



# MOISTURE MITIGATION

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## INSTALLATION GUIDE



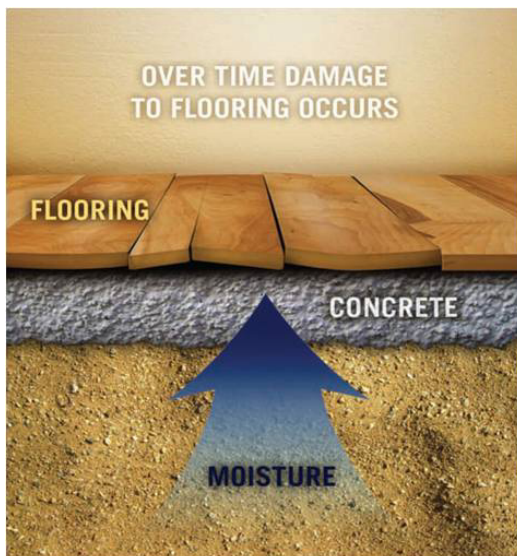
## SUMMARY

Moisture is a small word that can cause big complications for installers, general contractors and building owners. But moisture – and specifically excessive moisture vapor emission – does not have to cause distress. **TEC® LiquiDam EZ™ Moisture Vapor Barrier** can allay the anxieties about moisture damage by delivering a high level of moisture protection extremely efficiently. As the industry's first one-part liquid-based moisture vapor barrier, LiquiDam EZ™ effectively eliminates the time-consuming steps of shot blasting, priming and mixing while continuing to provide high quality moisture mitigation.

## CHALLENGE

### Efficient Protection From Damaging Moisture and Alkalinity

Moisture penetration is responsible for \$1 billion in flooring failures annually. Even relatively low moisture emissions can lead to the deterioration of flooring adhesives. In cases of excessive moisture vapor emission, moisture enters the flooring installations through vapor transmission. This process can start long before you arrive on the job site. In fact, moisture may enter the subfloor when concrete is first poured. A pressure differential then causes the water to migrate from an area of high vapor pressure – such as damp concrete or wet soil – to an area of low vapor pressure, like a dry building interior. This can damage the flooring or tile installation. Protecting flooring systems from severe moisture and alkalinity is essential for successful installations – particularly in commercial environments that cannot afford costly closures.



Moisture may soak into the slab in the form of rain or ground water. The moisture moves through this slab and breaks down the adhesives, which warps and buckles flooring.

Today's construction schedules are more condensed than ever. For that reason, any moisture solution must be installed easily and cure quickly.

## SOLUTION

TEC® LiquiDam EZ™ moisture vapor barrier can help save steps in application of time-sensitive projects with its one-part, liquid-based moisture vapor barrier formula. It holds up in demanding moisture situations and allows for shorter installation time. LiquiDam EZ™ provides high quality moisture mitigation by protecting flooring systems from

damage caused by severe moisture and alkalinity.

The new moisture vapor barrier is specially formulated to be applied to damp or new concrete – as recent as 48 hours old – with a MVER less than or equal to 25 lbs. per 1,000 square feet per 24 hours or a maximum relative humidity of 100%.



LiquiDam EZ™ further saves time by eliminating application steps. Shot blasting may not be required when the moisture vapor barrier is applied to clean, sound concrete, including burnished concrete. It doesn't require priming before TEC® surface preparation products can be applied. Flooring contractors have the option to save time and labor costs through the use of this revolutionary moisture mitigation product.

#### IMPLEMENTATION

To determine if moisture mitigation is required, test your substrate's moisture levels using the ASTM F-2170 test. Because moisture migrates upward from within the slab, measuring moisture at its surface will not accurately portray the subfloor's relative humidity. Probes placed at specified depths inside the slab more exactly measure its relative humidity levels, and as a result, more reliably measure the risk moisture poses to a particular installation. Be sure to follow the instructions of your relative humidity equipment, and refer to the flooring manufacturer's guidelines for the recommended relative humidity levels and testing procedures.



Test the substrate's moisture levels using the ASTM F-2170 test.

The approved substrate must be structurally sound and free of contaminants such as oil, grease, dust, paint, sealers, floor finishes, etc. that could inhibit the bond. Evaluate the substrate for the following four conditions:

1. Surface coatings and/or contamination such as gypsum plaster, joint compound, paint and adhesive. Determine whether this condition exists by

looking at the surface.

### **Preparation**

Scrape off any lumps or loose material. If gypsum plaster and joint compound exist, scrub with warm water and detergent, rinse off the residue and allow the concrete to dry. For paint, sandblast or shot blast.

**2.** Weak top layer or damaged concrete. Determine if this condition exists by scraping the surface with a knife blade. If this process produces a fine powder, than laitance is present. Use a hammer to sound out hollow or weak areas.

### **Preparation**

Remove weak or damaged concrete with a mechanical method, such as shot blasting.

