

# Garage Floor Coatings **Pick Up Speed**

**Polyaspartic polyurea finishes are low mil buildup, resistant to chemicals, and quickly installed**

By Jeanne Fields

The trend to upgrade your garage floor is gaining popularity. This additional space accommodates entertainment areas, second kitchens, and workshops, and homeowners understand that this existing square footage can be the least expensive expansion to their home. Decorative finishes, such as vinyl color flake, quartz aggregates, and embedded images, are being sealed with epoxy coatings, acrylic sealers, and now polyaspartic polyurea floor coatings.

These clear coat products are being used with colored, stained, and stamped concrete. Contractors are discovering that polyaspartic polyurea systems increase profits because of their quick installation time and lack of client callbacks.

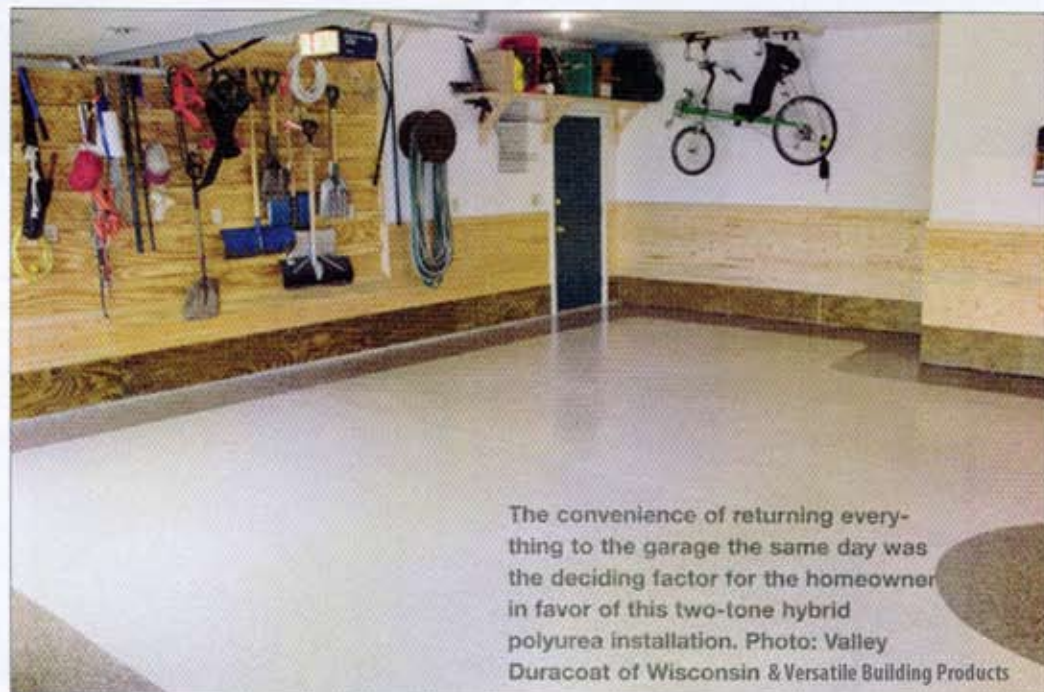
#### NEW COATING CHOICES

Manufacturers offer garage floor coatings in a range of products with different degrees of moisture resistance, breathability, user



The 1/4-inch vinyl chip garage floor coating is a 20 mil polyaspartic polyurea installed within a day with an embedded vinyl logo. The saddle tan chip color is a favorite choice among homeowners. Photo: Joe Sheehan

friendliness, and mil thicknesses. Products are formulated for the high-end professional and do-it-yourself homeowner. Some manufacturers produce hybrid polyureas with similar performance characteristics as their pure counterparts. "The polyaspartic polyurea benefit for a floor coating application is that it is light stable; optically clear; does not yellow, chalk, or fade; will cure and harden in all weather and temperature applications (even below-zero temperatures); has a fast cure speed, one-day application, and walk-on capabilities with property performance that has excellent abrasion,



The convenience of returning everything to the garage the same day was the deciding factor for the homeowner in favor of this two-tone hybrid polyurea installation. Photo: Valley Duracoat of Wisconsin & Versatile Building Products



