

## TERM® Underslab Barrier



International Code Council  
Report ESR-3632  
Termite Barrier System

[Link to ICC ESR-3632 Report](#)

### DESCRIPTION

*TERM® Underslab Barrier* is a strong sheet barrier with an 8.5 mils high strength cross-laminated polyethylene backing topped with a 69 mil thick layer of TERM barrier sealant integrated into a high strength non-woven geotextile fabric. Total membrane thickness is factory controlled at 95 mils.

On the fabric side, a 4" 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" wide self-adhesive overlap seam.

### ADVANTAGES

*TERM Underslab Barrier* is the base component of the Gold level *TERM Barrier System*. This system will drastically reduce the need for pesticides during the life of the structure. The reason for this is:

- Pests are excluded from the structure by *TERM Barriers*.
- Pest entry points will not be created by normal building component movement during the life of the structure, because the sealant built into the *TERM Barriers* is elastomeric. *TERM* accommodates building movement, maintaining pest exclusion.
- Full underslab waterproofing is built in to *TERM Underslab Barriers*.

*TERM Underslab Barrier* is non-chemical. It is classified by the EPA as a *physical barrier*, and not as a *pesticide*.



Visitors' center, Texas

### COMPONENTS

*TERM Underslab Barrier* is a strong sheet barrier with a high strength cross-laminated polyethylene backing topped with a

## Product Data Sheet

U. S. Patent No. 7,488,523 and 7,686,903

EPA Establishment No. 89537-TX-1

69 mil thick layer of TERM barrier sealant integrated into a high strength non-woven geotextile fabric.

*TERM Underslab Barrier* is formulated for low temperature application down to 30°F (-1°C). Standard roll size is 50' x 48' (1.27m x 14.63m).

*Polyguard 650 LT Liquid Adhesive* is a fast drying, high tack rubber-based adhesive used on horizontal and vertical surfaces at temperatures above 30°F (-1°C). This solvent base product cannot be used on ICF surfaces.

*TERM Sealant Barrier* is a formulation which is suitable for sealing slab penetrations. Installation quality and cost will be used if *Polyguard FastPitch™*, a field formed flexible rim for containment of sealant around penetrations, is used.

*Polyguard 650 Mastic* is asphalt mastic with a low solvent content. It is used to waterproof exposed edges of *TERM Barrier* products.

*Polyguard Detail Sealant* is used with *Polyguard Barrier* to eliminate double-ply sheet on inside and outside corners or as a fillet on inside corners, *Polyguard Detail Sealant* insures adhesion to concrete in difficult areas to seal. *Polyguard Detail sealant* is a solvent free, non-isocyanate adhesive sealant which is low VOC /HAPS free. It is formulated to be compatible with the *Polyguard TERM* barrier sealant.

### REFERENCES

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

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

A key IPM element is; "Nonchemical pest preventative measures.....designed into the structure...". *TERM Barriers* are nonchemical pest preventative measures.

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

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

3. Incorporation of *TERM Sealant Barrier / membranes* into the building envelope should be a strong candidate for Innovation credit.

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

## INSTALLATION

### Safety

All *Polyguard* products must be handled in a safe manner. Some products (some mastics or primers) 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 Material Safety Data Sheet (MSDS) before use. MSDS sheets can be obtained at our website [www.polyguardproducts.com](http://www.polyguardproducts.com). Call *Polyguard* at 214-515-5000 if you have any questions.

The *650 LT Liquid Adhesive* is an industrial coating and would be harmful or fatal if swallowed. It is marked as red label from the stand-point of flash point.

Prohibit flames, sparks, welding and smoking during application.

Refer to product label for handling, using and storage precautions.

Solvents could be irritating to the eyes, flush with water and contact physician.

Avoid prolonged contact with skin and breathing of vapor or spray mist from liquid adhesive. *In confined areas, use adequate forced ventilation, fresh air masks, explosion-proof equipment and clean clothing.*

### Preparatory Work

Level, tamp or roll granular base prior to application of *TERM Underslab Barrier*. 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.

