

## ***Published in Restaurant Facility Magazine***

### **Under Estimated Floors**

In April 2009, CBS news reported on an investigation that had discovered that 96 percent of shoe bottoms in the U.S. carry small amounts of fecal bacteria, coliform bacteria, and other contaminants that could be health-threatening if ingested. Further, the report explained that these contaminants enjoy a “free ride” — meaning that they can be easily transferred from room to room or even from one

location to another on shoe bottoms. Further, as will be discussed later, if touched by human hands they can spread from one surface to



another as well as one person to another.

A similar investigation was conducted a few years ago by Dr. Charles Gerba, a microbiologist with the University of Arizona. Gerba distributed brand-new shoes to 10 participants and asked them to go about their normal activities: working, shopping, school, dining, etc. After two weeks, the participants were to return the shoes to a laboratory for examination. The number and concentration of contaminants found on the shoe bottoms was considered

“surprising” by the researchers — and in fact, potentially harmful pathogens were found not only on the bottoms of the shoes, but inside the shoes as well.

Among the findings were the following unexpected results:

- More than 400,000 units of different types of bacteria were found on the shoe bottoms
- Nearly 3,000 units of different types of bacteria were found on the inside of the shoes
- Approximately 90 percent of the shoes contained coliform bacteria, a type of bacteria that can be health-threatening if ingested
- *E. coli* was found on a third of the shoes

The Gerba study also found other types of bacteria and pathogens on some of the shoe bottoms, including *Klebsiella pneumoniae* (which can cause blood infections) and *Serratia ficaria* (which can cause respiratory infections). In addition, there were other contaminants of varying types and volume.

### **How Real Is the Danger?**

Although this is all quite interesting, many readers may wonder how much of an impact contaminated floors actually have on our health. In fact, some medical facilities still give more thorough floor care, at least the removal of floor contaminants, a fairly low priority. But according to Mark Warner, Product Manager for Disinfectants and Sanitizers for Enviro-Solutions (a leading manufacturer of Green certified cleaning chemicals and products), they can play a crucial role — especially in restaurants, where food and food ingredients, as well as liquids and oils, commonly find their way onto floors.

“We may have as many as 50 direct and indirect contacts with floors every day,” Warner says. “With each ‘touch,’ we can come into contact with bacteria and germs. If we then touch our eyes or nose, another surface, another person, or food or a liquid, the potential for cross-contamination is significant.”

According to Warner, employees may directly or indirectly touch floors in a restaurant facility (therefore creating a risk of cross contamination) by:

- Picking up a pot, pan, cooking utensil, pen or pencil that has fallen to the floor
- Tying a shoelace
- Touching and then gathering or wrapping power cords on the floor
- Moving a mat
- Lifting up a container, can, box or similar item placed on the floor

“It is not something we are really conscious of,” says Warner. “But now that we know scores of pathogens can be found on floor surfaces, it is an area schools, many medical facilities, and the[professional] cleaning industry is paying much more attention to.”

### **Ending the Free Ride**

There are many ways restaurant owners and managers can keep their floors healthy. In most cases, when there is no prevailing health issue or concern about specific pathogens or infection either in the facility or within the larger community, “routine” cleaning should suffice. This involves the use of neutral cleaners following standard cleaning procedures.

However, of special importance are the mops, mop heads, buckets and cleaning carts a facility uses. Because mop poles, mop heads and buckets can stay damp for hours after use, the potential for bacteria to develop on their surfaces is considerable; these items should themselves be cleaned with neutral cleaners and a disinfectant. Cleaning cart wheels should also be cleaned with a disinfectant. **(See sidebar: What to Look for When Selecting a Disinfectant)**

Of course if there are any specific health concerns in either the restaurant or in the local community, more aggressive cleaning is called for. Referred to as “outbreak” cleaning, in such situations neutral cleaners should be replaced with products with much greater cleaning efficacy, and or with disinfectants with specific “kill claims” for the pathogens of concern. **(See sidebar: What are Kill Claims.)** Floors should also be cleaned more frequently, both before and after shifts, and cleaning should extend to walls as well.

### **Calling in the Big Guns**

Restaurants should also consider switching from conventional floor cleaning methods (mops and buckets), which only clean floor surfaces, to professional cleaning equipment such as automatic scrubbers. As the name implies, automatic scrubbers scrub floors clean, penetrating pores and grout areas and removing soils and contaminants.

According to Mike Schaffer, president of Tornado® Industries, a leading manufacturer of floor care equipment, in the past, many food service facilities have been reluctant to employ automatic scrubbers, chiefly because these machines tended to be too large to handle and maneuver in a typical restaurant kitchen. Many restaurant managers were

also concerned about the safety risks posed by the machine's power cords, especially if other workers are present; tripping over power cords is more common than most people realize and becomes an even greater concern in tight and confined areas such as a commercial kitchen.

However, a new generation of more compact, cordless, battery-operated automatic scrubbers has now become an option for tight, difficult-to-clean spaces. “One such machine features a 14-inch cleaning path that allows it to maneuver in and out of the narrow spaces common in restaurant kitchens,” says Schaffer. “It also has a low profile that allows it to reach under storage shelves.”

Schaffer adds that this new generation of automatic scrubbers also offer extended operating times, allowing them to work longer between charges. Further, they are powered by a new type of battery that is more eco-friendly than previous systems and which allows the machines to be completely cord free.

Using machines that can penetrate deeply into floor surfaces in order to remove soils and pathogens is key to addressing the floor contamination issue. Incorporating the other methods discussed here, including the use of specific disinfectants when called for and using more aggressive cleaning procedures as the situation warrants, will also help maintain restaurants and other food service facilities, protecting the health of patrons.

***Sidebar:***

***What Are Kill Claims?***

Kill claims are a list of pathogens, germs and bacteria that are “killed” when a disinfectant is used properly. This information is listed on EPA-registered and DIN-registered

(in Canada) disinfectants and also includes the product's "dwell time" — the amount of time the disinfectant must be left on a pre-cleaned surface to sit on, or dwell, on that surface before being wiped or mopped away. This is typically 10 minutes.

Different varieties of disinfectants usually have different kill claims. The ways in which they are manufactured, their ingredients, and the proportional amounts of ingredients used in a product will impact what it will kill. Managers can select the most effective disinfectants for the concern at hand by working with their janitorial distributor. ~~ Mark Warner

***Sidebar:***

***What to Look for When Selecting a Disinfectant***

- Use only EPA-registered disinfectants (DIN-registered for Canada).
- Pay attention to whether the product is a cleaner-disinfectant or just a disinfectant. Disinfecting is a two-step procedure. Soils must be cleaned from a surface first (with an effective cleaner or cleaner/disinfectant), and then the disinfectant is applied, which means either one or two products or two separate applications are employed.
- Check the disinfectant's label to make sure it will kill the specific pathogens of concern, such as MRSA, influenza A, or HIV.
- Check the label to determine the parts per million (ppm) of active ingredients in the disinfectant. Disinfectants

are considered to be effective if the ppm is above 300. Some disinfectants yield almost twice that number, ensuring their effectiveness over a greater soil load.

- Follow label directions regarding pre-cleaning, dilution rates, procedures, personal protection devices, as well as contact time or dwell time, the amount of time the disinfectant must stay on a wet surface for it to work correctly. ~~ Mark Warner