PRODUCT DATA SHEET

polyguard

Underslab TRM

Termite Waterproofing Barrier

MANUFACTURER

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PRODUCT DESCRIPTION

Basic Uses

Underslab TRM is a non-structural barrier which when properly constructed as part of the building envelope, blocks both termites and water. Underslab TRM is the thickest in the industry, ideal for your most abusive jobsites.

PRODUCT FEATURES

- Pre-applied sheet membrane at 95-mils thick.
- Physical Barrier to termites and water.
- Extremely high (224 lb.) puncture resistance/resists severe abuse incurred during slab placement.
- Ability to handle hydrostatic head pressure up to 231 ft.
- The puncture resistance comes from top layer of highway grade geotextile and the bottom layer of high strength polyethylene film.
- The only physical termite barrier with over 2 decades of testing and an evaluation report by the ICC (Internation Code Council) AC 380 ESR 3632.
- Self-healing sealant will close up small punctures.
- 30-day UV exposure.

COMPOSITION & MATERIALS

Underslab TRM is a strong sheet barrier with 8.5 mils high strength polyethylene backing laminated to a 69-mil thick layer of TRM Sealant integrated into a top layer of high strength non-woven geotextile fabric. Total membrane thickness is factory controlled at 95 mils.

On the fabric side, a 4-inch wide lap of waterproofing adhesive compound is left exposed along one edge with a removable silicone coated release sheet. This adhesive is exposed just prior to the installation of the adjacent roll, which creates a 4-inch wide self-adhesive overlap seam.

Underslab TRM has extremely high (224 lb.) puncture resistance. High puncture resistance is necessary to resist the severe abuse incurred during slab construction. The puncture resistance comes from top layer of highway grade geotextile and the bottom layer of high strength polyethylene film.

In the middle of these two puncture resistant layers is the 69-mil layer of barrier sealant. The sealant gives four important properties:

1. Termite Barrier
2. Water Barrier
3. Absorbs stress which could cause cracking
4. Self-healing sealant will close up small punctures

REFERENCES

There are several ways in which LEED credits might be earned by incorporating TRM Barrier System components into the structure.

Increasingly, LEED has incorporated Integrated Pest Management (IPM) into standards.
LEED calls for IPM protocols to *"minimize pest problems and exposure to pesticides".*

A key IPM element is *"Non-chemical pest preventative measures…..designed into the structure…"*. TRM Barriers are non-chemical pest preventative measures.

LEED rating systems for homes incorporate (SSC5) "*Non-toxic pest control"*. Two components found in the TRM Barrier System are mentioned; they are steel mesh and sand barriers. Both are used as termite barriers.

TRM Sealant / membranes are not mentioned, as they are only now entering the field for sustainable construction alternatives.

The incorporation of TRM Sealant / membranes into the building envelope should be a strong candidate for Innovation credit.

Finally, if the project site is former agriculture land with residual pesticide contamination, TRM Barriers may qualify under LEED IAQ Credit 5 - Indoor Chemical and Pollutant Source Control (below grade toxin barrier) or SS3 - Brownfield redevelopment.

TECHNICAL DATA

See physical properties table.

INSTALLATION

Preparation: Apply Underslab TRM only in fair weather, with temperatures above 30°F (-1°C) and rising. Only solvent-based primers, 650 LT Liquid Adhesive or California Sealant can be used. Water-based primers must never be used.

Level, tamp or roll granular base prior to application of Underslab TRM. Sub-base compaction should be accomplished per project specifications. Surface debris such as rocks, trash, concrete chunks, roots, sticks, etc. must be removed. The membrane should never be placed in standing water. Base must be dry prior to application.

Membrane Installation:

Place the Underslab TRM with the polyethylene film backing toward the soil and the fabric side facing up to receive the concrete. The barrier should be placed with the longest dimension parallel with the direction of concrete pour.

Underslab TRM should be lapped over the concrete footings and slab perimeter/grade beams to insure a tight bond with the concrete pour. Once the Underslab TRM has been installed, all penetrations should be sealed.

Side Laps: If any lap areas become dirty during construction remove all debris and/or dust from the polyethylene backing. Clean the backing with 30% isopropyl alcohol prior to exposing the 4-inch self-adhesive seam. Remove the 4-inch wide silicone treated release sheet and align the adjacent roll for seaming. Once the lap is secured, roll with a min. 75 lb. linoleum roller to obtain full adhesion.

End Laps: End laps should be overlapped a minimum of three (3) inches, maximum of four (4) inches, and addressed by applying a coat of liquid adhesive approximately 50 - 75 sq. ft. per gallon to fabric side of waterproofing barrier membrane and placing adjacent sheet on top. Roll to ensure full adhesion.

Apply even pressure with the linoleum roller to obtain full adhesion.

