

University Research

The summary below is a selection of testing for termite exclusion, with additional testing for exclusion of other insects and pests or for other potential hazards..

The summary does not include tests in process, of which there are several. The summary has also excluded several tests where a potential new product failed, as we do not want to show competition what not to do.

Finally, there are several successful tests not shown, representing potential future products. These are excluded for reasons of confidentiality.

If you are a specifier, researcher, or a regulator, we will be happy to send you a copy of any test reports.

Selected Test Results – 2000 to 2021 -TERM Barriers vs Termites and Other Pests

Year	Product Tested	Tested By	Description of test
2000	TERM Membrane Barrier	Texas A&M University	This was a lab test of the first prototype TERM Membrane Barrier. Both Eastern termites <i>Genus Reticulitermes</i> and Formosan termites <i>Genus Coptotermes</i> were tested. This was a “no choice” test.
<i>Results and notes:</i> Neither genus of termites could penetrate the membrane barrier			
Year	Product Tested	Tested By	Description of test
2003	TERM Membrane Barrier	Texas A&M University	ASTM F2130 – 01 Standard Test Method for Measuring Repellency, Retention, and Penetration of Liquid Pesticide Formulation Through Protective Clothing Materials.

There are two reasons that this test is meaningful. 1. Today, most states require a termiticide pretreatment prior to building the ground level slab. With TERM Barriers, termiticide treatment will not penetrate through the TERM Barrier. 2. Today construction is often built on land historically used for farming, which may have a residual of highly poisonous termiticides used in past years which can remain active in the soil for > 50 years. Over years some farmland became a “pesticide brownfield”. *Results and notes:* The result of the test was no penetration of TERM Membrane by the pesticides.

Year	Product Tested	Tested By	Description of test
2008	TERM Membrane Barrier	Texas A&M University	This was an interim review of long-term field testing which had begun in 2003. TERM Membrane was tested at 5 sites, against both <i>R. flavipes</i> and <i>C. formosanus</i> .

Results and notes: There were no damage to any of the wood which had been treated with TERM Membrane. Wood damage was found on the untreated controls at all 3 *R. flavipes* sites. None of the wood at the 2 *C. formosanus* sites was damaged.

Year	Product Tested	Tested By	Description of test
2010	TERM Particle Barrier	Texas A&M University	This was a “ <i>reduced to practice</i> ” test. 15 Houston/Galveston area homes, all with live termite activity, received perimeter treatments of TERM Particle Barrier in 2005.

Results and notes: After 5 years inspections showed no termite activity in any of the homes.

Year	Product Tested	Tested By	Description of test
2011	TERM Membrane	Texas A&M University	5-year field trials were conducted to test TERM Membrane Barrier against <i>Coptotermes formosanus</i> and <i>Reticulitermes flavipes</i> . The tests were performed at four termite dense locations near the Texas Gulf Coast.

Results and notes: All wood control replicates at all 4 locations were destroyed. All wood replicated protected by TERM Membrane Barrier at all 4 locations were undamaged.

Year	Product Tested	Tested By	Description of test
2012	TERM Particle Barrier	Texas A&M University	This was a paper published in <i>The Southwest Entomologist</i> showing the results of efficacy of various size combinations of particles as termite barriers,

Results and notes: The study showed that particle sizes of 8, 10, and 12 were effective in blocking both *Reticulitermes flavipes* and *Coptotermes formosanus*. It also concluded that angularity, weighted particle size, and fineness modulus were additional factors in barrier performance. *The controls consisted of play sand, which termites completely penetrated.*

Year	Product Tested	Tested By	Description of test
2013	TERM Membrane	Texas A&M University	This laboratory trial measured the effectiveness of TERM Membrane as a barrier against <i>S. Invicta</i> (red imported fire ants). This was a “ <i>no choice</i> ” test, which means that the fire ants had no other food source available.

Results and notes: None of the TERM Membrane treatments were breached by the fire ants attempting to reach the food source on the other side of the membrane.

Year	Product Tested	Tested By	Description of test
2013	TERM Particle Barrier	Texas A&M University	This lab test against both <i>R. flavipes</i> and <i>C. formosanus</i> applied the Texas A&M property criteria developed in 2011 – 2012 to two raw material sources.

Results and notes: Both raw material sources were determined to be acceptable.

Year	Product Tested	Tested By	Description of test
2015	TERM Sealant Barrier	LSU – Wood Durability Laboratory	Formosan termite resistance of TERM Sealant was determined by testing using the American Wood Preservative Association (AWPA) E-1. Both “choice” and “no choice” tests were performed

Results and notes: Samples protected by the TERM Sealant were not damaged in either test.

Year	Product Tested	Tested By	Description of test
2015	TERM Particle Barrier	University of Georgia	This test evaluated TERM Particle Barrier against <i>Reticulitermes flavipes</i> .

Results and notes: TERM Particle Barrier blocked the termites in every treatment replicate. All controls failed.

Year	Product Tested	Tested By	Description of test
2015	TERM Particle Barrier	Texas A&M University	This test evaluated the performance of TERM Particle Barrier against sandblasting sand, “16 grit sand”, and plain sand.

