

The Facts and Fiction of High-Speed Burnishing

Let a brief chemistry lesson ease your fears. By Thomas H. Bach

To discuss high-speed burnishing programs, you must first understand the chemistry of floor finishes used in these programs. Acrylic floor finishes and their inherent properties are designed around three major ingredients: polymer, wax and plasticizers.

The polymer is the most important part of the finish. Wear and maintenance properties -- which include gloss, hardness, durability, removability, slip-resistance, and resistance to scuffing, black marks, powdering, soil, detergents and water -- are a function of the base polymer.

All the remaining chemicals added to floor-finish formulations are used to modify inherent polymer properties, but the base properties desired are determined by the polymer selection. The second major component in floor finish is another polymer, called "wax." Like the base polymer, wax is synthetic, but it is different in composition from the original polymer.

The function of wax in a floor finish is to provide desired buffability. The higher the wax content, the more buffable the finish. However, too much wax makes the finish soft and more susceptible to scuffing and dirt pick-up.

Plasticizers can sometimes be solvents which assist in film formation, and evaporate as the film dries. Other plasticizers remain within the film during its life to provide resiliency. Various combinations of these ingredients are responsible for the performance properties of floor finishes that we use today. Keep this in mind as we look at fact and fiction in high-speed burnishing programs.

Fiction

Floor finishes used in high-speed programs must be "thermoplastic" in composition.

Fact

All floor finish films are thermoplastic. Thermoplastic is simply a term that defines a material that will flow, deform or become "plastic" when heated. This material can differ in its toughness, hardness and melting or softening point. Thermoplastic materials include everything from steel, glass and plexiglas, to butter and floor finishes.

Fiction

High-speed burnishing causes a meltdown of the layers of finish.

Fact

High-speed burnishing is nothing more than controlled scratching that results in physically removing or abrasively smoothing the top wear-surfaces of floor finish. This smoothing causes increased floor gloss.

If your crew employs a high-speed burnishing program, you may want five or six coats of finish to be applied to floors for two reasons:

- * Successive coats of finish will dampen out the irregularities of floor tile, especially after stripping.
- * Because burnishing abrasively removes the film, you run the risk of prematurely damaging or wearing out floor tile without applying an adequate number of coats of finish. Multiple coats of finish result in a smooth surface that reflects light in an ordered, regular pattern to create high gloss.

Fiction

Difficulty in removing finish from a floor, or stripping, is caused by high-speed burnishing.

Fact

All finishes lose some of their removability as they age. The difficulty in removing high-speed-maintained finish films is often due to the amount of time the finish was on the floor, and not from any physical or chemical changes which take place when the finish is burnished.

Because removability only gets harder with time, it is important that finishes used in a high-speed maintenance program start out with excellent removability features.

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