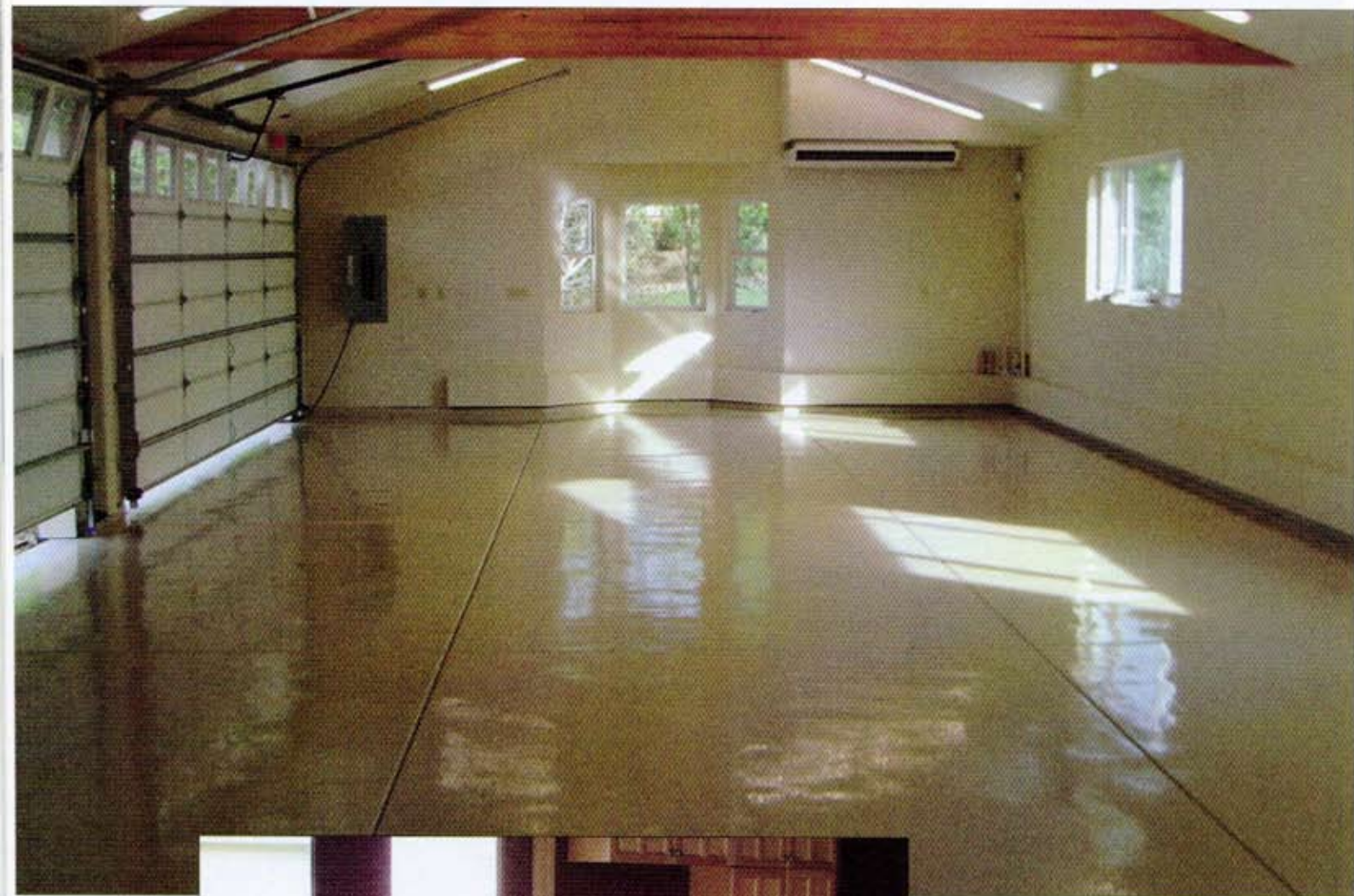
**Until recently, the well-established two-part epoxies were the only option for concrete coatings.**

chemical, and hot-tire resistance," says Jack Bracco, president, Flexmat.Coatings, New Kensington, Penn.

Until recently, the well-established two-part epoxies were the only option for concrete coatings—sometimes with urethane toppings. Epoxies have a longer cure time and are more labor intensive to install. Urethanes evolved to produce coatings with a longer life, toughness, and UV stability, but they required solvents and volatile organic compound (VOC) restrictions

limit their use in many areas. "This spurred the need for polyureas," says Mark Glendrange, technical director, Versatile Building Products, Carson, Calif. "They are a type of polymer akin to the urethane family, tougher than epoxies in strength, and scratch- and abrasion-resistance, and they reduce VOCs considerably."