Results and notes: This evaluation was done to disprove the large amount of misinformation about sand particle barriers. Misinformation is found on the Internet and several other places. The misinformation advises that “sandblasting sand” or “16 grit sand” or even plain “sand” is effective as termite barriers. All university testing on particle barriers contradicts this advice. This test was performed to compare TERM Particle Barrier to sandblasting sand, “16 grit sand”, and simple play sand. TERM Particle Barrier was not penetrated. The “sandblasting sand”, “16 grit sand”, and plain “sand” were all penetrated within 24 hours.

Year	Product Tested	Tested By	Description of test
2015	TERM Particle Barrier	LSU Department of Entomology	This test evaluated TERM Particle Barrier against <i>Coptotermes formosanus</i> .

Results and notes: In control replicates, termites reached the bottom within 24 hours. In the TERM Particle Barrier replicates, no termites reached the bottom after 8 weeks.

Year	Product Tested	Tested By	Description of test
2015	TERM Micromesh Screen	Texas A&M University	Screens were tested for their ability to block scorpions and carpenter ants.

Results and notes: The tests showed us what screen types and sizes are needed to exclude these two insects.

Year	Product Tested	Tested By	Description of test
2015	TERM Sealant Barrier	New Orleans Mosquito and Termite Control Board	TERM Membrane was used to protect six untreated pine stakes. The coated stakes were placed in two termite collection crates in the field, along with six untreated wood stakes, for one month.

Results and notes: At the end of the one month trial the TERM membrane was removed and found to be intact.

Year	Product Tested	Tested By	Description of test
2016	TERM Termite Sealant	Texas A&M University	This is a report on field trial testing and results obtained at multiple sites with TERM Membrane Barrier tested against <i>Coptotermes formosanus</i> and <i>Reticulitermes flavipes</i> in the period between 2003 and 2011.

Results and notes: In all 5-year field tests, termites never penetrated the TERM Membrane Barrier. Untreated wood controls were all destroyed.

Year	Product Tested	Tested By	Description of test
2017	TERM Sealant	Texas A&M University	TERM Sealant Barrier was tested against Formosan subterranean termites at simulated plumbing slab penetration treatments. Two different treatment methods were used, and sealant cure times of 7, 30, 60, 90, and 360 days were tested.

Results and notes: All treatment variations and sealant cure time variations have been completed and monitored. No termites penetrated the sealant to reach the food on the other side of the simulated slab penetrations.

Year	Product Tested	Tested By	Description of test
2018	TERM Particle Barrier	Polyguard Technical Personnel	This 3-year Demonstration Project installed TERM Particle Barrier around the exposed perimeter of seven structures in the Houston/Gulf Coast area. All homes had termite infestations at the time of the installation. The objective was to monitor performance after 2 weeks, and after 1, 3, 6, 9, 18, 24, and 36 months.

Results and notes: None of the structures had termite reinfestation at any of the inspections.

Year	Product Tested	Tested By	Description of test
2020	TERM Membrane	University of Hawaii	This was a 5-month lab test using control, choice, and no choice arenas. The purpose of using choice and no choice was to determine if termites could reach the wood when other food was available (<i>choice</i>), or if termites could reach the wood when there was no other food available (<i>no choice</i>).

Results and notes: All termites in the no-choice TERM arena died after two months because they were unable to penetrate the TERM membrane to reach the wood underneath, subsequently starving to death. Termites in the control and choice arenas were able to reach exposed wood, and thus survived for 5 months. The results demonstrated that the TERM membrane was able to prevent termite penetration with or without the presence of other food sources.

Year	Product Tested	Tested By	Description of test
2021	TERM Membrane Protection of CLT	University of Hawaii	A 5-month controlled lab test of CLT wrapped with TERM Membrane using no choice arenas. The purpose of using no choice was to determine if Formosan termites could reach the CLT food source by penetrating TERM Membrane. If termites could not penetrate the TERM Membrane to reach the CLT food source, they would die of starvation.

Results and notes: All termites in arena protected by TERM Membrane died within 2½ months because they were unable to penetrate the TERM membrane. CLT samples in arenas protected by TERM Membrane suffered an average 0% weight loss and were rated as 10 “*Sound*” using the AWPA (*American Wood Protection Association*) rating system.

Termites in unprotected control arenas were able to reach the exposed CLT food source, and thus 81% to 89% survived to the end of the 5-month test.. CLT samples in unprotected arenas suffered an average 40% weight loss and were rated as 4 “*Very severe attack*”.

Year	Product Tested	Tested By	Description of test
2021	TERM Particle Barrier Protection of CLT	University of Hawaii	This was a 5-month controlled lab test of CLT protected by TERM Particle Barrier using no choice arenas. The purpose of using no choice was to determine if Formosan termites could reach the CLT food source by penetrating TERM Particle Barrier. If termites could not penetrate the TERM Particle Barrier to reach the CLT, they would die of starvation.

Results and notes: All termites in no-choice arenas protected by TERM Particle Barrier died after three months because they were unable to penetrate the TERM Particle Barrier to reach the CLT food source. CLT samples in the arena protected by TERM Particle Barrier suffered 0% weight loss and were rated as 10 “*Sound*” using the AWPA (*American Wood Protection Association*) rating system

Termites in unprotected control arenas were able to reach exposed wood, and thus 84% to 92% survived for 5 months when the trial was terminated. CLT samples in unprotected arenas suffered an average 38% weight loss and were rated as 6 “*Severe attack, 30-50% of cross-sectional area affected*” to 7 “*Moderate/severe attack, penetration, 10-30% of cross-sectional area affected*”.