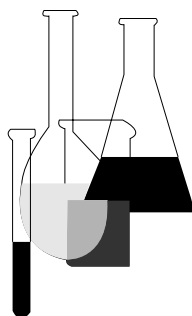




Product Performance Test Guidelines

OPPTS 810.3600 Structural Treatments



INTRODUCTION

This guideline is one of a series of test guidelines that have been developed by the Office of Prevention, Pesticides and Toxic Substances, United States Environmental Protection Agency for use in the testing of pesticides and toxic substances, and the development of test data that must be submitted to the Agency for review under Federal regulations.

The Office of Prevention, Pesticides and Toxic Substances (OPPTS) has developed this guideline through a process of harmonization that blended the testing guidance and requirements that existed in the Office of Pollution Prevention and Toxics (OPPT) and appeared in Title 40, Chapter I, Subchapter R of the Code of Federal Regulations (CFR), the Office of Pesticide Programs (OPP) which appeared in publications of the National Technical Information Service (NTIS) and the guidelines published by the Organization for Economic Cooperation and Development (OECD).

The purpose of harmonizing these guidelines into a single set of OPPTS guidelines is to minimize variations among the testing procedures that must be performed to meet the data requirements of the U. S. Environmental Protection Agency under the Toxic Substances Control Act (15 U.S.C. 2601) and the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. 136, *et seq.*).

Final Guideline Release: This guideline is available from the U.S. Government Printing Office, Washington, DC 20402 on *The Federal Bulletin Board*. By modem dial 202-512-1387, telnet and ftp: fedbbs.access.gpo.gov (IP 162.140.64.19), or call 202-512-0132 for disks or paper copies. This guideline is also available electronically in ASCII and PDF (portable document format) from EPA's World Wide Web site (<http://www.epa.gov/epahome/research.htm>) under the heading "Researchers and Scientists/Test Methods and Guidelines/OPPTS Harmonized Test Guidelines."

OPPTS 810.3600 Structural treatments.

(a) **Scope**—(1) **Applicability.** This guideline is intended to meet testing requirements of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 U.S.C. 136, *et seq.*)

(2) **Background.** The source material used in developing this harmonized OPPTS test guideline is OPP guideline 95–12 Structural treatments (Pesticide Assessment Guidelines, Subdivision G: Product Performance, EPA report 540/9–82–026, October 1982).

(b) **Overview.** This guideline concerns the guidance on efficacy data for evaluation of invertebrate control pesticides used to control pests such as termites, wood-destroying beetles, wharf borer, carpenter ant, and carpenter bee in structures such as buildings, structural members, and stored lumber.

(c) **General considerations**—(1) **Site selection.** When selecting an application site for testing invertebrate control agents against structural pests, such factors as temperature, humidity, moisture, soil texture, and freezing-thawing conditions should be considered and reported.

(2) **Number of trials.** A minimum of 3 large-scale geographically-separated trials are generally necessary, but the number of trials can vary somewhat due to the accessibility of infestations, fluctuations in pest population pressures, behavior, and other important considerations in the biology of the target pest.

(3) **Residual considerations.** The soil residual potential for termite control products is important in determining the length of time that such pesticides will be effective, and is measured by the time over which the toxic barrier resists penetration. Soil treatments require that special care be exercised to assure that water supplies are not contaminated with the pesticide and that the treatment does not cause intolerable injury to building foundations, plants, shrubs, and other ornamental plants.

(4) **Application techniques and equipment.** Data should be developed to support the use of pressurized, impregnation, or other specialized types of application equipment:

(5) **Evaluation and reporting procedures**—(i) **General.** The procedures used to evaluate product performance should be specified in the data. Reports should include insect counts, amount of damage, or to the measures of determining the effectiveness of the test product. Results should include the average infestation reduction throughout the sampled post-treatment period compared with that in untreated controls. Data on pest counts or other measures of control should be summarized. The test data should indicate that there are no adverse effects such as warping or staining to wallpaper, paint, tile, varnish, or other surfaces if they are likely to be contacted by the product when applied according to label directions

for use. The data should also indicate that the material does not impart long-lasting objectionable odors to furniture, cabinets, or other indoor treatment sites which may be specified on the label.

