

TERM® Particle Barrier for Termites

For new construction / for existing structures

EPA Establishment No. 89537-TX-1

DESCRIPTION

Polyguard's *TERM Particle Barrier* was developed for the mainland



U.S. by Bryan Springer, a Galveston, TX based pest management professional, in 2005. Springer knew about the long record of research, and of the use in Hawaii, Australia, and the Pacific. Springer developed a product using mainland U.S. sources, and had the new barrier tested at Texas A&M's Department of Urban and Structural Entomology.

Particle termite barriers were invented by entomologist Dr. Walter Eberling, University of California at Berkeley, in 1956. Significant developmental work at the University of Hawaii in the 1980's led to commercial application in Hawaii, Australia, and other parts of the world. However particle barriers have never been available in the mainland United States until now.

The principle behind particle barriers is simple. According to the University of Hawaii website;

"There are three basic requirements for a particulate barrier to be effective. First the granules must be small enough to pack well so there aren't any gaps the termites can squeeze through. At the same time, the granules must be big and heavy enough that the termites can't pick them up and move them. Third, the granules must be too hard for the termites to chew."

http://www2.hawaii.edu/~entomol/research/r_btb.htm

Further research at Texas A&M defined additional key properties relating to particle angularity, fineness modulus, and weighted particle size.

Polyguard's particle barrier consists of quartz particulates exactly sized and shaped to block both the *Reticuletermes flavipes* and *Coptotermes formosanus* species.

Product Data Sheet

ADVANTAGES

The *TERM Particle Barrier* is a termite exclusion product. Used around the perimeter of the building, it can greatly reduce the quantity of termiticides needed to protect the structure.

Polyguard has registered our barrier manufacturing facility with the EPA, who along with state agencies regulates pesticides. However, Polyguard's barriers are classified by the EPA as "devices", since they contain no toxic components.

Termites trying to get into a structure are unable to penetrate the *TERM Particle Barrier*. Also important, in the case of the *Reticuletermes flavipes* species is that the insects are unable to get out of a structure which they previously penetrated. In the majority of infested structures, there is not sufficient moisture in the building for *Reticuletermes flavipes*, so they have to return to the soil to obtain moisture.

The picture below shows the end of a *Reticuletermes flavipes* mud tube. The *Reticuletermes flavipes* came out of the home at the foot of the corner of the foundation (see light brown mud tube in the crack). The termites were unable to penetrate the barrier, so they built a new mud tube horizontally, searching for a place where they could breach the barrier. The finger points to the end of the mud tube. At that point the *Reticuletermes flavipes* were dissipated and died from lack of moisture.



*Pointing to a place where *Reticuletermes flavipes* were blocked from leaving a structure to replenish moisture*

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. The 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.

USES OF TERM PARTICLE BARRIER

The uses listed below are for either new construction, or on existing structures.

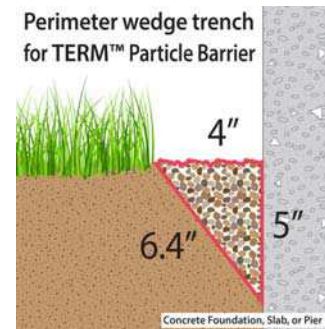
1. Properly installed around the perimeter of a structure, the barrier will block entry of termites to the home, and exit of termites which are inside the home.
2. As a termite barrier at bath traps.
3. As part of a TERM All Pest Bath Trap Barrier which excludes termites, fire ants, rodents, snakes, and moles. (See data sheet for *TERM All Pest Bath Trap Barrier*)

Important: TERM Particle Barrier should be installed and maintained by a Polyguard approved Pest Management Professional who is licensed in that jurisdiction. Contact Polyguard for details.

INSTRUCTIONS FOR USE AS A PERIMETER TRENCH AROUND STRUCTURE

(Installation Video: <https://www.youtube.com/watch?v=IRGQ7fsnXUk>)

1. Dig a wedge shaped trench, minimum 4" across the top, and 5" deep down the vertical concrete face. These distances are plus or minus 1" because of the difficulty of digging exactly. The trench should be installed wherever vertical concrete surfaces of the structure are exposed around the entire perimeter.
2. *Note: For most soils the TERM Trencher*, a patent pending tool designed to create a trench of the correct depth and width, can be used, with a significant reduction of installation effort. Pictured below is a sequence showing the *TERM Trencher* creating a properly sized wedge.



