



Application of acrylic coatings over concrete

Concrete can be a long lasting and low maintenance base for sports surfaces if the concrete is prepared properly. Acrylic coatings on concrete without proper preparation tend to bubble or blister, leading to de-lamination. This condition is caused by the nature of concrete itself and not installation or coating related.

Concrete has strong chemicals that may migrate up through the surface and leave a residue when proper preparation is not performed. Water and water vapor are absorbed and released naturally by concrete and can cause peeling and blistering in surface coatings if concrete is not correctly prepared. There are steps that must be taken when pouring new concrete that can help ensure better bonding of the surface coatings.

Some resurfacings over concrete slabs, whether driveways or tennis courts, are on slabs that were not prepared correctly for accepting surface coatings, so owners need to be made aware of the possibility of bonding problems. Potential issues include bubbling and delamination because of gasses and water vapor passing thorough improperly prepared concrete and getting trapped between the concrete and coatings. Additional coatings installed during a resurfacing over a concrete surface reduces the ability of gasses and water vapor to escape the concrete and further adds to the possibility of such issues. Due to the sealing nature of new and additional coatings, bubbling and delamination may occur even if no previous issues were present. If this happens, the cause is not the new coatings, rather the original concrete preparation. If proper concrete preparation wasn't performed, no warranty is available on new coatings. It is recommended to test for the acceptability of new coatings prior to resurfacing (See Helpful Hints below).

These steps should be taken on new concrete slabs before surface coating:

1. A vapor barrier must be installed under new slabs. Vapor barriers generally consist of two layers perpendicular to each other with taped joints.
2. On the concrete, a broom finish is necessary to ensure a mechanical bond of the coatings.
3. Concrete should naturally cure a minimum of 30 days, preferably 60, to allow proper curing. Spring and Fall seasons tend to require longer curing times.
4. Curing agents can cause substantial issues and are not recommended as they may interfere with bonding. Moisture curing is recommended. If a curing agent is

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requested, verify with the manufacturer there won't be adhesion issues using a latex product over the concrete.

5. After curing, concrete must be acid etched with a water diluted muriatic or phosphoric acid solution and thoroughly rinsed or pressure washed.
6. A specialty latex or epoxy primer must be applied to the top of bare concrete after etching. The primer must be latex compatible. ACRYTECH Adhesion Promoter is a 100% self-crosslinking, ultra-low VOC acrylic emulsion suitable for priming concrete. Concrete must be dry, so water vapor transmission won't affect bonding of primers or coatings.

Helpful Hints

1. Existing paint may need to be removed if there is delamination or peeling.
2. If an acid solution does not bubble on the concrete surface it is not going to etch the concrete.
3. To acid etch fill an empty bucket with 4 gallons of water and pour the acid into the bucket. This helps with splattering and potential acid burns. Wear protective clothing, boots and goggles. Pour the solution onto the surface and scrub using stiff brushes. Push brooms work well. Once the solution stops bubbling you are finished with that area and you can move to the next. It is very important to rinse off the spent acid. Pressure washing is recommended.
4. A quick test of how well the new surface will bond is to stick a piece of masking tape on the slab. If it doesn't stick, then the paint may not stick without more preparation. Another test is to paint a small test area with surfacing materials and after drying stick a piece of masking tape on it. Peel off the tape. If the paint sticks to the tape instead of the concrete, there could be a problem.
5. A good test for moisture content is to tape a piece of plastic onto the surface and see how much condensation occurs under the plastic after 24 hours.
6. Concrete that has been slick finished with commercial finishing equipment is difficult to obtain a good bond. Shot blasting, scarifying or extreme etching may be necessary.
7. Fewer coats are better than many coats. More coats seal off water vapor transmission and promote blistering.
8. Fibers in the poured concrete can be problematic but can also aid in bonding of the surface coatings. If the concrete has fibers, they may not be evident until an acid bath is completed. After the first coat of ACRYTECH the fibers may stick out from the surface. This gives the coatings a stronger bond than without fibers in the concrete. Before the final coat is applied the visible fibers can be scraped or burned off with a propane torch resulting in a fiber reinforced coating.

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