Eco-MVSTM Moisture Vapor System 15 or 23 Mil System



DESCRIPTION:

Eco-MVS is a two-part 100% solid epoxy moisture mitigation system. It is a moisture tolerant and VOC-Compliant product that limits alkalinity and the transmission of moisture, odor and other elements through concrete slabs. Eco-MVS features a rapid curing time for faster job completion. It allows the direct bond of most industrial coatings, floor leveling products and most adhesive system. Eco-MVS is a 1 to 1 mix ratio that simplifies the application.

USES: Where concrete is at least 7 days old and

- <u>15 mil system</u>: Withstands moisture vapor emission rates up to 15 lbs per 1,000 ft² (92.9 m²) in 24 hours per ASTM F1869* or 89% in-situ relative humidity per ASTM F2170.
- <u>23 mil system</u>: Withstands moisture vapor emission rates up to 24 lbs per 1,000 ft² (92.9 m²) in 24 hours per ASTM F1869* or 99% in-situ relative humidity per ASTM F2170.

*Unless previous coatings/sealers are *completely* removed, including material that has soaked into concrete pores, results collected using this method will be misleading. ASTM F2170 and core testing when RH is >95% are required for product warranty.

ADVANTAGES:

٠	Fast cure	•	Direct bond of floor coverings and toppings
٠	Same day cover	•	Superior bond to dry or damp surfaces
٠	VOC-compliant	•	0.06 perm rating
•	Compatible with most floor covering systems		

COATING PROPERTIES							
Property	Test Method	Results					
Volatile Organic Compound, VOC	ASTM D3960	Mixed A+B = 2.04 lb/gal (245 g/L)					
Adhesion	ASTM D7234	>450 psi (3.10 MPa)					

Testing performed at ambient conditions unless stated otherwise.

APPLICATION CHARACTERISTICS

Coverage rate will depend upon application coating thickness as well as the texture and porosity of the concrete. A gallon (3.78 litres) of Eco-MVS will cover:

Total Coverage

106 ft²/gallon for 15 mils, 70 ft²/gallon for 23 mils 9.8 m²/gallon for 15 mils, 6.5 m²/gallon for 23 mils

GENERAL PRODUCT INFORMATION

STORAGE:	Materials should be stored indoors between 65°F (18°C) and 90°F (32°C).							
SHELF LIFE:	2 years from date of manufacture.							
PACKAGING OPTIONS /	Eco-MVS							
PART NUMBERS:	10 gallons (37.8 litres) / 9012946							
LIMITATIONS:	1. Do not apply to new concrete slabs until at least 7 days old.							
	2. Colors CANNOT be used in Eco-MVS.							
	Eco-MVS is not a wear surface or topping.							
	4. Do not apply over a slab while experiencing hydraulic pressure.							
	5. Warranty will not apply to Eco-MVS installed over concrete with ASR (Alkali Silica reaction).							
	6. MVER may fluctuate within slab areas and can have significant seasonal variations.							
	7. Do not apply over existing coatings, sealer or floor coverings.							
	8. Do not use where temperature will exceed 125°F (51.7°C).							
	9. Do not apply to concrete slabs with less than 3500 psi compressive strength. (Consult							
	Tennant Technical Services.)							
	10.Protect the area to be treated from strong sunlight, wind or drafts.							
	11.Acid etching and diamond grinding should not be used as a method of preparation.							
	12.Do not apply where Eco-MVS will receive unprotected exposure to sunlight or UV radiation.							
	13.Terrazzo strips may move and may corrode; therefore, Eco-MVS is not warranted over terrazzo strips.							
	14.Cannot be sprayed.							
	15.DO NOT FREEZE.							

TENNANT COATINGS

PLEASE SEE MATERIAL SAFETY DATA SHEET (MSDS) FOR HANDLING PROCEDURES. USE PRODUCT AS DIRECTED. KEEP OUT OF THE REACH OF CHILDREN.

PRELIMINARY FLOOR INSPECTIONS

CHECK THE CONCRETE:

Concrete must be structurally sound. New concrete slabs must be at least 7 days old.

CHECK FOR MOISTURE:

Concrete moisture testing must occur. In-situ relative humidity testing per ASTM F2170 is required for warranty.

15-Mil System: Readings must not be greater than 89% relative internal concrete humidity.

23-Mil System: Readings must not be greater than 99% relative internal concrete humidity.

Test methods can be purchased at www.astm.org or follow instructions from the suppliers of this test.

NOTE: Although moisture testing is critical, it is not a guarantee against future problems. This is especially true if there is no vapor barrier or the vapor barrier is not functioning properly and/or you suspect you may have concrete contamination from oils, chemical spills or excessive salts.

