

1. PRODUCT NAME

TEC[®] The LiquiDAM[®]
Penetrating Moisture Vapor Barrier
(TA-213)



2. MANUFACTURER

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3. DESCRIPTION

The LiquiDAM[®] is a low viscosity, high penetrating, two-part 100% solids epoxy. It is specially formulated to be applied to damp or new concrete, as little as 48 hours old with a moisture vapor emission rate (MVER) less than or equal to 25 lbs. per 1,000 ft² per 24 hours (0.12 kg/m² per 24 hours) or a maximum relative humidity of 100%. It is designed to reduce the MVER to less than 3 lbs. per 1,000 ft² per 24 hours (0.015 kg/m² per 24 hours).

The LiquiDAM[®] is colored blue for visual assurance of coverage during the application process. Only one coat required to penetrate and fill voids and gaps to fully seal the substrate and quickly cures as soon as 4-5 hours to provide the benefit of same day installation. The LiquiDAM[®] is a moisture vapor barrier for the installation of floor coverings, tile, stone and concrete toppings. Ideal for use with other TEC[®] adhesive, patch, underlayment, leveler and mortar products.

Key Features and Benefits

- Meets ASTM F3010 product requirements for moisture mitigation systems under resilient floor coverings
- Less than 0.10 Perm Rating (ASTM E96)
- Direct application onto green concrete up to 100% RH
- No shot blasting required for clean, sound concrete (see Section 5 for Surface Evaluation and Preparation Guidelines)
- Can be installed over burnished concrete (see Evaluation Condition 3)
- Permeates to fill voids and gaps
- Same day flooring installation – cures within 4-5 hours
- Only one coat needed
- Zero VOC contributes to LEED[®] project points

Packaging

Two part system components (packaged in a carton) as follows:

Part A: 2/3 gallon (2.84 L) in a 2 gallon (7.57 L) pail

Part B: 1/3 gallon (946 mL) plastic jug

US version

Product #70-9974-1011

Canadian version

Product #70-9974-1013

Coverage

The LiquiDAM[®] requires only one coat with a typical coverage rate of 150 ft² per blended gallon (3.7 m²/L). Coverage will vary depending on surface profile and porosity, ranging from 100-180 ft² per blended gallon (2.5-4.4 m²/L). The finished application must cover the substrate completely without any voids or pinholes to ensure moisture vapor suppression.

Suitable Substrates

- New or existing concrete with a maximum RH of 100% or MVER of 25 lbs. per 1,000 ft² per 24 hours (0.12 kg/m² per 24 hours)

Storage

Store in cool, dry place. Do not store in direct sunlight.

Shelf Life

Part A: Maximum of 1 year from date of manufacture in unopened package.

Part B: Maximum of 1 year from date of manufacture in unopened package.

Limitations

- For interior use only.
- Do not dilute product.
- This is not a waterproofing or anti-fracture membrane.
- Do not bridge existing expansion joints.
- Do not use in temperatures below 50°F (10°C).
- Do not use where hydrostatic pressure conditions exist or where moisture vapor emissions exceed 25 lbs. per 1,000 ft² (0.12 kg/m²) per ASTM F1869 or 100% relative humidity per ASTM F2170.

Cautions

Read complete cautionary information printed on product container prior to use. For medical emergency information, call 1-888-853-1758.

This Product Data Sheet has been prepared in good faith on the basis of information available at the time of publication. It is intended to provide users with information about and guidelines for the proper use and application of the covered TEC[®] brand product(s) under normal environmental and working conditions. Because each project is different, H.B. Fuller Construction Products Inc. cannot be responsible for the consequences of variations in such conditions, or for unforeseen conditions.

