

**Final Report  
for  
Polyguard Products, Inc.  
John Muncaster**

**May 19, 2011**

**I. Title:** Evaluation of Polyguard Termite Barrier against *Coptotermes formosanus* and *Reticulitermes flavipes* subterranean termites.

**II. Investigators:** Dr. Roger E. Gold, Professor and Endowed Chair; and Chris Keefer, Assistant Research Scientist; Center for Urban and Structural Entomology, Department of Entomology, 2143 TAMU, Texas A&M University, College Station, TX 77843-2143.  
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**III. Objective:** The purpose of this field study was to evaluate the efficacy of Polyguard Termite Barrier against subterranean termites and the durability against environmental conditions as compared to untreated controls.

**IV. Methods and Procedures:** Center personnel located sites with active subterranean termite populations. Sites 1 and 2 were located in College Station, TX. Site 1 was located at the intersection of F&B Road and Harvey Mitchell Parkway in a wooded lot, and Site 2 was located in a wooded lot on Harvey Mitchell Parkway near the College Station Public Library. Both sites were confirmed to have active *Reticulitermes flavipes*. Site 3 was located in a wooded lot in Beaumont, TX at 3599 Martin Luther King Boulevard and Site 4 was located in Baytown, TX

off Decker Drive near Gooseneck Creek in a wooded lot. Both sites were confirmed to have active *Coptotermes formosanus*.

A total of ten pieces of untreated southern yellow pine (12.70 X 0.63 X 5.08) cm were buried at each site. Five were wrapped and sealed in Polyguard barrier and five untreated controls (not wrapped) were buried within 0.91 m of the active termite sites vertically in the soil within 2.54 cm of the surface. All treatments and untreated controls were marked with a metal identification tag. On, or about, the initial burial date samples were unearthed for the first two years and the fifth year. The samples were brought back to the laboratory, inspected, any rips, tears and termite damage to the Polyguard barrier, pine boards wrapped inside, or the pine untreated controls were documented. Any termite damage to the pine boards wrapped in Polyguard or pine untreated control boards were given a rating as prescribed by the American Society of Testing Materials (Table 1). The initial burial date for Sites 1 and 2 in College Station, TX was 13 October 2005. The initial burial date for Sites 3 and 4 in Baytown, TX and Beaumont, TX was 25 October 2005.

**V. Results:** The Polyguard treatments and untreated controls located at Sites 1 and 2 were excavated on 13 October 2006. The treatment at Site 1 was not damaged on the exterior, and the pine board inside the Polyguard was intact and undamaged (Table 2). The untreated controls at Site 1 had trace damage by termites. The treatment at Site 2 was undamaged on the exterior and the pine board inside was intact and undamaged. The control had heavy damage by termites. The Beaumont and Baytown, TX Sites were excavated on 25 October 2006. The samples at Site 3, located in Beaumont, TX could not be found due to damage by hurricane Ike. The untreated control was located and it had no damage. The treatment at Site 4 in Baytown, TX was intact and there was no damage to the exterior of the Polyguard barrier and the board inside was undamaged. The control at Site 4 was undamaged by termites.

In year two, Sites 1 and 2 were excavated on 24 October 2007. The treatment located at Site 1 was undamaged by *R. flavipes*. The control sample located at Site 1 had subterranean termite

damage and received a rating of 9.0. The Polyguard sample at Site 2 was undamaged by subterranean termites. The untreated control at Site 2 was completely consumed by subterranean termites. Site 3 and Site 4 were excavated on 31 October 2007. The treatment and untreated controls at both Sites were intact and undamaged by termites. In Year 5, Sites 1 and 2 were excavated on 5 April 2011. The treatment at both sites was intact and there was no termite damage. The untreated controls at both sites were completely consumed, only the metal identification tag was found. Sites 3 and 4 were excavated on 18 April 2011. The treatments at both Sites were intact and undamaged by termites. The untreated controls at both sites were completely consumed, only the metal identification tag was found. The results of all inspections can be found in Table 2.

**VI. Conclusions:** The Polyguard Termite Barrier showed 100% efficacy against subterranean termites for 5 years post-treatment in the field. There were no breaches or feeding by subterranean termites on the wrapped (treatments) boards at any time post-treatment. Polyguard also showed 100% efficacy against environmental conditions for the duration of the study. There were no rips or tears in the Polyguard detected at any time post-treatment which could have allowed subterranean termites access to the wrapped boards inside.

**VII. Signatures:**



Roger E. Gold  
Endowed Chair and Professor

May 31, 2011  
Date



Chris Keefe  
Assistant Research Scientist

May 19, 2011  
Date

Table 1. Damage as prescribed by American Society of Testing Materials (ASTM)

No. Rating	Description
10.0	No Damage
9.0	Trace Damage
7.0	Moderate Damage
4.0	Heavy Damage
0.0	Destroyed

Table 2. Results of Polyguard inspections through 5 years post initiation.

Site	Termite Species	Initiation	Year 1		Year 2		Year 5	
			Treatment	Control	Treatment	Control	Treatment	Control
1	<i>Reticulitermes flavipes</i>	10/13/2005	Z	X 9.0	Z	X 9.0	Z	X 0.0
2	<i>Reticulitermes flavipes</i>	10/13/2005	Z	X 4.0	Z	X 0.0	Z	X 0.0
3	<i>Coptotermes formosanus</i>	10/25/2005	Z	X 0.0	Z	X 0.0	Z	X 0.0
4	<i>Coptotermes formosanus</i>	10/25/2005	Z	X 9.0	Z	X 9.0	Z	X 0.0

Z=no termite damage

X=termite damage

Number following X indicates level of termite damage as prescribed by ASTM damage ratings (Table 1)