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Web Exclusive: Improving IAQ Starts with the Floor

by Robert Kravitz

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The U.S. Environmental Protection Agency (EPA) as well as various Green cleaning advocates and organizations continue to encourage building owners and facility managers to protect indoor air quality (IAQ). Ranking IAQ as one of the top five environmental risks to public health, the EPA reminds building owners and managers that pollutants can be two to five times higher indoors than outdoors.

Protecting IAQ is necessary in all types of facilities, but most especially school and medical settings. In educational facilities, IAQ is of great concern because schools typically house up to four times as many occupants as an office building. Also, there are often more sources of pollutants found in a school, such as those generated by art, painting, and science classes.

In a hospital, patients are often required to stay for two, three, or more days. This means they may be subjected—or captive—to airborne impurities for prolonged periods of time, with little ventilation or outdoor air contact. A wide range of cleaning chemicals, products, and equipment used in hospitals, as well as building materials, paints, and a variety of chemicals and equipment used for medical purposes, can negatively affect IAQ.

Fortunately, many of the EPA's efforts have paid off. Most all facilities are a great deal more aware of the importance of healthy IAQ today and know many measures can be incorporated to help protect indoor air. This includes using paints and other building materials with reduced VOCs (volatile organic compounds). In some cases, simply updating or installing new HVAC equipment has helped eradicate many IAQ problems.

And the professional cleaning industry is also often credited for helping alleviate problematic and poor IAQ, especially with the growing adoption of Green cleaning products. According to John Kirkwood, former president of the American Lung Association, the cleaning industry is on the "forefront of the awareness about the problem of poor IAQ and cleaning professionals need to [continue] to spread the word to their customers about the need to improve IAQ."

While many facility owners and managers have revised their cleaning procedures and products to improve IAQ, one often-overlooked area is floors—specifically the floor care equipment and related products used to clean, scrub, strip, and polish floors.



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How Polishing Floors Can Harm IAQ



When someone sands a piece of wood by hand or with electric sanding equipment a lot of dust is usually generated. Unless an effective dust-trapping mask is worn, the dust and other particulates can be inhaled, potentially causing respiratory and other health-related problems.

When cleaning professionals buff or burnish hard surface floors, the same thing happens. The machine “sands” the very top layer of the finish, which helps restore the shine and remove soils and marks from the surface area. This also causes a considerable amount of dust to be released into the air—dust and impurities that can be harmful to the cleaning worker as well as building occupants.

To rectify the problem, two types of floor machines and one type of floor cleaning system have been developed to reduce the amount of dust and contaminants released when performing floor care tasks. These include active floor care machines, passive floor care equipment, and no-touch floor cleaning systems.

Active Floor Machines

Active floor machines are commonly used in Europe and many other parts of the world. They are referred to as active because the machine actually has two motors—one to turn the rotary pad, which polishes the floor, and the other to vacuum up dust and contaminants. The dust is then passed through high-filtration filters, where it is trapped and prevented from becoming airborne. Some more advanced machines use HEPA filters, which prevent virtually all contaminants from becoming airborne. A shroud covers the base of the machine, which helps direct dust into the machine so that it can be vacuumed up.

Passive Floor Machines

Because of incompatibilities between the European and North American electrical systems, a machine similar to the active floor machine is most frequently used in North America. However, it is referred to as a passive floor machine. Instead of two separate motors, these machines have one motor that does double duty—simultaneously turning the rotary pad while vacuuming up dust. Again, high-filtration filters are used to collect and trap the dust and contaminants. These machines also have a shroud covering the machine’s base. Interestingly, both systems appear to be equally effective.

No-Touch Cleaning Systems

No-touch systems were originally developed for cleaning restrooms, but new attachments have been developed so that these machines can also be used for many other cleaning tasks, including floor care. With this system, a cleaning solution is misted over the floor area to be cleaned. Allowed to dwell, the solution helps loosen and dissolve contaminants and the “wetting” of the floor prevents dust and soils from becoming airborne. Then the treated area is wet-vacuumed with the machine using a wide-area squeegee. Studies have shown that this floor cleaning system tends to be considerably “cleaner” and faster than conventional floor care machines.

Other Ways to Keep Floors Clean and Protect IAQ

Cleaning should always be viewed as a system. Although proper floor care equipment is vital to improving IAQ, it is not the only necessary component. For instance, the chemicals selected to maintain floors are also a concern. Floor care chemicals can be some of the most powerful and potentially harmful products in the cleaning industry. Environmentally preferable floor care chemicals are now coming

to market that have fewer VOCs and other harmful ingredients, which help preserve IAQ.

Additionally, effective, high-quality matting systems are imperative. Mats placed 12 to 15 feet inside and outside entrances of a facility prevent soils from being walked in. This can help reduce the need to scrub, strip, and polish floors, which essentially is an effective way of reducing the amount of airborne dust and contaminants that might be released when performing floor care tasks.

Finally, worker training is essential in floor care and helping to protect IAQ. There is no point of using an effective floor machine designed to protect IAQ if the cleaning worker does not know how to properly use the machine, does not change the filters regularly as instructed, and/or improperly uses floor care chemicals that are harmful to the indoor environment. As stated earlier, cleaning should be viewed as a system, and each component of the system, including worker training, is essential in properly and professionally performing cleaning tasks and protecting the indoor environment.

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Robert Kravitz, a former building service contractor, is a communications professional for the cleaning and building industries.

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