Originally, polyureas required expensive spray equipment that could mix parts A and B at the nozzle tip, with curing happening a few seconds after spraying. The introduction of the



Above: "Builders love the shine of the hybrid polyurea topcoat finish. They find that dressing up the garage floor is a selling point that helps to reduce the number of days that homes are on the market," says Mike Muersing, owner, Versatile Building Products, Carson, Calif. Photo: Phoenix Flooring of California & Versatile Building Products, Left: There is a large temperature range for installing polyaspartic polyurea floor coatings; it makes year-round work possible for contractors in freeze/thaw climates. Photo: Garage Floors 1



polyaspartic polyureas gives contractors approximately 30 minutes of working time after mixing before curing takes place. They also offer quality penetration into the concrete substrate, which is difficult to achieve with epoxies.

"In almost all instances, we can be in and out of a garage in one day," says Sean Shiers, co-owner with David Schneider, Slide-Lok of Denver by Global Garage, Denver, referring to the quick installation time found when using polyaspartic polyureas. Polyaspartic polyureas do not require a deep profile preparation. "They penetrate the concrete with 'wetting' capabilities that provide an excellent bond ability after low-profile preparation," says Joe Sheehan, Garage Floors I, St. Paul, Minn.

Shiers can prepare a garage floor quickly by diamond grinding the surface with 60-grit pads. When preparation is complete, his two-man crew can coat up to 2000 square feet in one day. Homeowners can walk and drive on the surface, and move their belongings in by the next morning. He uses polyaspartic polyureas for monolithic three-part applications consisting of the primer sealer, the clear bedcoat for vinyl chip applications, and the clear final top sealer. These three layers all use the same basic material—parts A and B mixed at a 1:1 ratio. "Since all the

material is drawn from the same source, you can measure exactly within a cup of what is needed, avoiding waste," says Sheehan.

Steve Conklin, owner, Garage Dekor, Eagle, Colo., prefers the hybrid polyurea because it has a slightly thicker mil to each layer—three coats achieve a 25-mil floor. This thickness works better for him especially if a shot blast preparation is required to open the surface of the concrete. He also likes polyureas because of the slightly slower set time when compared to polyaspartic polyureas. Nevertheless, both systems include longer pot life and faster set time when compared to traditional epoxy coatings.

#### THE PROCESS

Applying a polyaspartic polyurea system to a garage floor usually requires three steps. Contractors lightly grind the floor not only to free it of laitance but also to flatten curled joints. Cracks and joint repair are made with polyurea or epoxy products before placing the primer coat. "Polyaspartic polyureas can provide up to 30% elongation factors, which is good in the Denver freeze/thaw climate where the ground movement raises and lowers concrete slabs," says Shiers. "The material also expands without cracking over the repairs and expansion joint material."



Wearing cleats, a worker walks immediately into the polyaspartic polyurea bedcoat to broadcast the 1/4-inch vinyl chips. Tossing the chips upward delivers a consistent finish with a wide chip-spread.

## Epoxies and Other Options

"There is a growing high-end garage floor market for epoxies," says Tim Goote, owner, Acme Epoxy Flooring, Grand Rapids, Mich. "It's easy to clean, seamless, and people love to look at it."

Goote does a shot blast preparation for garage floors, fills cracks with flexible epoxy, squeegees

out the epoxy, sprays flake with a hopper gun, and lets it cure, usually overnight. The next day he scrapes the extra chips and applies a clear polyurea topcoat. The nonbreathable epoxy reduces MVT. He says there are some problems with outgassing that create bubbles in the epoxy, but adding aggregate holds the

bubbles down. His usual time period from beginning to end for 600 square feet is two days and a morning, including preparation time.

"Good preparation is the key. I provide a three-year warranty for delamination and discoloration. If it lasts three years in Michigan it will stay," says Goote.

The polyaspartic polyurea primer sealer reduces moisture vapor transmission (MVT) with its penetration and bonding ability. "The primer coat wets and penetrates into the pores of the prepared concrete enhancing its bonding capability. This reduces MVT. You can see it sink into the floor," says Sheehan. "Very little of it remains on the surface of the concrete." A calcium chloride test should show the concrete's moisture content to be below 3 pounds per 1000 square feet. The total mil thickness of the polyaspartic polyurea is about 20 mils when vinyl chips are included.

The tinted primer is the base color for the coating; it should look solid and opaque.

Sheehan recommends going over the floor twice for a consistent base application. The primer has an approximate 25-minute pot life. Although the cure occurs chemically, it still can be affected by heat and humidity; cold weather and higher humidity requires more work time. When primed and with the background color in place, workers can be back on the floor after 30 minutes for the next step.

