remove the "turbulence" of airflow traveling through the wand, making the wand—and the extractor—more effective.

Danna Adams is a technical support manager for U.S. Products, manufacturers of professional carpet cleaning and restoration equipment.

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