Aim Trencher



Fire Trencher



Pull Trencher



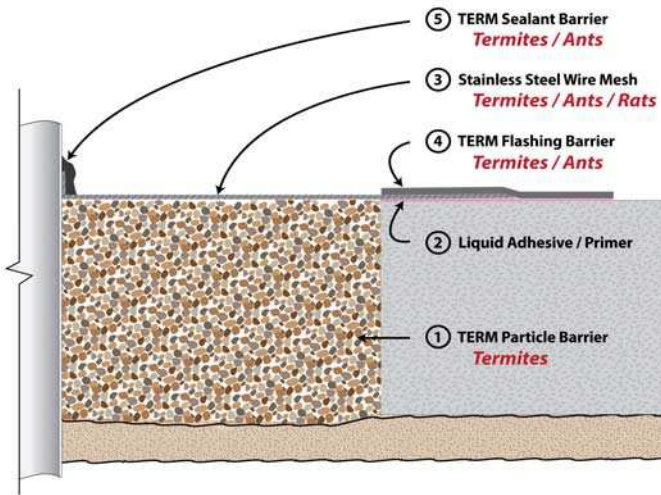
Until step is level with soil

3. Clean the vertical face of the concrete so that the surface will be completely clean of mud and debris. A quick way to do this is with a hosing of the exposed area of the wall.
4. Fill the trench to the grade level with *TERM Particle Barrier*.

Inspection and Repairs

Note that regular inspection (approximately every six months) and repair (if necessary) of the TERM Particle Barrier perimeter is necessary. The following are some things which can compromise the barrier:

- a. Cats using the barrier as litter.
- b. Dogs digging up the barrier.
- c. Landscaping or construction activities which displace the barrier or cover it with dirt.
- d. Overgrowth by vegetation
- e. Debris or mulch.
- f. Children playing in the area.



INSTRUCTIONS FOR TERM All Pest Bath Trap Barrier

The *TERM Particle Barrier* is a key component of the *TERM Bath Trap*, required as a subterranean termite barrier. The remainder of the components protects against fire ants, rodents, snakes, moles, etc.

The *TERM Full Bath Trap System* has a separate data sheet.

<http://polyguardbarriers.com/Sub-sites/Literature/datasheets/TERM%20Bath%20Trap%20Barrier.pdf>

Under normal circumstances this bath trap installation should not require maintenance.

Material Storage: Barrier and accessories should be unloaded and stored carefully. Do not stack barrier material higher than 5' (1.5m) vertically, nor double stack pallets. Cartons should be stored on pallets and covered to prevent water damage.

LIMITATIONS

CRAWL SPACE / PIER AND BEAM WARNING AND EXCLUSION

Polyguard TERM Particle Barrier is generally not suitable for application to crawl spaces or pier and beam construction under new or existing structures.

The reason for this exclusion is the typical tight spaces, which create difficulty of making a proper installation, of checking for correct installation, of regular inspection and maintenance, and of checking the quality of regular maintenance. We advise against depending upon *TERM Particle Barrier* to exclude subterranean termites in crawl spaces and pier and beam structures, unless the structure has generous space – and sufficient lighting - for easy access and installation, inspection, and maintenance at all points underneath the structure.

Proper installation, regular inspection and maintenance are critical for *TERM Particle Barrier*, and too important for a situation which forces people, or invites them, to cut corners.

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.

PHYSICAL PROPERTIES

Property	Typical Property
Fineness Modulus	3.83
ASTM D 451 – Minimum % retained of sieve size 8 - 14	90%
% of void space (calculated using water displacement)	1.72
Hardness – Mohrs Hardness Scale	> 6
Gradient Angularity Mean gradient angularity	2000 - 3000

PACKAGING INFORMATION

Product	Unit of Measure	Weight / Unit
Polyguard TERM Particle Barrier	Bag	50 lb.