Next, the clear bedcoat and decorative application is applied. "This coat is rolled out to a 2-mil thickness using a 3/8-inch nap roller," says Sheehan. "It should be rolled and then cross rolled; it will not pull or produce air bubbles.

The 1/4-inch vinyl chips are easily broadcast by hand into the 2-mil clear bedcoat." The bedcoat saturates the chip, and aligns them parallel to the floor overlapping one another and hiding the color layer underneath for a smooth surface. "Epoxies, because of their viscosity, cause chips to lie on their edge and show the background color. With polyaspartic polyurea, the chips, surrounded by the clear low-viscosity resin, are encapsulated and that builds strength in the inner layer," says Bracco. At the same time the bedcoat is applied, workers broadcast the chips to the point of rejection. After the cure period—about 45 minutes in ideal conditions—the chips are scraped to knock off any edges and the small fragments vacuumed off the slab.

The final 6-mil clear topcoat is applied giving the topping durability from impact, abrasion, and hot-tire resistance, while adding brilliance to the topping. "The clear coat causes the color to pop and also is an excellent sealer for chemical- and water-based stained or stamped concrete," says Bracco. The difference with the hybrid polyurea is that the base primer is clear and the midcoat tinted. Joe Kutivan, owner, Color Craft Custom Coatings, Chula Vista, Calif., likes this because of the dark appearance to the first wet-out coat and the tinted midlayer permits



New polyurea and polyaspartic polyurea technology reduces application time, creating an opportunity for beautiful hard-wear surfaces.

workers to see clearly where they need more flake coverage.

#### CHANGE IS GOOD

Homeowners' new interest in turning their garage space into an additional living area changes the strictly utilitarian view of the garage and opens the door to decorative floor treatments. There are excellent contractors at work with epoxy coatings and installing colored, stained, and stamped garage floors. New polyurea and polyaspartic polyurea technology reduces application time, creating an opportunity for beautiful hard-wear surfaces. ABC's *Extreme Makeover: Home Edition* recently showcased a residential wood floor topped with polyureas. The floor received a 60-grit grind and a primer application, and a natural mica chip imported from Japan was broadcast into the white-tinted polyurea mid-layer. "After the clear topcoat application, it looked like the inside of an abalone shell," says Kutivan. "Now homeowners have the possibility for a quality floor that did not even exist two to three years ago." ●

— *Jeanne Fields is a freelance writer and owner of Fields Marketing, Douglas City, Calif., providing services to the decorative concrete industry.*

### What makes polyaspartic polyureas unique?

- When cured, they tolerate temperatures up to 350° F
- Resist stains from acid, oils, foods, and more
- Install them down to -30° F
- Cure time is 30 minutes
- Flexibility and elongation factors are high
- Abrasion resistance is high
- Low mil buildup saves on cost of material
- UV light stable
- Waterproof

# Learn Create Succeed

## Concrete Countertop Education developed by Fu-Tung Cheng

The Essentials Workshop  
*the basics simplified*

Advanced Training Seminar  
*taking design and fabrication to the next level*

Concrete Countertop Fabricator Training  
*for the concrete professional who says  
"yes" to business success*

For the ultimate in concrete project success  
choose CHENG Concrete Products

[www.concreteexchange.com](http://www.concreteexchange.com) 510.849.3272

circle 208 on reader service card

## HOW DO YOU MAKE A LOT OF RUBBER MOLDS IN A HURRY?



It's EZ!  
Make Large  
Molds, Make  
Many Molds  
Quickly With  
The New  
EZ-Mix™  
Meter Mix  
Machine



The EZ-Mix Meter Mix Machine is small, powerful and will pump rubber from 55-gallon drums or 275-gallon totes. The machine will mix and dispense VytaFlex™ mold rubber at the rate of 20 lbs. per minute, which translates into an immediate labor savings.

**DO THE MATH!** The EZ-Mix™ Meter Mix Machine will let two men make more molds in 20 hours than five men can hand mixing and pouring rubber in 40 hours. The machine perfectly mixes the rubber with less air entrapment -- resulting in stronger, longer lasting production molds.



Free CD-ROM  
800-762-0744

Our World Famous  
Toll-Free Technical  
Help Line Can Get  
You Started Making  
Your Own Molds,  
Liners, Skins  
And Stamps.

SMOOTH-ON



[www.smooth-on.com](http://www.smooth-on.com)

circle 232 on reader service card