

Quick Links

[Facilities Website](#)
[Safety Data Sheets \(SDS\)](#)

Some of these links lead to web-based resources that are not product-specific.

What are hand sanitizers and the common types of hand sanitizers?

The CDC recommends washing hands with soap and water over hand sanitizing when the hands are visibly soiled, before eating and after using the restroom, and when spores may be present (e.g. *C. difficile*) (1). While both hand washing and hand sanitizer use are effective at keeping proper hand hygiene, hand sanitizers are portable and generally more readily available. Additionally, hand sanitizing stations can be placed at every entrance of a facility, as well as in any high traffic or high touch areas.

Hand sanitizers contain antiseptic agents used to kill or reduce the number of bacteria present and serve as a common alternative to hand washing. Two primary types of hand sanitizers comprise most of the global market. Alcohol-based hand sanitizers are the most common in both US and global markets and have an active ingredient of 60%-95% ethanol. The second leading type of hand sanitizers are those composed of quaternary ammonium compounds such as benzalkonium chloride or benzethonium chloride (Quats). The ethanol-based hand sanitizers are flammable whereas the quaternary ammonium compounds may not which could be an important factor for certain facilities.

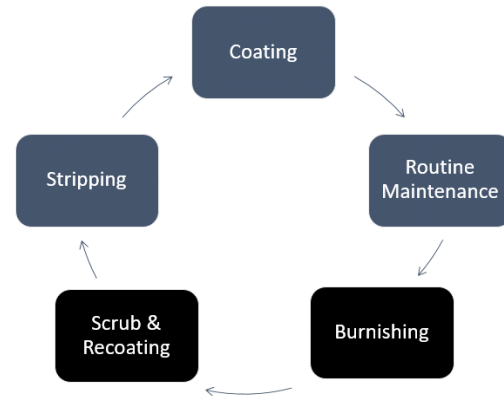
Acrylic floor finish

The commercial floor finish market can be difficult to navigate with hundreds, if not thousands of different individual floor finishes available. Most of the floor finishes available today can be classified based on polymer composition with the largest number using acrylic based polymers as the primary ingredient. Other options include urethane-based, acrylic-urethane based (hybrids), and 2-part urethane based floor finishes.

Floor care life cycle

The most damaging activity that a floor finish experiences daily is primarily from foot traffic. Shoes carry in soil from outside the facility, friction of these soils on the floor results in small scratches in the floor finish. Over time, this mechanical and physical damage will dull the appearance of the floor. The appearance can often be repaired by either burnishing if the damage is minor or top scrubbing with an abrasive pad and subsequent recoat with finish.

While mechanical damage to floor finishes can be more easily repaired, damage to floor finishes from chemical sources disrupts the integrity of the finish and may be very difficult to repair. Most often the chemically damaged area will need to be fully chemically stripped and the floor re-coated with floor finish.



The above image is the current life cycle of a floor in a commercial facility.

How does alcohol-based hand sanitizer affect acrylic floor finish?

Chemical damage from alcohol-based hand sanitizers on floor finishes is one of the more common issues that facilities experience. Previously, this was mainly seen in healthcare facilities, but as hand sanitizer stations are becoming more prevalent in education, retail, and transportation verticals in the post COVID-19 world, floor finish damage could become a lot more common and noticeable.

When an alcohol-based hand sanitizer is placed on an acrylic floor finish, it quickly penetrates through and attacks where the finish is adhered to the floor. This causes the floor finish to swell, which weakens the cohesive forces in the floor finish (think of irreversibly stretching a plastic bag) and reduces adhesion to the floor. This can occur in as few as 3-5 minutes, with more damage occurring during longer exposures including possible complete finish delamination.

Alcohol-based hand sanitizer damage to floor finish may be visible in two different ways. If the floor is a lighter color, exposure to hand sanitizers may cause dirt to stick to the damaged areas, resulting in dark/dirty spotting. On darker flooring types, the damage will be visible as lightened/white spots. As previously mentioned, longer exposures may cause complete finish delamination, or the finish may have a crinkled texture.

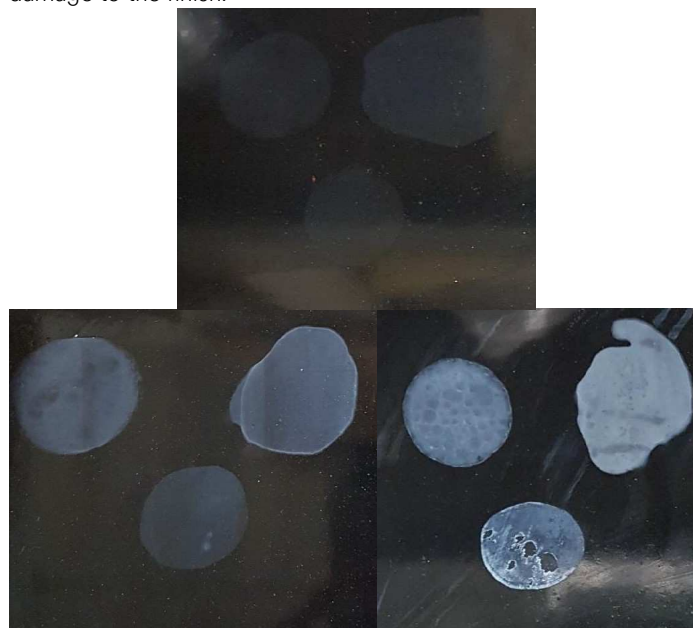
Restoration from hand sanitizer damage is limited and it is recommended to completely strip the floor finish and re-coat. If action is not taken, the customer may be stuck with a very unsightly floor and the area of flooring underneath the damaged finish may no longer be protected, subjecting it to possible damage.

How 3M can help

The CDC recommends the proper amount of hand sanitizer to be used effectively requires the hands to be wet for at least 10-15 seconds while rubbing together (2). This volume used will often result in the dripping of hand sanitizer on the floor several feet from the dispensers, increasing the area of damage other than just below the dispenser.

3M™ Protect & Shine Floor Protector: This proprietary high performance, water-based floor finish contains unique and patented 3M Nano-Technology. The highly cross-linked composite composition provides superior hand sanitizer resistance versus leading competitive acrylic floor finishes.

Other options: **Scotchgard™ Surface Protection Film 2200** can be a solution for directly under the hand sanitizer stations to prevent damage to the finish.



Above Image: 3M™ Protect & Shine Floor Protector after 15 min dwell time of alcohol based hand sanitizer.

Below Images: Standard Acrylic Floor Finish after 15 min dwell time of alcohol based hand sanitizer..

References

(1,2) Centers for Disease Control and Prevention. Guideline for Hand Hygiene in Health-Care Settings: Recommendations of the Healthcare Infection Control Practices Advisory Committee and the ICPAC/SHEA/APIC/IDSA Hand Hygiene Task Force. MMWR 2002;51(No. RR16):[pages 13, 32].

Health and Safety



When handling any chemical products, read the

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When using any equipment, always follow the manufacturers' instructions for safe operation.

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