CORES: Core testing is required for warranty if RH is >95%. For other conditions, Tennant recommends core samples be taken and lab tested for penetration of the slab by any sealers, oils, adhesives, or other bond breakers. We do not warranty Alkali Silica Reaction and other problems. Cores through slab can indicate absence or failure of moisture barrier or presence of aggregate between membrane and slab. Tennant does not warrant penetration and bond where cores are not tested unless and until project owner submits cores and lab establishes that no impediment to bond and penetration was present.

CHECK THE TEMPERATURE AND HUMIDITY: The ambient and surface temperature must be between 60°F (15.6°C) and 80°F (26.7°C) at the time of application, and temperatures should not rise above this range during application or while the material is curing. Ambient relative humidity percentage should not exceed 80% at the time of application.

	APPLICATION EQUIPMENT							
٠	Protective clothing	•	Roller assembly (18")					
•	Respirator	Shed Resistant, Short Nap Rollers						
•	Jiffy [®] mixer blade [Tennant Part No. 08643-5 (large unit)]	•	Таре					
•	Slow speed drill (500 rpm or less)	•	Film gauges					
•	Rubber squeegees (flat and 3/16"(4.78 mm) notched)	•	Soccer Cleats (soft spikes) or spiked shoes (without sharp point					

ASSEMBLE EQUIPMENT: Do not mix material until ready to apply. All application equipment, etc. should be ready for immediate use. (Clean roller with tape to remove any residual lint.)

PREPARATION

CONCRETE: All surface must be clean, sound, solid, open pore and absorptive. Slab must be at least 4" thick and any distinct layer at least 2" thick to be considered structurally sound. Repair and leveling layers containing latex or other components generally prevent absorption and proper bond and should be removed. Surface must be shotblast to achieve a surface profile of ICRI CSP 4-5 (Int. Concrete Repair Inst.) Acid etching is not permitted, nor chemical remediation of any adhesive residues.

ENSURE POROSITY: Surface must be clean, completely free of dust, dirt, paint, sealer or any contaminant which might interfere with penetration or bond. Do not apply to floors which have sealers or bond breakers applied unless completely removed. Quick tests to help determine clean, open and absorptive concrete uses water drops. This easy test is particularly important if cores were not pulled and tested. If dime size water drops placed at several locations on prepared floor do not readily absorb into concrete within 30 seconds or beads up, surface is not sufficiently absorptive. In all cases, thorough vacuuming (with dust containment filter) is needed before application. Cleaning with pressure washer may be advisable in some cases. Leveling should be done on top of Eco-MVS with suitable repair materials.

JOINTS: Expansion (cold or construction) joints should be left intact. Eco-MVS is not warranted against structural movement at expansion joints. To help reduce moisture emissions through expansion joints, coat the walls and bottom of the cleaned joint with Eco-MVS. Once allowed to dry, an expansion joint cover or an elastomeric sealant may be used. For concrete slabs over 6 months old, sawcut (control) joints and cracks should be filled by pouring Eco-MVS full depth or to 3/4 of joint depth. If filling to 3/4 depth pour silica quartz into Eco-MVS to create a mortar. Sweep away excess sand and proceed with Eco-MVS installation.

APPLICATION - PRIMER COAT

Slab (surface) and air temperature must be 60°F (15.6°C) or greater. Product must be kept between 60°F (15.6°C) and 75°F (23.9°C) at time of mixing. Colder or warmer temperatures can significantly retard or advance working and cure times respectively.

A thin coat of primer will wet out concrete, help seal off concrete pores and minimize outgassing bubbles. Apply a tight coat of primer with a clean, flexible squeegee. Backrolling is not recommended. There should be no mil build over the high spots of the concrete.

Tennant Company, 701 North Lilac Drive, P.O. Box 1452, Minneapolis, MN 55440-1452 800-553-8033 / www.tennantfloorcoating.com / © Tennant Company 01/25/17 **COVERAGE RATE:** Apply Eco-MVS at 3 mils (0.08 mm) or 535 ft² per gallon (49.7 m² per 3.78 litres). Much of this will soak into porous concrete. Adjust the procedure to achieve the recommended coverage rate.

PREMIX PART A using a Jiffy® mixer blade and slow speed drill. For full-fill 5's (18.9 litres), pour out 2 gal (7.56 litres) Part A into a measuring container. Then, pour this measured Part A into a 5-gallon mixing pail.

ADD ECO-MVS PART B TO PART A. For full-fill 5's (18.9 litres), pour out 2 gal (7.56 litres) Part B into a measuring container that is separate from the one used with the Part A. Then, add the measured Part B to the Part A already in the mixing pail.