Patching: Take precautions to protect the Underslab TRM during placement of reinforcing steel and concrete. Visually

inspect the barrier prior to pouring of concrete for any punctures or damage to barrier which needs to be repaired.

Patch damaged areas using Fabric Tape installed over 650 LT Liquid Adhesive or California Sealant at coverage rate of 50 – 75 square feet per gallon to the damaged Underslab TRM. Patches must extend a minimum of 6-inches in all directions from the damaged area. All patches must be rolled with a hand roller or linoleum roller to ensure proper adhesion and seal. Repaired areas must be sealed around the edges with Detail Sealant PW™ or LM-95.

Please reference Polyguard details “Overview Repair Patch Less Than 2 Inches” and/or “Overview Repair Patch Greater Than 2 Inches” according to size of the membrane damage.

Sealing Penetrations: Once the Underslab TRM has been installed, all penetrations must be sealed as follows:

- Prepare all penetrations for application of TRM Sealant with wire brush or sandpaper.
- Measure the length of Polyguard TRM FastPitch™ which will be needed to create a pitch pocket around the penetration or penetration cluster which is to be sealed. The TRM FastPitch™ rim should be long enough to allow a minimum of a 2-inch space between the penetration and the rim. Also, the rim should be a minimum of 2-inches away from any exposed edge of the Underslab TRM.
- Cut a length of TRM FastPitch™ to the length determined in step 1 plus 3-inches for overlap of the ends.
- Apply a coating of 650 LT Liquid Adhesive or California Sealant along the line where you plan to apply the TRM FastPitch™ rim. Allow to cure until the adhesive is tacky.
- Install the TRM FastPitch™ rim:
    - Set TRM FastPitch™ down in the approximate installation area.
    - At the point where the ends of the TRM FastPitch™ come together, remove 3-inches of release liner from the end of the FastPitch™. This will expose the adhesive face.
    - The adhesive face on one end of the TRM FastPitch™ which has been exposed should be adhered to the back side of the other end. Press to seal firmly.
    - Now make final adjustments to the ring or oval shape of the TRM FastPitch™ rim, making sure to allow the minimum required 2-inch spacing from anywhere where there is a penetration or an edge of the Underslab TRM. When the rim is aligned at the proper space, press down on the 2-inch vertical rim against the surface of the Underslab TRM which has been coated with the Liquid Adhesive.
    - Once the TRM FastPitch™ rim has been fully adhered in place around the prepared penetration(s) apply LM-95 at all penetrations extending a minimum of 2-inches onto Underslab TRM membrane, and 2-inches in depth. The depth of the sealant must completely fill the TRM FastPitch™ rim with no areas below the top edge of the rim.

Gas Vapor Protection: For full gas vapor protection all pipes must be wrapped using the Fabric Tape and secured to the pipe with a screw clamp.

Rebar Chairs: Steel reinforcement may be applied directly over the Underslab TRM. It is important that reinforcement (rebar) chairs are compatible with the system. Compatible rebar chairs will distribute the load of the steel reinforcement sufficiently to reduce the risk of the chair puncturing the barrier when fully loaded with the weight of the reinforcement teel and other common auxiliary loads.
Inspections and Repairs: Visually inspect barrier for tears, punctures, "fishmouths", or other gaps, prior to the concrete pour. Repair by removing all damaged barrier so that only well bonded barrier remains. Reprime any exposed concrete. After Liquid Adhesive is dry, apply a new sheet of barrier over the concrete, extending 6-inches (152 mm) onto previously applied barrier. Care should be taken to obtain good adhesion between barrier used for repairs and originally applied barrier.

Patch all "fishmouths" with a combination of the following:

- 650 LT Liquid Adhesive or California Sealant
- 90 mils of LM-95, 6-inches in all directions of fishmouth
- Fabric Tape, 6-inches in all directions of fishmouth

Seal Fabric Tape edged with LM-95 or Detail Sealant PW™.

Ultraviolet Protection:
Underslab TRM can be adversely affected by ultraviolet light and must be covered as soon as possible and not left open to sunlight for >30 days.

MAINTENANCE:
No maintenance should be required unless the product has been damaged by construction or by some other activity.

LIMITATIONS
When properly installed, TRM Barrier products will physically block termites from entering the structure at the protected area but will not block termites from entering at other points on the structure. Installing more TRM components blocks more termite entry points but does not guarantee protection in areas the TRM products are not applied.

Polyguard’s TRM System has been extensively tested, both in the laboratory and in long term field trials at multiple sites, against Reticulitermes flavipes and Coptotermes formosanus subterranean termites, which can be said to be the most voracious insects in the United States measured in terms of property damage.

There are numerous other termite species worldwide, not known to be present in the United States, which are equally or more voracious than the U.S. species which were tested. A limited amount of testing outside of the United States has been done or is in progress. Contact Polyguard for up-to-date information about non-domestic testing.

