XTREME FLOORING SOLUTIONS
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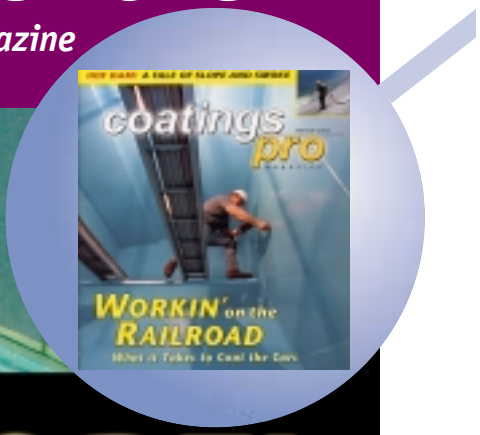





# Choosing a Decorative Seamless Polymer Floor System

***By Floyd Dimmick***

With hundreds of choices to select from in a $950 million industry, choosing your customers' floors can be daunting. The good news is that today's decorative troweled systems offer endless pattern options and can be as artistic and decorative as your imagination. It's also easy to balance performance and aesthetics without breaking your client's budget. Just remember: if you need to compromise on something, don't compromise performance – it will come back to haunt you when the client is unhappy with the finished product.

To determine your unit cost for a job, organize the available liquid polymer floor systems into overlay types, taking into account the durability requirements and desired aesthetics. In decorative applications, the finished surface should always enhance and beautify as well as protect the walls and ceiling of a building. Successful contractors keep protection and maintenance as their foremost goals. Here are seven basic application methods and crossover combinations possible with each one:

**Re-grading and leveling the surface is an important first step before laying any decorative floor system.**



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## Decorative Polymer Floor Overlay Types

**Neat coatings** are polymer systems that are applied in one-, two-, or three-coat applications. Applicators can use the same polymer for the entire overlay thickness, or two different polymers as a composite to provide protection and aesthetics. An anti-slip aggregate can be lightly broadcasted into the topcoat. These overlays are normally solid pigmented colors, but with a little imagination, you can create beautiful designs and very artistic environments. The thickness of these systems ranges from 10 to 60 mils.

**Random flake systems overlays** are the same as neat coating applications, but with the addition of vinyl chips lightly broadcasted into the second-to-last wet polymer. The topcoat is always clear and it may have an anti-slip aggregate. These systems provide another decorative touch with very little cost increase.

**Imaging overlays**, the newest polymer floor systems, encapsulate a printed fabric into a polymer system. Any photo, image, pattern, or logo can be imprinted. A clear topcoat conveys the desired anti-slip resistant surface and gives a three-dimensional appearance. (In fact, the images can be so realistic that people sometimes try to pick them up!) These systems can go wall-to-wall or be used in selected locations as part of other polymer overlay systems. They also can provide corporate branding of products or image in the customer's choice of a loud or quiet format. These systems range from 40 to 250 mils thick.

**Single and double broadcast coating systems** consist of a neat epoxy coating application and an aggregate broadcasted into the wet polymer. The process can be repeated up to three times, depending on the desired overlay thickness. The aggregate can be natural silica sands, pigmented silica or quartz sands, or vinyl chips called flakes. By using two different polymers, applicators can achieve additional protection and aesthetics. The topcoat also can contain an anti-slip aggregate. Solid-color overlays using natural

**A double-broadcast colored quartz overlay** *(top)*, **combined with an inlay system showing the Illinois State Agency logo adorns a laboratory entrance. A ⅛-inch self-leveling overlay** *(center)* **improves safety and adds a decorative touch to a food processing plant floor. To prevent accidents on this poolside floor** *(bottom)*, **a closed dense epoxy polymer concrete was power-troweled over the worn concrete surface and given an anti-slip aggregate topcoat.**





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silica sands can be finished as a random flake, but solid flake and pigmented silica sands are always finished with clear topcoats to highlight the beauty of the blend. These systems range from 60 mils to 250 mils thick.