4. TECHNICAL DATA

The LiquiDAM[®] Penetrating Moisture Vapor Barrier (TA-213)

In Use Performance	Typical Results
Permeability (ASTM E96)	Less than 0.10 perms
Effect of pH 14 solution (ASTM D1308)	No effect
Adhesion (ASTM D7234)	400-500 psi (2.76-3.45 MPa) (100% concrete failure)
Hardness (ASTM D2240, Shore D)	60-65
Flammability	Self-extinguishing over concrete

Physical Properties

Description	
Percent Solids	100%
Physical State	Part A: Liquid Part B: Liquid
Color	Part A: Blue Part B: Light Amber Blue when mixed
Pot Life	25 minutes
Floor Installation Time [at 70°F (21°C), 50% RH]	4-5 hours
VOC	Part A: 0 grams/liter Part B: 0 grams/liter
Storage	Store in cool location. Do not store open containers, nor leave containers exposed to sunlight.
Shelf Life	Part A: 1 year Part B: 1 year From date of manufacture in properly stored, unopened package.

5. INSTALLATION INSTRUCTIONS

Moisture Vapor Emission Testing

Before applying The LiquiDAM[®], a Moisture Vapor Emission Rate (MVER), using “Anhydrous Calcium Chloride” testing per ASTM F1869, must be obtained to determine the Moisture Vapor Emission Rate, or a relative humidity of the concrete must be obtained, using ASTM F2170.

Surface Preparation

All substrates must be structurally sound and free from any contaminants that may inhibit bond, including oil, grease, dust, paint, sealers, floor finishes, curing compounds, etc. Weak or contaminated surfaces must be mechanically cleaned by a method such as shot blasting. Mechanically prepared surfaces must have a concrete surface profile of CSP 2-3 (similar to a light broom finish), as defined by ICRI (International Concrete Repair Institute, Guideline No. 03732). Concrete must support a minimum adhesion strength of 150 psi (1 MPa) when tested per ASTM D7234 (tensile bond test). Substrate temperature shall be a minimum of 50°F (10°C) during application and air maintained between 50-90°F (10-32°C). Adequate ventilation should be provided.

Surface Evaluation and Preparation Guidelines

A successful application to concrete requires evaluation and preparation to address any conditions that would prevent a good bond. The following guidelines are provided to assist in this process. Additional evaluation, testing and/or preparation may be required to ensure the above Surface Preparation Requirements are met.

It is necessary to evaluate all four conditions. Check for Condition 1 on the entire concrete surface. Conditions 2 through 4 should be checked for at least once per every 50 ft² (4.6 m²) on small applications (1000 ft² [93 m²] or less) and once every 100 ft² (9 m²) on large applications (greater than 1000 ft² [93 m²]). Once you have completed the preparation method, always re-check to confirm the method worked.

CONDITION 1: Surface coatings and/or contamination such as gypsum plaster, joint compound, paint and adhesive.

Evaluation: Look at the surface and note the type and location of the surface contamination.

Preparation: First scrape off any lumps and loose material. Then use an appropriate cleaning method for the type of coating or contamination. Examples include:

- For gypsum plaster and joint compound — Scrub with warm water and detergent to remove any remaining material. Thoroughly rinse off any residue and allow concrete to dry prior to application of any TEC® materials.
- For paint — Chemical strippers should not be used. They may leave a residue or be absorbed into the concrete and later migrate to the surface and cause a bond failure. Paint not easily scraped off should be removed by a mechanical preparation method such as sand blasting or shot blasting.

Note: Shot blasting is one of the most effective methods of removing a wide variety of contaminants from concrete. A shot blast machine will remove sealers, coatings, curing compounds and other contaminants quickly and effectively, leaving behind a proper surface ready to receive the specified underlayment. Thickness of surface removal must be deep enough to eliminate penetrated contaminants.

- For adhesive — Scrape all of the adhesive off the surface first, then remove the layer of adhesive-contaminated concrete by a mechanical method such as shot blasting.

NOTE: Mechanical removal of cutback adhesive by sanding, grinding or blasting can be hazardous since old cutback adhesive may contain asbestos. Harmful dust may result. Inhalation of asbestos dust may cause asbestosis or other serious bodily harm. Consult all applicable government agencies for rules and regulations concerning the removal of floorings and adhesives that contain asbestos.

CONDITION 2: Weak top layer (called laitance) or damaged concrete such as spalling, scaling, delaminating or crumbling.