Purchaser is responsible for complying with all applicable federal, state, or local laws and regulations covering use of the product, including waste disposal.

STORAGE
All Polyguard products must be handled in a safe manner. Some products may contain solvents, and these deserve special attention to safety since their vapors are both flammable and harmful if inhaled. Read both the product label and the Safety Data Sheet (SDS) before use.

SAFETY
SDS documents for all Polyguard products can be obtained at our website www.polyguard.com. Call Polyguard Products, Inc. at (214) 515-5000 with questions.

WARRANTY
We, the manufacturer, warrant only that this product is free of defects, since many factors which affect the results obtained from this product are beyond our control; such as weather, workmanship, equipment utilized and prior condition of the substrate. We will replace at no charge product proved to be defective within twelve (12) months of purchase, provided it has been applied in accordance with our written directions for uses we recommended as suitable for this product. Proof of purchase must be provided.

TECHNICAL SERVICES
Technical assistance, information and Polyguard’s products are available through a nationwide network of distributors and architectural representatives, or contact Polyguard Products, Inc.
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PROPERTY	TEST METHOD	TYPICAL VALUE
COLOR	-	White / Red
MEMBRANE THICKNESS	ASTM D 1000	95 mils
LONG TERM TESTING AGAINST TERMITE PENETRATION	ICC AC 380	ICC AC 380 Compliance ICC ESR-3632
ELONGATION OF BARRIER SEALANT - PERCENT STRETCH BEFORE FAILURE	ASTM D 412	> 1000%
PESTICIDE REPELLENCY (CHLORDANE, FIPRONIL, PERMETHRIN)	ASTM F 2130	0% penetration
PERMEANCE TO MOISTURE / WATER VAPOR	ASTM E 96-B	0.03 Grains/ft^2/hr./in
TENSILE STRENGTH – FILM BACKING	ASTM D 882	6500 PSI
TENSILE STRENGTH – BARRIER COMPOSITE	ASTM D 412 (Modified Die C)	325 PSI
PEEL ADHESION	ASTM D 1000	10.0 lb./in width
OVERLAP BOND	ASTM D 1000	8.0 lb./in width
LOW TEMPERATURE FLEXIBILITY	ASTM D146 180° bend over 1" mandrel @ -25°F (-32°C)	No cracking or delamination
BARRIER PUNCTURE RESISTANCE	ASTM E 154 (Blunt Instrument)	50 lb.
RESISTANCE TO HYDROSTATIC HEAD	ASTM D 5385	231 ft.

PACKAGING	***PART NUMBER***	***UNIT SIZE***
UNDERSLAB TRM	TERMUS50	50" x 48' roll
Required Accessories:		
***FABRIC TAPE	FABRIC TAPE-12	12" x 200' roll
TRM FASTPITCH	TERMFASTPITCH	3" X 50" roll
650 LT LIQUID ADHESIVE	650-5 LIQ ADH 5 GA	5-gallon pail
650 LT LIQUID ADHESIVE	650-5 LIQ ADH 1 GA	4 • 1 gal pails/ctn
CALIFORNIA SEALANT	CALSEAL5	5-gallon pail
US INSIDE CORNER BOOT 12" X 12" X 12"	US 12" INSIDE CORNER BOOT	25 pcs/ctn
US OUTSIDE CORNER BOOT 12" X 12" X 6"	US OUTSIDE CORNER BOOT 12"	25 pcs/ctn
US PIT TOP CORNER BOOT 6" X 6" X 6"	PREFABRICATED 6" CORNER BOOTS	25 pcs/ctn
Possible Accessories:		
606 TAPE (for a vertical termination to existing concrete)	60604	4" x 50' rolls (6/ctn)
606 TAPE (for a vertical termination to existing concrete)	60606	6" x 50' rolls (4/ctn)
LM-85 SSL	LM85-2 SSL	2-gallon pail
LM-85 SSL	LM85-5 SSL	5-gallon pail
LM-95	LM952	2-gallon pail
***DETAIL SEALANT PW™	DETAIL SEALANT PW – SAU 20 OZ	20 sausages/ctn
***DETAIL SEALANT PW™	DETAIL SEALANT PW – 3 GAL	3-gallon pail
****DETAIL SEALANT PW™ IS ONLY TO BE USED FOR TOP TERMINATION FOR FABRIC TAPE AND ENDLAPS.*		
Drainage Accessories:		
POLYFLOW® 15	POLYFLOW15	4' x 50' roll
POLYFLOW® 15P	POLYFLOW15P	4' x 50' roll
POLYFLOW® 18	POLYFLOW18	4' x 50' roll
TOTALFLOW™	TOTAL FLOW	24" x 50' roll
TOTALFLOW™ END OUTLET (4")	OUTLET4-UNIV	N/A
TOTALFLOW™ TEE OUTLET (4")	TEE4-UNIV	N/A