

Proven Performance. Superior Support.

Methods to Control Existing Drywood Termite Infestations

Methodology	Vikane <sup>®</sup> gas fumigant	Chemical liquids, dusts, aerosols and foams	Electrocution (Electro-Gun)	Microwaves	Heat (Thermal Pest Eradication)
Third-Party Validation of Efficacy	<p><b>Whole-structure treatment:</b> The entire structure is tarped and thoroughly fumigated with Vikane, killing all detected and undetected termites.</p> <p>Most thorough, consistent and efficacious treatment of infested structures were evaluated in more than 20 years of university research and nearly 50 years of commercial use.<sup>1,2,3</sup> Researchers and pest control operators acknowledge that whole-house fumigation, compared to spot treatments, penetrates better into concealed locations and large volumes of wood are treated more efficiently.<sup>4</sup></p>	<p><b>Spot treatment:</b> Detected, accessible colonies are treated by drilling small holes into which chemicals are injected.</p> <p>Research indicates <b>surface treatment alone is inadequate to control existing infestations.</b><sup>2,5</sup> The efficacy is highly variable based on active ingredient and formulation. Research documents that surface treatment or gallery injections of liquid borate formulations did not provide adequate control of drywood termites.<sup>2,5</sup> There is no published, peer-reviewed research on efficacy of many active ingredients (fipronil, imidacloprid, citrus oil) and formulations (foam) when applied in infested structures.</p>	<p><b>Spot treatment:</b> Detected, accessible colonies are treated with high-voltage, low current, which kills termites in a localized area.<sup>6</sup></p> <p>Efficacy in limited field trials is highly variable and dependent upon the drill-and-pin method (drill holes to insert copper wire into termite galleries to direct current).<sup>1</sup></p>	<p><b>Spot treatment:</b> Detected, accessible colonies are treated. Reflective material is placed on outside walls to contain microwaves. Microwave energy heats and kills termites in a localized area.</p> <p>Efficacy in limited field trials is highly variable and dependent on treatment time and wattage.<sup>1</sup></p>	<p><b>Spot/localized treatment:</b> The temperature inside the structure is raised with propane heaters to 140 to 150 F for several hours to one day. Internal wood temperatures must be raised to 120 F for at least 33 minutes to kill termites.<sup>6,7</sup> (This method requires tarping to treat the entire structure.)</p> <p>Efficacy in limited field trials is variable and dependent upon the lethal temperatures achieved in the cores of all infested wood.<sup>1</sup></p>
Limitations on Treatment Application by Termite Location in Structure	<p><b>There are no limitations.</b> Vikane penetrates all airspaces in termite galleries within the tarped structure to kill termites.<sup>1,2</sup></p>	<p>Termite colony galleries must be accessible to the applicator.<sup>2,5</sup></p>	<p>Termite colonies must be accessible to the applicator. Common building materials, such as metal, concrete and glass,<sup>6</sup> and depth of termites in wood<sup>1</sup> can interfere with application and limit control.</p>	<p>Termite colonies must be accessible to the applicator. Metal in walls and heat sinks can interfere with application and limit control.</p>	<p>Termite colonies must be accessible to the applicator for localized treatment. Large, structural beams and wood in contact with heat sinks, such as concrete and tile, can retard heat distribution.<sup>1,6,7</sup></p>



# Vikane®

## Specialty Gas Fumigant



### Methods to Control Existing Drywood Termite Infestations, continued

	Vikane® gas fumigant	Chemical liquids, dusts, aerosols and foams	Electrocution (Electro-Gun)	Microwaves	Heat (Thermal Pest Eradication)
Limitations on Efficacy by Applicator Ability to Detect Termites	There are no limitations. Vikane penetrates all airspaces in termite galleries to control detected and undetected termites. <sup>1,2</sup>				
Possibility of Damage by Treatment Application	The possibility of damage is low when Vikane is used according to the label. Improper tarping may cause damage.	Injection holes in walls may need repair.	Up to 80 percent of treated wood in field trials had visible damage, including burn marks. <sup>1</sup> Holes from the drill-and-pin method damage wall coverings, walls and wood members. <sup>5</sup> Electronic equipment may be damaged.	Microwave treatment is a potential fire hazard, and the heat generated may severely char wood surfaces or interiors. <sup>1,6</sup>	Heat treatment is a potential fire hazard. <sup>1</sup> Heat may irreversibly damage heat-sensitive contents, including paint, <sup>7</sup> plumbing, <sup>1</sup> electronic devices and appliances, cable wiring, plastic blinds, photo materials, audiotapes, videotapes, CDs, plants, batteries, food, cosmetics, spray cans, ammunition, Plexiglas and wooden artwork.

#### References Cited

- <sup>1</sup>Lewis, V.R. and M.I. Heverty. 1996. Evaluation of six techniques for control of the Western drywood termite (Isoptera: Kalotermitidae) in structures. *Journal of Economic Entomology* 89(4): 922-934.
- <sup>2</sup>Scheffrahn, R.H., N.-Y. Su, and P. Busey. 1997. Laboratory and field evaluations of selected chemical treatments for control of drywood termites (Isoptera: Kalotermitidae). *Journal of Economic Entomology* 90(2): 492-502.
- <sup>3</sup>Su, N.-Y., and R.H. Scheffrahn. 1986. Field comparison of sulfury fluoride susceptibility among three termites species (Isoptera: Kalotermitidae, Rhinotermitidae) during structural fumigation. *Journal of Economic Entomology* 79(4): 903-908.
- <sup>4</sup>Lewis, V.R. 2003. IPM for Drywood Termites (Isoptera: Kalotermitidae). *Journal of Entomological Science* 38(2): 181-199.
- <sup>5</sup>Scheffrahn, R.H., N.-Y. Su, J. Kracek, A.V. Liempt, V. Maharajh, and G.S. Wheeler. 1998. Prevention of colony foundation by *Cryptotermes brevis* and remedial control of drywood termites (Isoptera: Kalotermitidae) with selected chemical treatments. *Journal of Economic Entomology* 91(6): 1387-1396.
- <sup>6</sup>Lewis, V.R. 2002. Drywood Termites. Pest Notes. University of California Agriculture and Natural Resources. Publication 7440.
- <sup>7</sup>Woodrow, R.J. and J.K. Grace. 1998. Field Studies on the Use of High Temperatures to Control *Cryptotermes brevis* (Isoptera: Kalotermitidae). *Sociobiology* 32(1): 27-49.

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