

Product and Application

This specification describes the application of the Retro-Coat[®] System. The minimum thickness of the system is between 26-36 mils, including a 20 mil minimum application of Retro-Coat.

Advantages

- Designed specifically to mitigate vapor intrusion in existing structures
- Retro-Coat is a wearing surface, meaning no additional concrete protection is necessary
- No odor and fast cure time reduce building downtime
- Carpet, tile, linoleum or other floor coverings can be applied directly over Retro-Coat, if desired
- Retro-Coat can increase the performance of an existing active sub-slab depressurization system
- Retro-Coat can aid in the retiring of existing active systems
- Available and installed by Land Science certified contractors

Acceptable Manufacturers

Retro-Coat as manufactured by Land Science San Clemente, CA.

Applicator

Applicator must be a certified contractor of Land Science.

Performance Criteria

Retro-Coat as manufactured by Land Science San Clemente, CA.

Property	Test Method	Typical Value
Diffusion Coefficient	Columbia Labs	PCE: 7.6×10^{-14} m ² /s
		TCE: 8.2×10^{-14} m ² /s
Tensile Strength	ASTM D-638	8,200 PSI (minimum)
Tensile Elongation	ASTM D-638	5% (minimum)
Flexural Strength	ASTM D-790	10,200 PSI (minimum)
Hardness, Shore D	ASTM D-2240	82 (maximum)
Gardner Impact	ASTM D-2794	80 inch-pounds (minimum)
Bond Strength	-	to concrete: >350 PSI (concrete fails)
Vapor Transmission Rate	ASTM E-96	0.027 perms (maximum)
Water Absorption	ASTM D-570	0.02% in 24 hours (maximum)
60° Gloss	-	100 (minimum)

Materials

Retro-Coat Part A shall be a modified epoxy containing special flexibilizers and specially formulated resins for superior chemical resistance and enhanced resilience. No solvents are allowed.

Retro-Coat Part B shall be customized blend of hardeners specifically formulated to maximize chemical resistance.

Surface Preparation

All existing surfaces that will be covered with the systems specified herein should be mechanically ground, shot blasted or sand blasted to yield a minimum 60 grit surface texture. All loosely adhered coatings will be removed. Any grease and other contaminants found on the concrete must also be removed.

All open cracks $\frac{1}{2}$ " and greater should be v-notched to a $\frac{3}{4}$ " width by $\frac{1}{2}$ " depth and cleaned of any debris. Such cracks should be filled with Retro-Coat Gel and struck off flush with the surrounding surface.

Cut back and/or remove any expansion joint backing or filler strips to a minimum of $1\frac{1}{2}$ " deep. Insert disposable filler in the joints to prevent filling with the overlayment materials and to allow for accurate location of final saw cuts in the overlayment.

Material Application

Only apply Retro-Coat at temperatures above 50° F. It is ok to apply over a damp surface, but not standing water. If hydrostatic pressure is suspected, test for concrete moisture. Contact your Land Science representative for additional information.

Retro-Coat 2-Part Caulk

Apply Retro-Coat 2-Part Caulk around the base of all pipe penetrations making sure to fill any gap between the penetration and concrete slab.

Apply Retro-Coat 2-Part Caulk to the joint created between horizontal and vertical transitions. The caulking material should be applied and pressed into the joint filling any gaps that might be present.

Retro-Coat Primer

Apply Retro-Coat Primer to all areas at a thickness of 6 mil (250 ft²/gal) and allow to dry tack free. In areas where the concrete surface is in need of slight repair or needs to be leveled, a slurry form of Retro-Coat Primer called Retro-Coat Primer-S can be applied with a flat squeegee. Retro-Coat Primer-S is self priming and does not need to be primed again.



Completed surface preparation consisting of shot blasting, Retro-Coat Caulk, to fill joints and cracks and a 6 mil application of Retro-Coat Primer

Retro-Coat

Mix each component of Retro-Coat for 2-3 minutes with a jiffy-style mixer at medium speed before combining. If a pigment pack is required for a custom color, first add the pigment pack to Part A and mix well. Add Part B to Part A (in 2A:1B ratio) and mix for another 2 to 3 minutes. Do not add any solvents.

Immediately pour contents onto floor in a ribbon pattern, squeegee, and then back roll with a $\frac{1}{2}$ " nap roller at a coverage rate of 160 ft²/gallon to achieve a film thickness of 10 mils.