MIX FOR 4-5 MINUTES using a Jiffy® mixer blade and slow speed drill to produce a streak free, homogenous product. Care must be taken to mix all the product and avoid any action that might entrap air such as high speed drill mixing. DO NOT THIN the product.

IMMEDIATELY POUR ALL OF THE MIXED MATERIAL onto the floor in a single bead.

PUSH THE SQUEEGEE at an even speed and down pressure. The squeegee should be pushed to apply the targeted amount.

START THE SECOND AND EACH REMAINING PASS by pushing material parallel to the first pass. Hold the bead of material near the center of the bar and push at an even speed with slight down pressure. **NOTE:** *Epoxy applied thin may "bridge" holes and cracks momentarily before soaking in – make sure the previously squeegeed area is overlapped (halfway). Do not allow Eco-MVS to fill in joints.*

APPLICATION – BUILD COAT

COVERAGE RATES: Apply the balance of Eco-MVS needed to achieve the desired total thickness. It is important that the coverage rates are consistent. Very rough or porous concrete may require a heavier application. Adjust the rate as needed. Repeat the steps above to mix and spread the primer. A notched squeegee will make it easier to apply a thicker coat.

15 mil system: Apply 12 mils (0.30 mm) or 135 ft² (12.5 m²) per gallon (3.78 litres). Use a 1/8"* (3.18 mm) notched squeegee. **23 mil system**: Apply 20 mils (0.51 mm) or 80 ft² (7.4 m²) per gallon (3.78 litres). Use a 3/16"* (4.78 mm) notched squeegee. **NOTE:** *Total Eco-MVS (prime and build coat) should not exceed 23 mils physical thickness.*

*These guidelines were arrived at by using new squeegees on smooth concrete with little applied pressure. The application rate is affected by worn squeegees, applied pressure and texture of the concrete.

Immediately after the Eco-MVS is applied and there is room to roll, a second person will **BACKROLL THE MATERIAL** with a short nap roller to a smooth and uniform appearance. **NOTE:** *Finish backrolling as soon as possible.*

APPLICATION OF OTHER COATINGS

First, thoroughly check Eco-MVS for any fisheyes or pinholes which would be a weak point in the membrane. Grind these areas and clean off residue. Make sure the surface is dry.

Tennant epoxies and Eco-HTS[™] 100 bond to Eco-MVS if coated within 24 hours. Eco-MVS must be cured (hard) enough so spikes worn to apply epoxy or other recoat activities do not damage Eco-MVS.

Eco-HPS® 100 requires sanding with 120 grit paper. Other Tennant coatings require sanding with appropriate paper as well. We recommend thorough sanding with a swing-type buffer so that multiple scratch marks cause an obvious gloss loss on all areas (depressions will remain shiny), and the floor is uniformly dulled. The ability to see individual scratch marks is an indication that sanding is not adequate. Scrub with detergent and rinse with clean water before coating. Tack rag to remove find dust if needed.

Since Eco-MVS cannot be pigmented, we recommend 6-8 mils (0.15-0.20 mm) of tinted Tennant epoxy to set the proper background color for a Tennant urethane. (See appropriate product documentation for application instructions.) The exact thickness will vary depending on the hide/color of the system.

TECHNICAL SUPPORT

For any preparation or application questions, please call Tennant technical support at 800-228-4943, option 4 (US & Canada), 800-832-8935 (International).

DISPOSAL

Dispose of all excess material, packaging and other waste in accordance with federal, state and local regulations.

MAINTENANCE GUIDELINES

Allow floor coating to cure at least one week before cleaning by mechanical means (e.g., sweeper, scrubber, disc machine).

Care: Proper maintenance will increase the life and help maintain the appearance of your new Tennant floor coating. Sweep and scrub your new coating regularly, as dirt and dust are abrasive and can quickly dull the finish, decreasing the life of your coating. Remove spills quickly as certain chemicals may stain and could possibly permanently damage the finish.

Use soft nylon brushes or white pads on your new floor coating. Any brush more abrasive than a soft nylon or white pad can cause premature loss of gloss.

Detergent: Tennant has a full range of detergents--general purpose to heavy duty--for your cleaning needs. For assistance in determining which detergent is right for your facility or for additional technical information call: 800-228-4943, option 4 (US & Canada), 800-832-8935 (International).

Tennant Company, 701 North Lilac Drive, P.O. Box 1452, Minneapolis, MN 55440-1452 800-553-8033 / www.tennantfloorcoatings.com / © Tennant Company 01/25/17 Caution: Avoid scratching or gouging the surface. All floor coatings will scratch if heavy objects are dragged across the surface.

Do not drop heavy or pointed items on the floor as this may causing chipping or concrete popouts in the case of a weak cap.

Rubber tires can permanently stain the floor coating from plasticizer migration. Plexiglass® between the tire and the floor coating can prevent discoloration.