Apply *TERM Underslab Barrier* only in fair weather, when temperatures are above 30°F (-1°C) and rising



Sealing the footer

### TERM Underslab Barrier Application

Place the *TERM Underslab Barrier* with the polyethylene backing toward the soil and the fabric side is facing up to receive the concrete. The barrier should be placed with the longest dimension parallel with the direction of concrete pour. *TERM Underslab Barrier* should be lapped over the concrete footings and slab perimeter/grade beams to insure a tight bond with the concrete pour. Once the *TERM Underslab Barrier* 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" self-adhesive seam. Remove the 4" 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** *Underslab Barrier* overlap must be 4". Center a 12" wide piece of *UNDERSEAL FABRIC TAPE* over the seam, extend a minimum 6" on each side of lap in a heavy coat 150 - 200 sq. ft. per gallon (13.93 - 18.58 M<sup>2</sup>) of tacky *650 LT Liquid Adhesive*. Note that *Shur-Tac Liquid Adhesive* is not usable for this detail. Apply even pressure with the linoleum roller to obtain full adhesion.

**Patching** Take precautions to protect the *TERM Underslab Barrier* 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 *UNDERSEAL FABRIC TAPE* installed over *650 LT Liquid Adhesive* at coverage rate of 150 - 200 sq. ft. per gallon (13.93 - 18.58 M<sup>2</sup>) to the damaged *Underslab Barrier*. Patches must extend a minimum of 6" in all directions from the damaged area. All patches must be rolled with a hand roller or linoleum roller to insure proper adhesion and seal. Repaired areas must be sealed around the edges with *Detail Sealant*.

### Sealing Penetrations

Once the *TERM Underslab Barrier* has been installed, all penetrations must be sealed as follows:

1. Prepare all penetrations for application of *TERM Sealant Barrier* by:
  - a. Any sleeves on penetrations should be removed from the portion of the penetration where the pourable sealant is to be placed (minimum 2" high).
  - b. Prepare surface of penetrations with wire brush or sand.
2. Measure the length of *Polyguard FastPitch™* which will be needed to create a pitch pocket around the penetration or penetration cluster which is to be sealed. The *FastPitch™* rim should be long enough to allow a minimum of 2" space between the penetration and the rim. Also the rim should be a minimum of 2" away from any exposed edge of the *TERM Underslab Barrier*.
3. Cut a length of *FastPitch™* to the length determined in step 1 plus 3" for overlap of the ends.
4. Apply a coating of *650 LT Liquid Adhesive* along the line where you plan to apply the *FastPitch™* rim. Allow to cure until the adhesive is tacky.
5. Install the *FastPitch™* rim:
  - a. Set *FastPitch™* down in the approximate installation area.

- b. At the point where the ends of the *FastPitch*™ come together, remove 3" of release liner from the end of the *FastPitch*™. This will expose the adhesive face.
- c. The adhesive face on one end of the *FastPitch*™ which has been exposed should be adhered to the back side of the other end. Press to seal firmly.
- d. Now make final adjustments to the ring or oval shape of the *FastPitch*™ rim, making sure to allow the minimum required 2" spacing from anywhere where there is a penetration or an edge of the *TERM Underslab Barrier*. When the rim is aligned at the proper space, press down on the 2" vertical rim against the surface of the *TERM Underslab Barrier* which has been coated with the *650 LT Liquid Adhesive*.
- e. Once the *FastPitch*™ rim has been fully adhered in place around the prepared penetration(s) apply *TERM Pourable Penetration Barrier* at all penetrations extending a minimum of 2" onto Underslab barrier membrane, and 2" in depth. The depth of the sealant must completely fill the *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 *TERM UVR Barrier Tape* and secured to the pipe with a screw clamp.

