LiquiDam EZ™ Moisture Vapor Barrier

1. PRODUCT NAME

TEC® LiquiDam EZ™ Moisture Vapor Barrier
(214)

2. MANUFACTURER

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3. DESCRIPTION

LiquiDam EZ is a 1-part, highly-engineered, polymeric emulsion moisture mitigation formula. It is 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 ft^2 per 24 hours (0.12 kg/m^2 per 24 hours) or a maximum relative humidity of 100%. It is also designed to reduce the MVER from 25 lbs. to 3 lbs. per 1,000 ft^2 per 24 hours (0.015 kg/m^2 per 24 hours).

LiquiDam EZ is colored blue for visual assurance of coverage during the application process. Two coats are required to fully seal the substrate; and it quickly dries in as soon as 3-4 hours. Once dry, this product doesn't require a primer before the application of TEC surface preparation products.

LiquiDam EZ is a moisture vapor barrier for the installation of floor coverings, tile and stone. Ideal for use with other TEC adhesives, patch, underlayment, leveler and mortar products.

Key Features and Benefits

- Direct application onto green concrete up to 100% RH
- 1-part, simply hand stir before use
- No primer required, before the application of surface preparation products
- No waste and no special handling required
- Mechanical preparation, such as shot blasting, may not be required, especially for clean, sound concrete (see Section 5 for Surface Evaluation and Preparation Guidelines)
- Can be installed over burnished concrete (see Evaluation Condition 3)
- Same day flooring installation – dries within 3-4 hours
- Less than 0.10 Perm Rating (ASTM E96)
- Low VOC. Contributes to LEED® project points

Packaging

5 U.S. gallon plastic pails (18.93 L) Product #15035949

Coverage*

LiquiDam EZ requires two coats, with the following application coverage rates:

- First coat applied at a rate of 150 ft^2/gallon (3.68 m^2/L).
- Second coat applied at a rate of 300 ft^2/gallon (7.36 m^2/L).

For estimating purposes, this would equate to a combined coverage of 100 ft^2 per U.S. gallon (2.45 m^2/L).

The finished application must cover the substrate completely without any voids or pinholes to ensure moisture vapor suppression.

*Coverage may vary depending on surface porosity and/or texture.

Suitable Substrates

- New or existing concrete with a maximum RH of 100% or MVER of 25 lbs. per 1,000 ft^2 per 24 hours (0.12 kg/m^2 per 24 hours)

Storage

Store in cool, dry location. Protect from freezing. Do not leave containers exposed to sunlight or excessive heat for long periods of time. Product must be kept at temperatures of 40°-90°F (4°-32°C).

Shelf Life

Maximum of 12 months from date of manufacture in unopened package. Uncontaminated, resealed partial pails of product can be stored, until depleted, for up to 6 months.

Limitations

- For interior use only.
- Do not dilute product.
- This is not a waterproofing or anti-fracture membrane.
- Do not bridge existing expansion joints.
- Use only when temperatures are 50°-90°F (10°-32°C).
- Do not use where hydrostatic pressure conditions exist.

Cautions

Read complete cautionary information printed on product container prior to use. Non-hazardous; no special precautionary measures are required. 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

LiquiDam EZ Moisture Vapor Barrier (214)	
In Use Performance	**Typical Results**
Permeability (ASTM E96)	< 0.10 [at a dry film thickness of 0.03 inches (0.76 mm)]
Adhesion (ASTM D7234)	> 200 psi (> 1.38 MPa)
Effect of pH 14 solution (ASTM D1308)	Pass

Physical Properties

Description	
Physical State	Liquid
Color	Blue
Drying Time per Coat [at 70°F (21°C), 50% RH]	90-120 minutes per coat
VOC	1 gram/liter
Storage	Store in cool, dry location. Keep from freezing. Do not leave containers exposed to sunlight or excessive heat for long periods of time. Product must be kept at temperatures of 40°-90°F (4°-32°C).
Shelf Life	Maximum 12 months from date of manufacture in properly stored, unopened package. Uncontaminated, resealed partial pails of product can be stored, until depleted, for up to 6 months.

5. INSTALLATION INSTRUCTIONS

Moisture Vapor Emission Testing

Before applying LiquiDam EZ, refer to the TEC Moisture Mitigation Checklist and use an approved testing method to determine the relative humidity of the concrete or Moisture Vapor Emission Rate (MVER). Approved methods include the use of ASTM F2170 to determine the relative humidity of the concrete or "Anhydrous Calcium Chloride" testing per ASTM F1869 to determine the MVER.