Rubber burns from quick stops and starts can heat the coating to its softening temperature, causing permanent marking.

Repair: Repair gouges or scratches or chip outs as soon as possible to prevent moisture or chemical contamination.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

LIMITED WARRANTY

Tennant Coating Technologies, a Tennant Company Group warrants its Eco-MVS Moisture Vapor System to be free from defects of manufacture, improper formulation, and defective ingredients.

Tennant Coating Technologies further warrants that adhesive floor coatings will not peel or lose bond due to water vapor transmission for a period of five (5) years after application of Tennant Coating Technologies' Eco-MVS Moisture Vapor System under the following application conditions:

- 15 mil and 23-mil Systems: Applied to structurally sound and/or previously coated concrete that has been properly removed and prepared.
- The moisture level of the concrete floor prior to application of Eco-MVS was tested no earlier than 5 days prior to application and previous coatings/sealers are completely removed, including material that has soaked into the concrete:
 - o 15-Mil System: Readings must not be greater than 89% relative internal concrete humidity.
 - 23-Mil System: For fully cured concrete, displaying a moisture emission level up to 99% relative internal concrete humidity. Core testing is also required if RH is >95%. If core testing is not done, concrete porosity must be verified after prep by checking that water drops applied the size of a dime soak in within 30 seconds.
 - The Eco-MVS Moisture Vapor System was applied in accordance with the Eco-MVS product bulletin; and
- The Warranty application below is completed and returned to Tennant Coating Technologies' Warranty within 60 days of the Eco-MVS topcoat application via fax: 763.508.4875.

This warranty applies only to the repair or replacement of defective areas due to a failure of Eco-MVS and is subject to the exclusions listed below.

ALL ACCOUNTS MUST BE PAID IN FULL PRIOR TO ANY WARRANTY BEING ISSUED OR ENFORCED.

EXCLUSIONS

THIS WARRANTY IS VOID FOR APPLICATIONS WHERE SUBSTRATUM FAILURE, HYDROSTATIC PRESSURE, OR SEVERE OR ABNORMAL USE OCCURS SUCH AS DRAGGING OF PALLETS, MACHINERY OR OTHER HEAVY OBJECTS. THIS WARRANTY IS VOID IF BOND INHIBITING CONTAMINANTS ARE FOUND IN THE CONCRETE OR WHERE THE PRODUCT IS APPLIED TO IMPROPER SUBSTRATES AND/OR WITHOUT PROPER APPLICATION/PREPARATION PER <u>TENNANT COATING</u> <u>TECHNOLOGIES</u> SPECIFICATIONS. WARRANTY IS VOID IF THE TOPCOAT IS NOT PROPERLY MAINTAINED AND/OR IF CONCRETE CONDITIONS CHANGE AFTER THE APPLICATION OF ECO-MVS OR TOPCOAT.

IN NO EVENT SHALL TENNANT COATING TECHNOLOGIES BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES ARISING OUT OF USE OF TENNANT COATING TECHNOLOGIES' ECO-MVS, INCLUDING BUT NOT LIMITED TO, DAMAGES TO STRUCTURE, CONTENTS OF STRUCTURES, OR ARISING FROM FACILITY SHUT DOWN. THE ONLY REMEDY OF THE USER OR BUYER, AND THE ONLY LIABILITY OF TENNANT COATING TECHNOLOGIES FOR ANY AND ALL CLAIMS, LOSSES, INJURIES, OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE) SHALL BE REPLACEMENT OF THE PRODUCT, OR, AT THE ELECTION OF TENNANT COATING TECHNOLOGIES, RETURN OF THE PURCHASE PRICE.

IT IS EXPRESSLY UNDERSTOOD THAT THIS WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, RIGHTS OR OTHER REMEDIES.

APPLICATION FOR ECO-MVS LIMITED WARRANTY

NOTE: ALL ACCOUNTS MUST BE PAID IN FULL PRIOR TO ANY WARRANTY BEING ISSUED OR ENFORCED.

Company Name:						Start Date:									
Address:								Comp	letion I	Date:					
Contact Name:						Total Area Size:									
Phone Number	Phone Number:							Eco-N	IVS Ba	itch #:	A =		B =		
								A = B =					B =		
								A = B =					B =		
Project Name//	Area Ap	oplied:						Topoc		511 #.					
Address of Pro	ject:														
Name and Title Authorizing Wo	e of Per ork at L	son ocatior	ו:												
In-situ relative											Date: (All readings must be taken on the same day.)				
humidity - 1 test per															
1000 square															

FLOOR MAP

(Use one box per RH result. Use additional tables as necessary.)

Certified by:

Signature:	Date:	
Title:		
Company Name:		