(ii) **Subterranean termites.** Subterranean termite attacks in a structure are prevented or controlled through impregnation of soil with a termite toxicant beneath and adjacent to the structure. Protection of wood from attack by subterranean termites may also be provided by impregnation of the wood by a termite toxicant.

(iii) **Dampwood termites.** Dampwood termites are evaluated by the same procedures that are practical for the control of subterranean termites.

(iv) **Drywood termites.** Drywood termites are controlled by fumigation or treatment of channels with dusts, liquids, or spot fumigants for the elimination of drywood termites and should be evaluated by observing the effect of such treatments under field conditions. Absorptive dusts have been used as a protective barrier treatment and should be evaluated on this basis in field treatments.

(d) **Specific considerations and suggested performance standards—(1) Subterranean termites are by far the most important structural pests.** These insects damage wood and other cellulosic building materials causing major property damage particularly in the southern areas of the United States. Control procedures usually are reflective of the fact that colonies of these termites require contact with the soil as opposed to drywood or dampwood termites which may exist independently of soil moisture.

(i) **Preventive treatments—soil barriers—(A) Data considerations.** Subterranean termite attacks in a structure are prevented or controlled through toxicant impregnation of the soil beneath and adjacent to the structure. Data should indicate that the treatment does not cause intolerable injury to building foundations, plants, shrubs, or to other ornamentals. The effectiveness of prophylactic termite treatments is measured by the time over which the toxic barrier remains effective in resisting penetration by the termites. Therefore, the efficacy data should indicate the establishment and maintenance of this toxic barrier.

(B) **Test methods.** Published laboratory methods are not currently recognized by the Agency as giving a reliable evaluation of soil toxicants for termite control, but three field tests are recognized as giving a reliable evaluation of soil toxicants: The Stake method, the Ground board method, and the Modified ground board method.

(C) **Suggested performance standards.** Data derived from such testing should provide complete resistance to termite attack for a period of 5 years, based upon annual reinspection. The tests should be in geographic

areas which provide year-around pest pressure (usually in the southern U.S.).

(ii) **Preventive treatment—wood impregnation—(A) Data considerations.** Subterranean termite damage in a structure is also prevented by treatment of susceptible materials. Those treatments are applied as dips, brush-on applications, sprays, or pressure treatments. The activity of the materials is such that damage to the treated cellulosic substance is precluded or reduced either because the treated material is toxic upon ingestion or sufficiently repellent that ingestion does not occur. The effectiveness of such treatments is determined by a measurement of the duration for which the treated material resists termite attack.

(B) **Test methods.** Modifications of the Stake method, Ground board method, and Modified ground board method are acceptable in evaluating impregnated wood products.

(C) **Suggested performance standards.** When acceptable data derived from testing for at least 2 years but less than 5 years shows a complete resistance to termite attack, the product may be registered contingent upon a restriction which specifies annual reinspection. The tests should be conducted in geographic areas which provide year round pest pressure (usually in southern U.S.).

(iii) **Infested sites—(A) Data considerations.** Data should be derived from experiments utilizing field infestations. These experiments must evaluate the effects of the treatment as related to the infested site.

(B) **Test methods.** [Reserved]

(C) **Suggested performance standards.** Data should indicate not only that the insects are killed, but that those insects in egg and nymphal instars at the time of treatment will be controlled either by immediate or residual toxicity. The data should clearly indicate that the entire colony is destroyed by isolation from the essential water source by the establishment of a pesticidal barrier, through the penetration of all wood galleries by the pesticide, or by both routes.

(2) **Dampwood termites and drywood termites.** Dampwood termites may exist in structural members where a water source is constantly available to the colony due to faulty plumbing, roof leaks, or other factors. Drywood termites can colonize in wood or other cellulosic substances regardless of any apparent water source, since they are capable of metabolizing sufficient moisture from the materials they ingest. For this reason, applications of pesticides for the control of these pests are usually preventative or eradicant treatments of actual infested material. These wood treatments generally parallel those for subterranean termites, and paragraphs (d)(1)(ii) and (d)(1)(iii) of this guideline address the data considerations,

testing procedures, and performance standards which are also applicable to compounds used against dampwood and drywood termites.