Evaluation: First scrape the surface with a knife blade. If this produces a fine powder, then laitance is present. Then use a hammer or other heavy object to sound out weak or hollow areas. Note the areas that are weak or damaged.

Preparation: Weak or damaged concrete must be removed by mechanical method such as shot blasting.

NOTE: Acid washing or etching is not recommended because it is difficult to fully remove contaminants and properly neutralize. The acid can penetrate into the porous concrete and chemically undermine it, weakening the concrete. Acid washing will not remove grease or oil.

CONDITION 3: Invisible contamination such as sealers, curing compounds or oil.

Evaluation: Sprinkle water onto the surface. If water forms droplets without absorbing immediately, the surface is probably contaminated. Over burnished concrete water droplets may also form without absorbing. The LiquiDAM® can be installed over burnished concrete without mechanical preparation if the surface meets all other criteria. Apply test areas to confirm a bond strength of at least 150 psi when tested per ASTM D7234 (tensile bond test).

Preparation: Contaminated concrete must be removed by mechanical method such as shot blasting.

NOTE: Solvents should be avoided. They can drive oil, grease and other contaminants further into the concrete, only to release back to the surface at a later time. Oil contaminated concrete must be removed to ensure a clean substrate and a proper bond.

CONDITION 4: Final Surface Preparation — removal of dirt and dust.

Evaluation: Wipe the surface with a clean dark cloth. If powder is visible on the cloth the surface is not clean enough. Note the areas that were not clean enough.

Preparation: For floor applications, always use a two step method to remove surface dirt and dust. First use a dry clean broom and sweep the entire surface. Do not use oil or wax based sweeping compounds. They can leave a film on the concrete surface that will prevent a proper bond. The second step should consist of one of the following:

- Vacuuming — use a heavy-duty industrial type vacuum to provide a dust-free surface. It may also be necessary to follow vacuuming with a damp sponge wipe to remove residual surface dust.
- Water cleaning — use a stream of potable water with sufficient pressure to remove dust and dirt. When necessary, also scrub with a stiff bristled brush.
Remove all wash water and allow concrete to thoroughly dry prior to application of TEC® materials.
- Detergent water cleaning — using a stiff bristled brush or broom, scrub the entire concrete surface with a cleaning product intended for concrete or a solution of at least 4 ounces (113 g) of trisodium phosphate per gallon (3.78 L) of warm water. Before the surface dries, thoroughly flush the concrete with clean potable water to remove all wash water and residue. **Allow concrete to thoroughly dry prior to application of TEC® materials.**

Tools and Accessories

The following items are required for most installations. For some projects you may need additional tools and accessories.

- Skin and eye protection (latex gloves and safety glasses)
- Floor cleaning and preparation equipment (shop vacuum, etc.)
- Variable speed drill and mixing paddle
- Silica sand
- Squeegee with handle or 1/16" (1.6 mm) square-notched trowel
- Paint roller and handle
- 3/16" (4.8 mm) nap lint-free foam roller sleeves
- Cleated sports shoes

Mixing

The LiquiDAM® Part A Epoxy Resin is designed exclusively for use with The LiquiDAM Part B Curing Agent. Substrate and all materials must be maintained at 50°F – 90°F (10C – 32°C) for 24 hours before, during and after installation. Pour entire container of The LiquiDAM® Part B Curing Agent into the pail containing The LiquiDAM® Part A and mix thoroughly for 3 minutes using a low speed (≤150 rpm) mixer. Do not over mix and avoid using high speed mixing to prevent entraining air.

NOTE: Mixing initiates an exothermic reaction. Blended material left in the mixing container will generate heat and shorten working time.