Apply a second 10 mil coat within 7-8 hours to achieve a total thickness of 20 mils. Repeat as necessary to achieve specified thickness.

If a flooring material will be placed over Retro-Coat after it is applied, or appearance is not a priority, a single 20 mil coat can be applied.



Application of Retro-Coat to a 20 mil total thickness

Retro-Coat TOP WB

Retro-Coat TOP WB can be installed for aesthetic purposes to protect the Retro-Coat system from ambering or color fading due to fluorescent and UV light exposure.

Apply Retro-Coat TOP WB over a tack-free Retro-Coat in a single coat at a coverage of 250 ft²/gal (6 wet mil).

Protection of Finished Work

Prohibit foot traffic on floor for 24 hours after application (at 70° F). At 50° F, this time should be extended to 48 hours. The coating will be fully cured after approximately 7 days at 70° F. Cooler temperatures will require up to two weeks to fully cure.

During the curing time, immediately rinse off any chemicals that may come in contact with the freshly laid floor.

Cleanup

Properly dispose of all unused and waste materials.

Tools can be washed in warm, soapy water when wet, but after drying, can only be cleaned by grinding or with a paint stripper.

Unused Part A can be set off with proper amount of Part B hardener and disposed of in regular trash bins.

Floor Care

The standard smooth surface of Retro-Coat should be cleaned on a regular basis by damp mopping the floor with conventional commercial cleaners. It is important to first remove any grease or oils by a suitable cleaner, preferably a citrus based cleaner. Rinse with clear water to help eliminate film buildup and then allow to dry.

Additional steps can also be taken to prolong the look and life of a seamless floor:

- Never use abrasive powder cleaners like Ajax or Comet as they tend to scratch the floor.
- Protect the floor during transference of heavy equipment
- Educate the drivers inside the building of the importance of avoiding “jack-rabbit” starts and stops, as well as keeping the metal forks lifted
- Regular cleaning should take place as to not allow the buildup of abrasive material, such as sand or dirt, on the coating
- Eliminate the use of all metal wheels and instead use light-colored polyurethane wheels.
- Do not slide heavy metal totes, drums or bins across the floor
- Immediately hose down chemical spills, especially on newly laid floors.

Warranty

Land Science warrants Retro-Coat to be free from defects for a period of one (1) year from the date when applied in accordance to Land Science's directions for application.

Bond failure, peeling or delamination due to water or moisture intrusion through the slab substrate will not be covered, nor will any defects to the Retro-Coat layer caused by osmotic vapor blistering.

Due to uncontrolled color tinting from each color batch, colors, textures, patterns, and shading may vary from job to job and throughout larger areas. Color and texture samples used by Land Science are approximate only and may vary from the completed project.

Any damage to the coating that is caused by movement of the underlying substrate (i.e., concrete, joint material or other such underlayment), such as concrete cracking, movement of concrete, and joints expanding, will not be covered by the warranty. Additionally, some tires may leave an amber colored tire tread mark impregnated into the top layer, this is not covered under the warranty.

Any repairs and/or corrections will be for the defective area only, unless deemed otherwise by Land Science. Due to the custom nature of Land Science coatings, any repairs and or corrections may not match the original work. Land Science will not re-install a brand new flooring system to the entire floor due to colors, gloss or sheen difference, texture difference and/or chips not matching.

Resinous coatings are odorous; we recommend turning off air handlers prior to installation. We hold no liability for these chemical odors.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND THE REMEDY PERMITTED HEREIN SHALL BE THE EXCLUSIVE REMEDY OF THE BUYER. SELLER'S LIABILITY SHALL BE LIMITED TO REPLACEMENT OF DEFECTIVE MATERIAL. IN NO EVENT SHALL SELLER BE LIABLE FOR SPECIAL, PUNITIVE, CONSEQUENTIAL OR INCIDENTAL DAMAGES. THIS PARAGRAPH IS NOT APPLICABLE IN CONSUMER TRANSACTION OR WHERE PROHIBITED BY LAW.

Quality Control

Installer shall use a notched squeegee to apply Retro-Coat to the specified mil thickness and calculations shall be done to determine if the correct amount of material has been applied. Retro-Coat contains 100% solids at the time of application; therefore no material shrinkage will occur during the curing process. One gallon will cover 80 square feet at 20 mil.

A wet mil film gauge can be used to spot check the Retro-Coat thickness to make certain the minimum 20 mil thickness has been applied, though some discretion should be used because high points or low points on the underlying surface can adversely affect the thickness measurements.