



SEAL THE DEAL

## Self-Leveling Floor Underlayments by George Fencil

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Today, most contractors who are concerned about the quality and long life of their floors turn to various underlayment systems to protect the finished flooring, whether carpet, wood, ceramic tile or concrete. In the past, substrate underlayment simply consisted of plywood or cement board. Unfortunately, after time—especially in the case of water intrusion—the wood would warp and buckle, causing cracks in the finished flooring. Another detriment was that many types of wood contain resins and solvents that can seep into the flooring. More recently, contractors have used gypsum fiber boards as underlayment materials, but these too can fall victim to moisture entering through crawl spaces in the foundation, necessitating the use of a vapor barrier. Others use cork underlayment sheets, which are great as an acoustic insulator but have thousands of tiny pockets that can allow contaminants from the substrate to penetrate the flooring. This is why many builders and subcontractors are turning to self-leveling cement underlayment products, including those offered by companies like Drytek.

Located in Portsmouth, NH, Drytek is a manufacturer of concrete flooring solutions, offering a line of self-leveling products that are durable and attractive. The company's quick-drying, low-alkali formulation allows contractors to dramatically speed up the building process, especially in challenging environments such as lofts, suspended walkways and weight-constrained high-rise floors in older buildings.

Drytek recently unveiled its new FLOWLITE System at the World of Concrete show in Las Vegas. The FLOWLITE System consists of a base layer of Drytek 3000 as the lightweight component, plus a top layer of Drytek 7200 or Drytek 7400 self-leveling cement. The Drytek 3000 allows for the build-up of floor depth at an ultra-low density, and it provides insulating and sound attenuation benefits. The 7200 can be used over a wide range of substrates, from concrete to ceramic tile. It has a tensile bond strength of 435 psi and a compressive strength after 28 days of 4,350 psi. At a recommended pour depth of between 1/8 inch to 1¼ inch, it can be walked on in one to four hours.

The Drytek 7200 will cover 30 sq. ft. per 55 lb. bag when applied at ¼-inch thickness. The 7200 underlayment can be applied with either a leveling pump or barrel mix, using a bullfloat to finish. Since the leveler will take on the temperature of the substrate to which it is adhering, the ideal temperature range for application is 68 degrees, with the low-end

benchmark temperature being 43 degrees. There could be a separation of materials and aggregate on the top if it is too cold. Conversely, you could get a rapid set if it is too hot, resulting in less working time for the mix.

The Drytek 3000 substrate base is a lightweight cement weighing 30 lbs. per cubic foot (It is an eighth of the weight of concrete.), which is walkable within 12 hours—ready for capping of DRYTEK self-leveling material within 24 hours. It has a compressive strength of 6400 psi and comes in a bag ready to mix with just water.

In cases of contamination, you may want to create a floating floor, so that you pour a slab on top. In this way, the new slab is decoupled from the existing substrate. so that you create a slab on top. If a floating floor or decoupling is desired, lay polyethylene (PE) sheeting (6 mil minimum) over the entire floor surface. Next, fold the sheet up at the walls and other contact points to create a leak-free surface.

“We’re in the business of substrate preparation,” said Drytek President Terry Cotton. “We are also in the wear surface business.” Citing several colorful, polished samples of concrete, he added, “That is like a stained concrete, and now you have a pretty surface to work with. We add the pigment at the plant... or you can add a tint or dye topically.”

Cotton is a true New Englander, having been born in New Hampshire and growing up in Connecticut. He worked for U.S. Gypsum Company right out of school and founded Drytek in Sweden in 2003. Cotton prides himself on his company’s commitment to customer service and will always send a field rep to inspect a job before recommending a product. The home tech will assess the strength of the existing surface first.

“If you have a concrete slab that is not in the condition you want it to be in—spalled, not level—God help the concrete contractor.... You may not always achieve the right level or a smooth surface. If you use very thin VCT (vinyl composition tile) everything will telegraph through it.”

“Once a concrete contractor has achieved a goal of getting a flat-level surface, he has had to do a lot of things to get him there,” said Cotton. “Likely, he has densified the surface, sometimes using a curing compound or power troweling the heck out of it. The more you power trowel it, the more you create a dense surface—and that allows moisture to enter the concrete slab, and it takes longer to dry out.” He added that the homeowner or general contractor may find that even though the surface is smooth the floor is not level and may be out of whack by  $\frac{3}{4}$  of an inch, and their choice may be to shotblast the surface to make it level. “This is where we come in,” he said.

The company’s 7400 brand is a fast-drying, dual-purpose self-leveling cement that can be used as both a durable and attractive interior wear surface as well as a high-performance underlayment for troubled substrates. “This 7400 series white self-leveling cement is like an artist’s canvas,” Cotton explained.

“It has a Richard James sealer and is an attractive, aesthetically pleasing and functional surface.”

He recommends a sealer over any interior surface that is decorative, such as in a living room, due to the pervious nature of the concrete. “If you are having a cocktail party and someone spills red wine—goodbye. But, if you’re in a warehouse and it doesn’t matter, I would recommend our 9200 or 9400 product.”

Cotton explained that 90 percent of his company's product is used for renovation projects. Many times, his workers will rip up the VCT at a retail store, for instance, and find glue and other adhesives that must be removed. So cleaning the substrate is very important to the successful performance of the leveler. Weak surfaces must be mechanically cleaned to sound and solid substrates by shot-blasting, scarifying or performing similar abrasive actions.

“Our product is a ... low-alkali leveler with extremely low shrinkage,” he noted. “You want to create an alkali barrier. You put Drytek down as a hydrate and you create a permanent buffer that will permanently stop alkali migration to the surface, which is common in Portland cement. Portland cement plus moisture equals high alkalinity and high pH. The alkali salts

will migrate up through Portland cement and if you have an adhesively applied flooring, it will aggressively attack the plasticizer in the adhesive and it will, essentially, turn to mush. And then you’re going to have a floor failure.”

Cotton said it could take up to eight months for the pH level to decrease to acceptable levels when pouring a new slab and waiting for it to dry. Instead, one could put down Drytek’s leveler, which could be ready to go in as little as four hours.

The FLOWLITE system weighs 30 lbs. per cubic foot with a half-inch cap, compared to the company's regular leveler at 106 lbs. per cubic foot. It is an eighth the weight of regular concrete. Drytek uses 30 percent recycled material from iron ore slag, as well as fly ash, to comprise its leveler. Cotton is quick to point out that this cement is not meant for structural work but, rather, for renovation and topical work over the concrete. Once you put the cap on, though, it will have a compressive strength of 3500 psi.

The burgeoning company recently hired a new marketing director, Bruce Demers, to help promote the product nationwide, as well as internationally. Currently, it has about 20 distributors, mostly along the eastern United States.

**For more information on the FLOWLITE system, go to [www.drytek.com](http://www.drytek.com).**