### PACKAGING INFORMATION

Product	Unit of Measure	Approx Coverage	Lbs / Unit	Pallet
TERM Underslab Barrier - 50" x 48' (1.27 m x 14.63 m).	Carton (1 roll)	200 ft <sup>2</sup>	80	22 cartons
Underseal Fabric Tape - 12" x 200' (.31 m x 60.9 m)	Carton (1 roll)	200 ft <sup>2</sup>	70	24 cartons
Polyguard 650 LT Liquid Adhesive	5 Gal Pail or 4-1 Gal Pail	250 – 350 ft <sup>2</sup> /gallon	45 lb. 31 lb.	36 Pails 54 Cartons
Polyguard Detail Sealant	Carton with 12 30 oz. tubes	1/8" bead – 293 lf/tube 1/4" bead – 73 lf/tube 3/8" bead – 30 lf/tube	32 lb.	25 Cartons

### PHYSICAL PROPERTIES

Typical Properties of TERM Underslab Barrier			
Property	Test Method	English	Metric
Color	--	Red / white logo	Red / white logo
Barrier Thickness	ASTM D 1000 inch (mm)	.095	2.41
Long Term Testing against Termite Penetration <i>Coptotermes formosanus</i> and <i>Reticulitermes flavipes</i>	ICC AC 380 Acceptance Criteria for Termite Barrier Systems 4 test sites / 5 years duration <a href="http://www.polyguardbarriers.com/techref.htm">www.polyguardbarriers.com/techref.htm</a>	100% effective	100% effective
Elongation of Barrier Sealant – % Stretch Before Failure	ASTM D 412	> 1000%	> 1000%
Resistance to Radioactive Radon Gas	Radon Reduction Technology Laboratory % reduction in radon gas diffusion	97.1%	97.1%
Pesticide Repellency ( <i>Chlorodane, fipronil, permethrin</i> )	ASTM F 2130 (percentage penetration)	0%	0%
Permeance to Moisture / Water Vapor	ASTM E 96-B Grains/ft <sup>2</sup> /hr/in HGF(grains/hr/m <sup>2</sup> )	.03	.02
Breaking Strength - 1" wide Polyethylene Film Layer	ASTM D 882 PSI (N/mm <sup>2</sup> )	5700 PSI	39.3 N/mm <sup>2</sup>
Tensile Strength - 1" wide Polypropylene Geotextile layer	ASTM D 4632	80.0 lb	36.3 kg
Overlap Bond to Self	ASTM D 1000lb/in width / (N/mm)	8.0	1.4
Low Temperature Flexibility	ASTM D 146 180° bend over 1" mandrel at -15°F(-26°C)	No cracking or delamination	No cracking or delamination
Barrier Puncture Resistance	ASTM E 154 (Blunt Instrument)lb / (N)	224	996
Water Absorption	ASTM D 570	0.1%	0.1%
Resistance to Hydrostatic Head	ASTM D 5385Ft / M	231	70.4
Exposure to Fungi in Soil	GSA-PBS 07115 16 weeks	No effect	No effect

**Rebar Chairs** Steel reinforcement may be applied directly over the *TERM Underslab Barrier*. 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 steel and other common auxiliary loads.

#### **Inspection 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" (152 mm) onto previously applied barrier. Care should be taken to obtain good adhesion between barrier used for repairs and originally applied barrier.

Slit all "fishmouths", overlap the pieces, place patch over area, roll or press in place. Seal edges with *650 Mastic*.

#### **Ultraviolet Protection**

*TERM Underslab Barrier* can be adversely affected by ultraviolet light. The waterproofing system must be covered as soon as possible and not left exposed to sunlight for over 30 days.

**Material Storage:** Unload and store barrier and accessories carefully. Protect cartons and containers from weather, sparks, flames, excessive heat, cold and lack of ventilation. DO NOT stack barrier material higher than 5' (1.5m) vertically, nor double stack pallets. Store cartons on pallets and cover to prevent water damage. For best results, barrier should be stored 50-75°F prior to application.

#### **LIMITATIONS**

*Polyguard's TERM Barrier* 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. *Polyguard's TERM Barrier System* products are part of an Integrated Pest Management (IPM) program and where local regulations require, may be used to supplement termiticide applications.

There are other termite species, 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. The information in this data sheet is designed to be helpful to the reader. It is based on experience and information considered to be accurate and true. Readers should carefully consider and verify the information with investigation of any areas with uncertainty. *Polyguard* does not warrant the results to be obtained. Additionally, please read everything here in conjunction with *Polyguard's* conditions of sale, which are applicable to everything supplied by us. No statement here is intended for any use which would infringe any patent or copyright.

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

Contact *Polyguard Products, Inc.* for further information.