RESILIENT FINISH COATS & USE IN HEALTHCARE

The issue of glare created by high gloss flooring finishes has become so important in today's healthcare environment that industry guidelines are now recommending to eliminate the use of high gloss polish on flooring surfaces. The 2010 edition of The Facility Guidelines Institute's *Guidelines for Design & Construction of Healthcare Facilities* recommends that "Highly polished flooring or flooring finishes that create glare shall be avoided." (Part Two, 2.1-7.2.3.2 Flooring [9] and Appendix A2.1-7.2.3.2 [9])

The Guide also mandates that selected flooring surfaces shall be (also see chart on following page):

- Readily cleanable
- Appropriately wear-resistant
- Easy to maintain

(Guidelines for Design & Construction of Healthcare Facilities, Part Two – Hospitals, 2.1-7.2.3.2 Flooring)

Resilient sheet flooring products have long been the standard in many healthcare facilities because of their durability, ease of maintenance and their inherent aseptic properties. As products have evolved so have the coatings that create the wear surface of these products -- so much so that some products on the market today eliminate the need for polish to be applied in the field. The addition of polish is time consuming, expensive over the life of the product, disruptive to the healing environment and can create an unsafe environment by producing excessive glare. A routine maintenance procedure that includes stripping of site applied polish creates a disposal issue for the caustic chemicals used for removing the polish.

There are many types of resilient sheet flooring products on the market today, with one main variable being the finish coat that is applied to the product during the manufacturing process. These coatings may not appear to have any differences based on appearance but how they perform over time creates clear advantages and disadvantages between them all.

Taking the Guidelines' list of recommendations as the platform of this paper, let's take a look at the options based on the three main types of coating systems available and weigh the advantages and disadvantages of each:

1. Vinyl (first generation)
2. Urethane and UV-Cured Urethane(second generation)
3. UV-Cured Urethane with suspended aluminum oxide additive (third generation)

Vinyl Coatings

One option for flooring manufacturers is to apply a vinyl coating system to a resilient product. This coating proves to be durable, scuff resistant and less expensive, but falls short as it relates to scratching from normal wear and tear, performance in heavy traffic areas, ease of maintenance, and staining from asphalt drive walk-off and the many dyes and staining agents found in the healthcare environment. For this coating system to perform at optimal levels, an acrylic floor finish must be applied to enhance the characteristics needed to withstand the rigorous requirements of a healthcare environment.

Urethane UV Cured Coatings

This coating system showed significant improvement over standard vinyl coatings with its improved performance characteristics especially in the area of stain and scratch resistance. An additional advantage of these coatings is its ability to achieve a high gloss level. In the healthcare environment, high gloss does not translate to better performance or durability, but it can translate to a floor that appears to be wet and hazardous to those in the space. A high gloss floor also does not equate to ease of maintenance, rather it is time consuming and very costly to maintain. Even though many enhancements were made with this coating system, significant abrasion resistance or durability was not enhanced.

Initial cost of these products with a UV-Cured coating system can be higher than vinyl coatings but can be maintained without polish, however, to meet the stringent requirements of an environment like a healthcare facility, applying floor finish is still recommended for optimal performance in the areas of scratch and abrasion resistance in high traffic areas.

UV-Cured Urethane with Suspended Aluminum Oxide

In order to fully understand the significance of this additive to UV-Cured coating systems first one must understand the mineral and where this technology got its start.

Aluminum Oxide is an extremely hard mineral found on the MOH (Hardness Scale) at a 9; the hardest mineral on that same scale is a Diamond at 10. Aluminum Oxide was first used to add slip-resistance to coating systems. Used in a high concentration, aluminum oxide can add significant co-efficient of friction to a product allowing a manufacturer to promote its slip-resistance properties for wet and dry areas. This same technology was then introduced in coatings designed to protect the surface of hardwood flooring. Hardwood flooring is very susceptible to scratching and abrasion if not protected. To protect that surface aluminum oxide was suspended in the urethane and cured mainly by UV light.

Today that same technology is now found in coating systems for resilient products. The suspension of this very hard mineral protects the appearance of the product, allows for a no-polish maintenance option and provides superior scratch, scuff and stain resistance. Because this mineral is suspended throughout the wear surface, the coating allows healthcare facilities the freedom to operate with a uniform maintenance procedure throughout their facilities, reduces the amount of glare created by high gloss and highly buffed acrylic finishes, decreases the time it takes to clean critical care spaces, decreases the chemicals, time and disturbance that stripping and re-coating can create. Another key performance attribute of this coating is its resistance to hand sanitizers which are primarily alcohol based and can stain and discolor many products without this coating system as well as site applied polishes.

In the chart below, you can see how factory applied finish coats are “easily maintained” and “readily cleanable” much more than products with a site-applied finish coat or polish as is mandated in the Guidelines for Design & Construction of Healthcare Facilities. In sensitive environments that must be available for use 24 hours a day, 7 days a week, such as emergency rooms and operating rooms, the advantage of a quick damp mopping as opposed to a complete shut-down for a restorative maintenance procedure is evident.

	Standard Resilient - Polish Method	Inherent Finish Coat - No Polish Method
Upon Installation:		
Sweep or vacuum	Yes	Yes
Damp mop	Yes	Yes
Apply multiple coats of floor finish	Yes	No
Regular Maintenance:		
Sweep or vacuum	Yes	Yes
Damp mop	Yes	Yes
Wet scrub	Yes	Yes
Spray buff or burnish	Yes	No
Apply finish restorer	As needed	No
Restorative Maintenance:		
Apply stripping solution	Yes	No
Scrub with nylon pad/brush to remove finish	Yes	No
Squeegee and wet vac stripping solution	Yes	No
Apply multiple coats of floor finish	Yes	No