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, adhesives, etc. Weak or contaminated surfaces must be mechanically removed.[1] (See Cleaning Notes below)

Mechanically prepared surfaces 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 ft^2 (4.6 m^2) on small applications (1000 ft^2 [93 m^2] or less) and once every 100 ft^2 (9 m^2) on large applications (greater than 1000 ft^2 [93 m^2]). 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.

- 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 into the surface and cause a bond failure. Paint not easily scraped off should be mechanically removed[1].
- For adhesive — Scrape off all the adhesive from the surface first, then remove the layer of adhesive-contaminated concrete by mechanical means[2].

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 mechanically removed[1]. Do NOT acid wash or etch concrete 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: Curing Compounds/Sealers

A) Broom finish or Steel troweled finish (non-glossy)

Evaluation: Apply water droplets onto the surface. If the droplets are not absorbed within 60 seconds the surface was treated with a curing compound/sealer or is contaminated.

Preparation: The sealed or contaminated layer of concrete must be removed by mechanical means[1].

B) Burnished finish (glossy surface)

Evaluation: Frequently LiquiDam EZ can be installed over burnished concrete without mechanical preparation. For glossy burnished concrete surfaces, apply test areas to confirm bond strength of at least 150 psi when tested per ASTM D7234 (tensile bond test).

Preparation: Glossy burnished concrete surfaces that do not provide bond strength of at least 150 psi must be removed by mechanical means[1].

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: 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.**
- 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 any TEC materials.**

Cleaning Notes

(1) Mechanical Cleaning

There are several different methods of mechanically cleaning substrates:

- Abrasive (Sand) Blasting
- Grinding
- Sanding
- Shot Blasting

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 effectively, leaving behind a proper surface ready to receive the LiquiDam EZ. Thickness of surface removal must be deep enough to eliminate penetrated contaminants. Your choice of Mechanical Cleaning will depend upon the type and depth of the contaminate to be removed from the substrate.

(2) Mechanical Removal of Existing Flooring Adhesives

Remove existing adhesives by shot blasting. Sanding or grinding are not suitable methods to remove adhesives that have penetrated into the concrete. Be sure to use proper safety equipment for hazardous materials as 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.

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 (gloves and safety glasses)
- Floor cleaning and preparation equipment (shop vacuum, etc.)
- 1/16" (1.6 mm) square-notched trowel
- Optional: 1/32" (0.8 mm) U-notch trowel if applying the second coat by trowel and backroll method
- Paint roller and handle
- 1/4" (6 mm) lint-free nap roller sleeve
- Cleated (hard rubber) shoes

Mixing

LiquiDam EZ Moisture Vapor Barrier is a single-component formula. Open the pail and hand stir to a smooth creamy consistency with a paint stick or margin trowel. Be sure to re-blend in any liquid that may have separated to the top of the container. Use a low speed (<150 rpm) mixer to optimize the mixture of the material. High speed mixing can entrain air into the formula. Air entrainment may increase work time to roll out the bubbles. Substrate and all materials must be maintained at 50°F-90°F (10°C-32°C) for 24 hours before, during and after installation.

Prior to Application

- **For Static Cracks, Cuts or Joints less than 1 mm wide:** remove dirt, debris or existing sealant from all cracks and joints, then treat static (non-moving) joints, cuts and cracks with LiquiDam EZ™ by directly applying LiquiDam EZ into the cracks or joints with a paintbrush, to completely coat the walls of each cavity.
- **For Static Cracks / Control Joints 1 mm-3 mm wide:** remove dirt, debris or existing sealant from cracks and joints, then use a concrete crack filler, such as TEC Feather Edge Skim Coat or TEC PerfectFinish™ Skim Coat and allow to dry 15 to 60 minutes.
- **For Static Cracks / Control Joints more than 3 mm wide:** remove dirt, debris or existing sealant from cracks and joints , then use a concrete crack filler, such as TEC Fast-Set Deep Patch Underlayment 305 mixed with TEC Patch Additive 861 and allow to dry 60 to 90 minutes.

