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TECHNICAL BULLETIN

Subject: Polishing TRU™ Self Leveling

TRU™ Self Leveling is the only overlay specifically designed for polishing. TRU™ is *not* a modified Portland cement-based product. Unlike portland cement-based products, which are typically highly polymer modified, TRU™ has only trace amounts of polymer. The strength of TRU™ comes from the Rapid Set Cement base. Rapid Set Cement, manufactured by CTS, forms an ultra-dense interlocking matrix as it hydrates with the mixing water. When TRU is mixed it efficiently uses up the mix water and the advanced cement chemistry creates a three-dimensional lattice that results in a very dense material that is ideal for polishing. With the absence of high amounts of polymer, TRU™ takes dyes and stains extremely well. TRU™ has 24 hour compressive strengths of 5000 psi, and high flexural strengths of 850 psi in 24 hours and 1900 psi in 28 days.

Outline of Steps for Polishing TRU™:

1. *Prepare the surface*

The surface must be clean, sound and free of all bond-breakers. Surface should be prepared to ICRI surface profile of 3-5. Shot-blasting is known to be the best method to achieve the proper surface profile.

2. *Prime the substrate*

It is important to seal the substrate to minimize water loss and allow the TRU to properly hydrate. A properly sealed substrate also eliminates the formation of pin holes and maintains working time. The preferred method is 100% solids epoxy with sand broadcast, which can seal the substrate in one coat. Alternatively, the substrate can be sealed with Rapid Set Acrylic Primer but this may require multiple coats on very porous surfaces

a. 100% solids epoxy: Follow manufacturer recommendations for mixing and placing the epoxy. Immediately after application, broadcast a washed, graded silica sand with blends ranging from #30 - #65 to refusal (2/3 - 1 pound per square foot) into the epoxy. All loose sand should be thoroughly removed roughly 4-6 hours after application depending on the setting time of the epoxy. TRU Self Leveling can be applied directly over well bonded sand at this time. No further priming is necessary.



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b. Rapid Set Acrylic Primer: Prime the substrate thoroughly and uniformly with Rapid Set Acrylic Primer according to the Data Sheet guidelines. Apply multiple coats if necessary.

3. *Use of integral colors*

Integral colors may be used as required; however, the type of color and the amount used may alter and/or decrease the performance characteristics of TRU™. For this reason, a test pour should be conducted using uncolored TRU™ as well as TRU™ with the intended color for comparison. All performance characteristics such as water demand, flow time, set time, ease of finishing, need for water curing, and TRU™ film formation should be noted. If the color used significantly alters one or more of these characteristics the color additive should be reduced or eliminated.

Color additives should always be blended into the mix water prior to adding TRU™. Never add more than the recommended water dosage even if the color adversely affects the flow.

4. *Placing the TRU™*

Mix and place the TRU™ as per CTS Cement specifications. Do not exceed 4.5 quarts of water per 50 lb. bag. Apply at a minimum thickness of 5/16" over the highest point in the floor. The average thickness should be 3/8" or greater.

5. *Grinding and Polishing*

TRU™ Self Leveling may be polished after 24 hours at normal conditions. At this time the compressive strength will exceed 5000 psi, roughly 75% of its total strength. In 28 days the strength will exceed 6500 psi.

Although it is acceptable to start the dry grinding process in as little as 24 hours, the TRU™ has a built in film or skin that is designed to allow the material to hydrate properly. Removing this thin polymer film at such an early stage of the curing process can contribute to surface micro-cracking due to improper hydration. To offset this, it is good practice to wet the surface with a floor scrubber or similar method after each diamond cut until the film is replaced with a densifier and/or guard product from an approved manufacturer. The grind and polish process generally creates heat and the water introduced by the floor scrubber is generally enough to allow for proper hydration.



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6. *Topical Dyes and Stains*

Since TRU™ cures to a light gray / off-white color and has just trace amounts of polymer, it accepts dyes and acid stains very well. Consult with a dye or stain manufacturer on when and how best to apply the dye or stain.

Polishing any topping material requires a high degree of experience and craftsmanship. CTS Cement suggests performing a meaningfully sized mockup prepared exactly as the finished floor will be. The owner's acceptance should be obtained prior to installation.

CTS Cement has worked in conjunction with several polishing equipment manufacturers. For best practices from these equipment manufacturers, contact your local Rapid Set representative.

TRU™ Technical Bulletin 05/06/11. For updated information please visit www.rapidset.com or contact your technical representative at 800-929-3030.