Joint/Crack Pre-Treatment

- For Static Cracks/Control Joints **less than** 1mm (with no movement): Remove any dirt, debris or existing sealant from cracks and joints. Mix The LiquiDAM® per instructions. Treat all static joints with The LiquiDAM® by applying material into the joint with a paintbrush to completely coat the walls of the cavity.
- For Static Cracks/Control Joints **greater than** 1mm (with no movement): Remove any dirt, debris or existing sealant from cracks and joints. Mix The LiquiDAM® per instructions. Blend at a 1:1 ratio with fine silica sand. Immediately pour into control joints and cracks, level with concrete surface.
- For Expansion Joints/Dynamic Cracks (with movement): Remove any dirt, debris or existing sealant from cracks and joints. Treat all dynamic joints with The LiquiDAM® by applying a layer into the joint with a paintbrush to completely coat the walls of the cavity. Once cured, fill the joint with sand or backer rod while leaving the top of joint open for proper treatment with sealant.

NOTE: There is a major difference between the proper application of flooring over static vs. dynamic joints, as well as, variations based upon the type of flooring being installed. Please follow appropriate industry standards, as well as flooring manufacturer's recommendation for treatment of joints.

Application

Layout the substrate area into 150 ft² (13.9 m²) "grids" for each 1 gallon (3.78 L) blended kit.

Immediately after mixing, pour the blended gallon container of The LiquiDAM®, across the grid area while spreading with a squeegee or 1/16" (1.6 mm) square-notched trowel allowing the The LiquiDAM® to saturate the surface. **Do not move too fast.** (Unused The LiquiDAM® should not be left in container. Immediately pour excess material onto a disposable surface (such as cardboard) or into disposable containers, at a thickness no greater than 1/4" (6 mm). Once cured

(after approximately 4 hours) the coated surfaces or containers may be disposed of in normal job site trash.)

Back roll surface with a ¾" (4.8 mm) nap foam roller to evenly distribute the product. First saturate the roller and then work at a smooth even pace. Periodically evaluate the surface to ensure a smooth continuous film. It may be necessary to wait up to 5 minutes before back rolling to minimize surface bubbles. **Do not over-work.**

Higher temperatures will shorten the work time. Do not exceed 180 ft²/gallon (4.4 m²/L). The LiquiDAM® performs equally well on porous or dense concrete. On porous concrete it penetrates into the surface. On dense concrete it forms a continuous, topical film. While the porosity of the substrate affects the application appearance, it does not affect the performance.

Curing and Surface Preparation

Most floor coverings and adhesives require the application of a TEC® cementitious underlayment over The LiquiDAM®*. The LiquiDAM® cures to a tacky film with no transfer to the touch in as little as 4-5 hours. The LiquiDAM® surface must be primed with undiluted TEC® Multipurpose Primer prior to installation of cementitious underlayment. To maximize installation efficiency primer can be applied in as little as 4-5 hours after installation of The LiquiDAM®. Allow primer to dry and apply appropriate TEC® cementitious underlayment at a minimum thickness of ¼" (3 mm). For further information contact your TEC® Sales Associate.

*TEC® WoodStrong™ Premium Urethane Wood Flooring Adhesive, TEC® Releasable Pressure Sensitive Adhesive or TEC® Clear Thin Spread Adhesive may be applied directly to The LiquiDAM® Moisture Vapor Barrier if concrete surface is sufficiently smooth and level. If the substrate is not smooth and level, please treat with appropriate TEC® surface preparation products as noted above.

Clean-up

Immediately clean all tools and equipment with denatured alcohol, or soap and water. Once cured this material can be removed with epoxy remover or mechanically removed.

6. AVAILABILITY AND COST

Availability

TEC® Premium Tile and Stone Installation Products are available nationwide. To locate a distributor in your area, please contact:

Phone: 800-832-9002

Website: tecspecialty.com

Cost

Contact your local TEC® Distributor.

7. WARRANTY

For warranty details, see your sales associate or tecspecialty.com.

8. MAINTENANCE

Not applicable

9. TECHNICAL SERVICES

Technical assistance

Information is available by calling the Technical Support Hotline.

Toll Free: 800-832-9023

Fax: 630-952-1235

Technical and safety literature

To acquire technical and safety literature, please visit our website at tecspecialty.com.

10. FILING SYSTEM

Division 9



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DSLDR0713-1