PREVENTING DIRTY STICKY SLIPPERY FLOORS
There are few things more frustrating for cleaning professionals than to finish a job and not see the benefits of their hard work. Why is it that some floors still look dull or dingy even after they are cleaned? Or, worse, the cleaning itself seems to leave the floors feeling sticky? In addition, sometimes floors can look great right after cleaning, but seem to get dirty again much faster than they should. The culprit here is in the place you’d least expect—the cleaning product itself. Traditional cleaning technologies can leave a large amount of residue behind, and lead to all these issues. This ebook will cover how residue is formed, the very real impact it can have on a business, and how to remove residue once and for all.
How Residue is Created

1 Water delivers the other cleaning product components

2 Solvents cut through dirt to deliver surfactants and help to further break it up

3 Surfactants (Surface Active Agents)—such as a detergent—lower the surface tension of water, which suspends the dirt and makes it easy to wipe away

4 Once the dirt is wiped away, however, surfactants leave residue behind on the surface
### What Factors Into How Much Residue is Left Behind?

<table>
<thead>
<tr>
<th>1. PRODUCT</th>
<th>2. PROCESS</th>
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<tbody>
<tr>
<td>What is the chemistry of the product being used?</td>
<td>Is a two-step process used?</td>
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<td>The critical component here is how much surfactant (soap) is used in the product. This can vary a great deal from product to product.</td>
<td>Some products, such as quaternary disinfectants (or quats), are often used by cleaning teams in one step. However, quats are not effective cleaners and are naturally sticky, leaving residue behind. Surfaces should be cleaned first and then sanitized or disinfected as needed.</td>
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<td>Is the correct dilution of the product being used?</td>
<td>Is equipment properly used?</td>
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<td>Many professional cleaners use concentrated cleaning products. This reduces the costs dramatically over using ready-to-use products, as well as reducing storage costs and waste from discarded plastic bottles. However, if not properly diluted according to instructions, too much soap can end up being used.</td>
<td>Avoid string mops that can redeposit cleaning product, and make sure mop water doesn’t get dirty.</td>
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The Problem with Quaternary Disinfectants:

Healthcare facilities, in particular, are likely to disinfect floors. Disinfecting should be a two-step process of cleaning and then disinfecting. Quaternary disinfectants (or quats) are commonly used, and while they are a disinfectant, they aren’t effective cleaners. In fact, quats are classified as cationic surfactants and are positively charged\(^1\), in opposition to a floor’s negative charge, which creates a molecular attraction.

![Diagram showing the molecular attraction of quats to floors and soils](image)

The positively-charged quat residue is attracted to the negatively charged floor. Since quats have a natural stickiness or tackiness, they attract soils to them.

These two properties—the molecular attraction of the quats to the floor and dirt to quats—creates an environment in which the residue and dirt build-up can become thicker and more layered over time.
Consequences of Residue Build-Up

Floors Look Dirty Faster: Residue attracts more than just feet to the floor. They also attract dirt and other contaminants tracked in by shoes. They grip and hold the particulate matter carried through the air. Particulate matter consists of dust, dirt, soot, and smoke. Some particulates are visible to the naked eye, but some are too small to see. It’s the build-up of these particulates on the imperfections of a surface that lead to them looking dirty or off-color over time. Sticky floors accelerate the process by making it easier for these materials to attach.

Bacterial Farms: Sticky floors are also an ideal place for biofilms to grow. These bacteria-rich films can cause infections both acute and chronic. Biofilms can also produce and trap odors. They can also be very resistant to antimicrobial agents and disinfectants.
How Biofilms Form

1. Planktonic (free-swimming) bacteria attach to a surface. Sticky residue on a floor helps facilitate this.

2. Bacteria attach to a surface via sugary substance (EPS). The EPS coats the bacteria and attaches it to other cells and other substances. Cells can share genetic material and have an organized structure.

3. Biofilm grows, matures and thickens. Biofilms can cause billions of damage each year by damaging equipment and facilities and causing infectious diseases.
Negative Business Perception: Whether a floor is actually clean or not, the perception of its cleanliness is key to those visiting a facility. It can affect how they feel while within a facility, and impact their overall feelings towards a company’s professionalism. If a healthcare facility looks dirty, it’ll be assumed to be unhygienic. Parents will be hesitant to have their kids attend schools that look dirty or unsanitary, and a customer will judge a store or restaurant by the cleanliness of their bathroom, floors, and other surfaces. In fact, research has shown that 14% of polled consumers would stop visiting a store that was not clean, and 29% would only continue visiting an unclean store if it was absolutely necessary.\(^4\)

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**Slippery floors:** Slips, trips, and falls are a serious cause for concerns for businesses. Slip and falls account for over 1 million visits to hospital emergency rooms in a year and are the primary cause for lost days from work. The residue left behind is caused by surfactants or soap. As anyone who has held a bar of soap in their wet hands knows, water + soap = slippery. This applies to the soapy film left behind over time as well. As soon as the surface gets wet, it becomes a slippery health hazard.
How To Reduce Residue

1. **Use low-residue cleaners**

Many cleaners claim to be residue-free. Be sure to understand a cleaning product’s chemistry. EnvirOx’s proprietary peroxide technology, for example, contains just the right amount of surfactants to get the job done—much less than traditional cleaning chemistries. This means the surfactants are utilized in the cleaning process (having attached to the dirt to lift it and carry it away), so there is not excess surfactant leftover to be deposited as residue.

- Test a cleaning product before wide usage. Cleaning glass is recommended for this, as it is easy to see any residue left behind on its surface.

- Choose products that use nonionic surfactants. These have a negative charge and are thus not attracted to the negative charge of a floor unlike products, such as quats, that use positively charged surfactants.
The EnvirOx Advantage
Utilizing the power of hydrogen peroxide combined with cold-pressed orange oil means that only a small amount of surfactants are needed when compared with more traditional cleaning chemistries.
2 Use dilution control dispensing for concentrated cleaning chemicals.

Concentrated cleaning products are much more economical than ready-to-use bottles, but if a janitor can simply pour the concentrate into a mop bucket, you’ll see residue issues. This is because hand-measuring can be incredibly inaccurate. Too much product is being used, which equals more residue.

Available in Portable, Single, or Multi Options
Restorative Cleaning

If a daily cleaning regimen hasn’t been maintained, or a high-residue cleaner or disinfectant has been used, then a restorative cleaning may be needed. A restorative cleaning would involve the use of a low-residue cleaner in combination with a stiff-bristled deck scrub brush, autoscrubber, or cylindrical brush machine.
Follow proper cleaning techniques.

The most common problem is disinfecting surfaces without cleaning first. The CDC recommends a two-step process. First clean, and then sanitize or disinfect. This cleaning should remove any residue from the disinfectant, preventing build-up.

Dirty mop water and dirty towels can put down more soap than they pick up; make sure tools are clean and picking up the dirt.

Choose the Right Mop

- String mops can redeposit dirt and cleaning solutions onto a floor if they aren’t kept clean and dry.
- Pre-charged microfiber mops (mop head soaked in chemical) do not always pick up dirt well and can leave an excessive amount of cleaning solution on a floor.
- Using a micro-fiber mop with a double bucket system is the best option for daily cleaning.
If you’re ready to get rid of the residue, we’d love to hear from you.

Call 1-800-281-9604 or email sales@enviroxclean.com