**3.** Invisible contamination, like sealers, curing compounds or oil. To determine whether invisible contamination exists, sprinkle water onto the surface. If it forms droplets without absorbing, the surface is probably contaminated.



Scrape the surface with a knife blade to determine if the top layer is weak or concrete is damaged.

### **Preparation**

Remove contaminated concrete with a mechanical method, such as shot blasting.

### **Note**

Burnished concrete may fail to absorb moisture. However, LiquiDam EZ™ may not require mechanical preparation, such as shot blasting, especially for clean, sound concrete. Apply to test areas to confirm a bond strength of at least 150 psi when tested per ASTM D7234.

**4.** Dirt and Dust. To determine if dirt and dust exists, wipe the surface with a clean dark cloth. If powder is visible on the cloth, the surface is not clean enough.

## Preparation

First, use a dry, clean broom and sweep the entire surface. Then use one of the following methods:

- 1) Vacuum using an industrial-type vacuum.
- 2) Use a stream of potable water with sufficient pressure to remove dust and dirt, allowing concrete to dry before application of LiquiDam EZ™.
- 3) Use a stiff bristled brush or broom to scrub the entire concrete surface with a cleaning product intended for concrete, or a solution of at least 4 ounces of trisodium phosphate per gallon of warm water. Before the solution dries, flush the concrete with clean potable water, allowing it to thoroughly dry before applying LiquiDam EZ™.

A 1/16" x 1/16" x 1/16" mm square-notched trowel, 1/4" lint-free nap roller and handle and cleated hard rubber shoes are required for most installations using LiquiDam EZ™. Since it is a single-component formula, it can be hand-stirred



with a paint stick or margin trowel to a smooth, creamy consistency after opened. The bucket can be resealed for convenience, and the product should be re-blended each time it is opened to be sure any liquid separation is properly mixed.

Joints and cracks should be treated before LiquiDam EZ™ is applied over the whole surface. For static cracks or joints less than 1 mm wide, LiquiDam EZ™ should be applied with a paintbrush to fill

1-part, simply hand stir before use.

in the small space entirely. For control joints and static cracks 1mm-3mm wide, a cementitious floor prep product like TEC® PerfectFinish™ can be applied. It must dry for 12-16 hours before LiquiDam EZ™ can be applied over top. For static cracks and control joints more than 3 mm wide, use a concrete crack filler, such as TEC® Fast-Set Deep Patch Underlayment 305 mixed with TEC® Patch Additive 861. Allow the filled areas to dry at least 16 hours before applying the moisture vapor barrier.

Treat all dynamic (movement) joints with LiquiDam EZ™ by applying a layer into the joint edges with a paintbrush to completely coat the walls of the cavity. Once dried, fill the dynamic joint with backer rod, leaving a minimum of 1/2" open at the top for proper treatment with a sealant.

Once joints or cracks are treated, LiquiDam EZ™ can be poured directly onto

the substrate before being spread with the square-notched trowel. Failure to trowel will result in an uneven coat. Immediately saturate the roller in the initial application of trowel applied LiquiDam EZ™, and then backroll the entire working area for even disbursement. Periodically evaluate the surface to ensure a smooth continuous film.

TEC® LiquiDam EZ™ dries in as little as 90-120 minutes. As the membrane dries it will transition from light blue to dark blue in color. Once the initial coat dries (after 90-120 minutes), the final coat can be applied. Repeat the first coat application steps using the square-notched trowel, followed up with the saturated roller.



LiquiDam EZ™ must be troweled as the first step. Then, use the nap roller to backroll the entire working area for even disbursement.

The second coat must fill any remaining white pinholes from the initial coat. Care should be taken to not gouge or otherwise disturb or damage the dried membrane. Inspect the dried film to make sure there are no pin holes, voids, bubbles or breaks in the membrane. Apply additional LiquiDam EZ™ to fill all voids and allow to dry, making sure that you do not over-work. The unused, uncontaminated LiquiDam EZ™ can be resealed in its container and used up to six months afterwards. After five to six hours of the final LiquiDam EZ™ coat being set, apply an appropriate TEC® cementitious underlayment to ensure proper adhesion to the floor coverings.

LiquiDam EZ™ builds upon TEC®'s flagship moisture mitigation product, [LiquiDam™](#). LiquiDam™, which is a two-part epoxy moisture vapor barrier, also may not require shot blasting and can be applied onto green concrete up to 100% RH. Both can be used for the installation of floor coverings. They are also ideal for use with other TEC® adhesive, patch, underlayment, leveler and mortar products. As a leader in moisture mitigation, TEC® uses vigorous product testing and backs its moisture mitigation solutions with a [25 year system limited warranty](#) for LiquiDam EZ™ and LiquiDam™.

Visit [tecspecialty.com/project-showcase](https://tecspecialty.com/project-showcase) to discover contractor testimonials and high-profile projects featuring TEC® LiquiDam EZ™ moisture mitigation system.