A **SLURRY BROADCAST SYSTEM** is applied in one lift to create an overlay thickness. Applicators blend the polymer with a special aggregate that floats during the spreading process. Silica sand is evenly broadcasted immediately into the wet polymer, until the polymer "capillaries" upward, leaving only dry sand on the surface. The overlay growth should double the wet slurry thickness. This system can incorporate two different polymers as a composite for added protection and aesthetics, and an anti-slip aggregate in the topcoat. Applicators can finish with a solid pigmented color using natural silica sands, or a random flake with a clear topcoat. With pigmented silica sands, a clear topcoat is applied (with or without anti-slip aggregates) to complete the surface profile. These systems range from 125 to 175 mils thick.

**SELF-LEVELING OVERLAYS** are epoxy polymer concrete systems that are applied at 125 to190 mil thicknesses and don't require broadcasting of aggregate into the system. They are self-priming and create a flat, smooth, mirror-like finish with a very high gloss. Self-leveling overlays can be finished as solid pigmented or random flake systems with anti-slip surface profiles in the topcoat. These are ideal when the client requires fast placement or additional durability. The speed and ease of placement of these systems make them particularly attractive to contractors.

**TROWELED POLYMER CONCRETES** have many uses. They may be used as the foundation for another polymer overlay by leveling or regrading the existing floor surface. They also may become the final exposed decorative surface. There are four categories for troweled polymer concretes.

**1. Closed Dense Systems** are troweled polymer concretes consisting of select graded silica sands and an epoxy binder. They are very dense with less than 2% air content. Typically, they are the foundation overlay material to regrade or level the floor for selected decorative overlay systems. Sometimes the epoxy will be pigmented and used for decorative applications as a solid color. Other choices include pigmented sands using a clear epoxy binder. These systems may be hand-troweled, screed and hand-troweled, or screed and power-troweled. By changing the aggregate size, they may be applied at any thickness, from feather edging to many inches thick.

**2. Decorative Natural Stone Systems** are troweled polymer concretes consisting of natural stones of graded sizes similar in shape (no pigmentation added to the stones), typically without sands in the aggregate blend. They yield a variety of looks, textures, and colors. The stones are bonded with a clear epoxy binder. The overlay is very dense with less than 5% air content. They may be hand-troweled, screed and hand-troweled, or screed and power-troweled. The top of the aggregate is protected with a clear polymer and anti-slip aggregates that do not hide the beauty of the natural aggregate color. These systems range from 90 to 375 mils thick.

**3. Closed Decorative Terrazzo Systems** are troweled polymer concretes consisting of natural-colored stones of graded sizes and similar shapes. They are bonded with a pigmented epoxy binder that complements and highlights the ground-colored stones. The overlays are very dense with less than 2% air content. They are applied with screed and power-troweling methods. The exposed floor surface is then ground smooth and polished. The top of the aggregate and exposed epoxy binder is protected with a clear polymer. Anti-slip aggregates typically are not used on these super-smooth floor surfaces. The thickness of this thin-set polymer concrete ranges from 250 to 375 mils thick.

**4. Decorative pigmented stone systems** are troweled polymer concretes consisting of pigmented aggregates of similar shape and size, closely graded to 3 to 4 mm in diameter. They are bonded with a clear epoxy binder at contact point locations only, instead of filling the voids between the stones like other polymer concrete systems. This bonding technique creates an open decorative system for safe walking surfaces because water, ice, and snow on shoes fall into the overlay open areas and do not stay on the surface. The overlay is placed by hand- or power-troweling methods. The top is protected with a clear polymer and anti-slip aggregate that does not hide the beauty of the aggregate color selection. This system is normally 375 mils thick.

While you may not think of yourself as an artist, these polymer floor systems offer an endless array of artistic effects that will greatly enhance a building's décor. Your familiarity with the many options can be a great value-added service to your clients. Stay on the lookout for future articles on the physical properties of decorative floor systems. CP

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