



Concrete Polishing

Adding Low Maintenance Beauty to Concrete Floors

By David W. Harris

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We are all familiar with the beauty of acid stained and sealed concrete flooring and most of you have probably used this flooring alternative in a project or two with mixed results. Sadly, for many contractors, architects, builders, and owners, stained concrete is the only decorative concrete flooring option considered for commercial application, regardless of projected long term performance under commercial traffic conditions. As we have all seen, stained and sealed concrete can quickly fail when subjected to the rigorous demands of

commercial or retail foot and/or machine traffic. The most novice observer is now acquainted with the tell-tale signs of failed stain and/or sealed concrete flooring in the form of chipped and peeling sealer, loss of gloss, color loss, and my personal favorite, trails left in restaurant flooring caused by the wait staff "walking off" both the sealer and stain, leaving those unattractive grey paths that are all too common. There is a solution. The relatively new industry of diamond polished concrete flooring is quickly emerging to satisfy the demands of commercial traffic while maintaining the beauty and benefits of more traditional concrete flooring systems. This is not to say that stained and sealed concrete flooring does not have a legitimate place in both commercial and residential flooring, however diamond polishing is now more than ever a viable option which should be considered not only for its functional durability, but also its unique decorative appeal.

OVERVIEW

Thanks to recent advances in polishing equipment and techniques, contractors are now able to grind concrete floor surfaces, whether new or old to a high-gloss finish that never needs waxes or coatings.

The durability and performance of polished concrete have recently been realized by retail, warehouse, and office facilities management who have chosen polished concrete flooring as an alternative to marble, granite, tile, linoleum, or coated concrete (coated: epoxy, urethane, acrylic, silicone sealers). Once reserved only as a utilitarian solution for Home Depot, Lowe's, and other big box stores, diamond polished concrete floors are now catching on in the decorative market, creating high-luster floors, which can be stained, dyed or colored integrally to resemble the look of polished stone. With the ability to craft a one of a kind custom floor free from the traditional down falls of sealed concrete.

Because polishing is a multi-step process, customers can choose the level of sheen from satin to high-gloss that meets their maintenance, aesthetic, and cost requirements. This versatility in application makes polished concrete an ideal flooring material for a variety of applications. Polished concrete customers include:

Large warehouses and warehouse outlets

- Retail stores
- Hotels and restaurants
- Office buildings
- Auto showrooms
- Private residences
- Garage or Storage areas

BENEFITS OF POLISHED CONCRETE

Ease of maintenance and long lasting beauty are key reasons many customers are opting for polished concrete floor systems. Not only are polished floors easy

to clean, requiring only occasional damp mopping, they hold up well to heavy forklift and foot traffic. They also eliminate the need for messy waxes or coatings as well as the associated labor, time, and expense to apply and maintain them. Once more, the glossy surface resists the marks from car tires of forklift truck tires, and staining from oil and chemical spills.

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The high light reflectivity of polished concrete is another important benefit, especially for office buildings, hotels, restaurants, and other public facilities that want to project a bright, clean, professional image. To add color for a more finished look, stain or dye can be applied to the concrete during the polishing process or integral color can be added to the poured concrete and once

cured, can then be polished for an attractive finish. It's also possible to produce a terrazzo look by grinding through the top few millimeters of the concrete surface to expose the aggregate.

During the polishing process an internal impregnating sealer is applied. The sealer sinks into the concrete and is invisible to the naked eye. It not only protects the concrete from the inside out, it also hardens and densifies the concrete. This eliminates the need for a topical coating,



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which reduces maintenance significantly.

- Never needs waxing or coating
- Stained, dyed, or colored integrally for a beautiful decorative finish
- Very low maintenance = long lasting beauty and service
- VOC free
- Highly durable
- Can be put into service immediately
- High traction certification from the National Floor Safety Institute (NFSI)

PROCESS

Diamond polishing in simple terms is like sanding a piece of wood. Progressively finer industrial grade diamond impregnated pads are attached to a rotary grinder/polisher and abrade the concrete surface either wet or dry resulting in a range of finishes from honed to an ultra shine. Grinding grits start at 30 grit and end at 400 grit. Polishing follows, and can range from 800 grit to 3000 grit. Many contractors are now also adding a densifier/hardener which chemically hardens the top layer of concrete and acts as an impregnating sealer to prevent staining. If a colorant is desired and was



not provided integrally, acid stains or dyes may be used to color the concrete surface. As is the defining characteristic of polished concrete, there is no need for topical sealers or wax to cover and “lock in the color”. The achilles heel however of polished concrete floors are acids, which can etch the surface leaving the concrete susceptible to staining and uneven wear. Considerations should be made for any situation where mild or strong acids will be in contact with the flooring.

BUILDING “GREEN”

By far the most appealing attribute of diamond polished concrete flooring is the elimination of any form of sealer or top coat which traditionally lead to failure or regular maintenance. Virtually any structurally sound concrete floor can be polished to a very hard, durable, and nearly maintenance free finish. Diamond polished floors are also considered a sustainable “green” alternative to carpet, ceramic, VCT, or concrete coatings. Not only are they VOC free and low maintenance, but by simply utilizing the concrete slab as the final flooring this

eliminates the need for added finish materials to cover the concrete surface. Fewer finish materials equals fewer carbon emissions.

FINAL THOUGHTS

What do end users want in a floor? First, they want a floor that looks good. Second, they want a floor that functions, is easy to maintain, and that will last. Third, they want a floor that fits into their budget. Some of us may disagree with what order these criteria fall, but ultimately our customers want a good value. To determine if they are getting a


good value the end user has to understand what he/she is buying. You can pay, and keep paying for a floor finish that requires repairs, maintenance, and costly upkeep, or you may now choose to invest in a flooring system up front for long lasting durability and beauty. ●




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