- **For Fast-Track Saw Cut / Static Crack Fill:** Remove any dirt, debris, or existing sealant. Use TEC Joint/Crack Filler per product data sheet instructions. Overfill the joint/crack and shave after the material loses tack (typically 45-55 minutes). To optimize coverage, use of backer rod is acceptable for deep joints/cracks but you must maintain minimum depth of ½" with Joint/Crack Filler.
- **For Expansion Joints / Dynamic (moving) Cracks:** remove any dirt, debris or existing sealant from cracks and joints. 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 ½" (12 mm) open at the top for proper treatment with a 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 recommendations for treatment of joints.

Application

LiquiDam EZ is applied in two coats. The first coat is applied at 150 ft² (13.94 m²) per gallon and must be trowel-applied and backrolled. The second coat is applied at a 300 ft² (27.87 m²) per gallon and can be trowel-applied and backrolled or simply roller-applied.

1) Lay out the substrate area into one 150 ft² (13.94 m²) grid (example: 6 ft. x 25 ft / 1.83 m x 7.62 m) to validate the first coat spread rate.

2) After stirring (as noted above), spread one gallon of the LiquiDam EZ, across the grid area with a 1/16" (1.6 mm) square-notched trowel. NOTE: Do not exceed 150 ft² (13.94 m²) per applied gallon. **Product must be troweled as the first step and followed up in unison with the ¼" nap roller.**

3) Immediately saturate the roller in the initial application of trowel applied LiquiDam EZ, then backroll the area, to optimize disbursement of the material over the entire substrate. Periodically evaluate the surface to ensure a smooth continuous film. Wet film thickness of the first coat should be 18-20 mils.

4) Allow the first coat to dry 90-120 minutes. LiquiDam EZ is dry when it turns dark blue.

5) Apply the second coat with a 1/32" (0.8 mm) U-notched trowel and backroll with the ¼" nap roller or simply roller-apply the second coat. Wet film thickness for the second coat should be 9-10 mils. The second coat must fill any remaining white pinholes from the first 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 pinholes, voids, bubbles or breaks in the membrane. Apply additional LiquiDam EZ to fill all voids and allow to dry. **Do not over-work.**

6) Once dry, the second coat will appear darker than the first. The second coat MUST dry a minimum of 90-120 minutes before moving to the next installation step. Protect the application area from traffic and other trades until installation of the flooring.

After a job is complete, any unused, uncontaminated LiquiDam EZ Moisture Vapor Barrier can be simply resealed securely with the container lid, and then can be used for up to 6 months (see storage guidelines).

Drying and Surface Preparation

Most impervious floor coverings require the application of a TEC cementitious underlayment over LiquiDam EZ* for the adhesives to bond properly to the floor coverings. Combined coats of LiquiDam EZ dry in as little as 3-4 hours, depending on surface porosity and ambient humidity.

Apply appropriate TEC cementitious underlayment directly to the dried

LiquiDam EZ at a minimum thickness of ⅛" (3 mm) (no primer is required).

For further information contact your TEC Sales Associate.

*TEC Wood Endure™, TEC Wood Assure™, TEC Wood Go™, TEC Releasable Pressure Sensitive Adhesive or TEC Clear Thin Spread Adhesive may be applied directly to LiquiDam EZ Moisture Vapor Barrier if concrete surface is sufficiently smooth and level to accept flooring. If the substrate is not smooth and level, please treat with appropriate TEC surface preparation products, for the proposed floor coverings, as noted above. TEC Flexera®, TEC Flexera® High Tack, Parabond 5092, and Parabond 5092 HT adhesives may also be applied directly over LiquiDam EZ if installed by the PSA Method and adhesive does not transfer to fingertips when lightly touched.

Clean-up

Clean tools, hands and excess material immediately (while still fresh) with soap and water. Once dry (in 60-90 minutes), this material is difficult to remove.

6. AVAILABILITY

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

Phone: 800-832-9002
Website: tecspecialty.com

7. LIMITED WARRANTY

The product(s) covered by this Product Data Sheet are sold subject to a Limited Warranty and related terms. **H.B. Fuller Construction Products disclaims the implied warranties of merchantability and fitness for a particular purpose and all incidental and consequential damages arising out of the sale, purchase or use of this product.** For Limited Warranty details visit tecspecialty.com. To obtain a hard copy of the Limited Warranty call H.B. Fuller Construction Products at 800-832-9023 or mail a written request to the address in Section 2 of this Product Data Sheet.

8. MAINTENANCE

Not applicable

9. TECHNICAL SERVICES

Technical and safety literature

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

10. FILING SYSTEM

Divisions 3 and 9

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