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Fact sheet

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Subterranean Termites

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The dominant termite species in New Jersey is the eastern subterranean termite, *Reticulitermes flavipes* Kolar. Subterranean termites are so-called because ordinarily they must have access to soil to obtain moisture. The natural home of this insect is woodland where it feeds on dead trees, stumps, and fallen branches. In wooded locations it is a simple matter for termites to pass from wood to soil and back again; the abundance of suitable wood determines the population of termites in an area. Termites can be expected any place in New Jersey that is not subject to prolonged flooding.

Indications of Termite Attack

The sudden appearance of a *swarm of winged termites* inside the house is the most common indication of a nearby colony. For positive identification, specimens may be mailed to an agricultural agent in the Rutgers Cooperative Extension office in your county. The address and telephone number appear under "County Government" in the directory. Winged termites drop their wings shortly after swarming. Termites that have dropped their wings can be distinguished from flying ants by the absence of a wasp waist and by their bead-like antennae or feelers. Winged termites may be killed with household insect spray. This treatment has no effect on the parent colony of termites that continues to feed unhindered in wood and live in soil adjacent to buildings.

Readily discernible differences between flying ants and flying termites are:

Points of difference	Flying ants	Flying termites
Size of wings.	Hindwings are much smaller than the forewings. Wings are not twice the body length.	Hindwings are approximately the same size as the forewings and about twice the length of the body.
Kind of wing veins.	Few, conspicuous dark veins.	Many very fine inconspicuous veins of the same color as the wings.
Shape of body.	Wasplike, the abdomen is separated from the rest of the body by a thin stem.	Not wasplike, the abdomen is joined snugly to the body, without a stem.
Size.	Variable; from one-eight to three-quarters of an inch in length.	Three-eights of an inch in length.

Both ants and termites may exist in the same building, and each group may produce a swarm at various times during the year. Therefore, examine each swarm closely to determine if termites or winged ants are present.

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A second indication of termites is *damage to wood*. The distinctive feature is that termites actually consume wood as food, leaving no residue other than excreta spots. In sheathing and trim, termites often remove so much of the wood that only a thin shell remains. The wood may appear perfectly sound, but damage will become apparent when trying to paint or drive a nail into it. Careful examination of the various points of termite entry enables a householder to decide whether these insects are still present.

Another indication of termite infestation is the *presence of mud in the wood*. Termites use mud to seal openings in the wood caused by cracks in weakened timbers. They also build mud-like shelter tubes on foundation walls and piers. Destroying such tubes does not necessarily prevent termites from entering a building. Tubes are usually built in an effort to find a "shortcut" to the soil after infestation is established.

Preventing Termite Attack

The necessity of passing from soil to wood, and back again, decides where termites can successfully attack a building. This is determined by the kind of construction, and is therefore more important than the exact location of the building. Termite damage has been intensifying because of an increase in the type of building construction that is susceptible to termite attack. At the same time, large areas of woodland (the termite's natural home) are being used for residential development. These two circumstances, rather than any "spread" of termites, have led to an increase in termite damage. If preventive measures are taken to avoid the factors in building construction that encourage termite attack, houses can be erected with reasonable safety, even in woodlands that often provide some of the most valuable and delightful suburbs.

These construction factors make a building susceptible to attack:

Presence of wood in soil near a house. All stumps, branches, and other wood debris should be removed from the site prior to construction. This helps to destroy colonies already established at the building site.

Wood buried in the fill around foundation walls. Avoid burying scrap lumber and form boards, inside as well as out. Never leave scrap lumber under buildings or porches.

Excessive soil moisture. Keep the outside soil level at least 6 inches below all woodwork, and provide for adequate removal of rainwater. Drainage tile properly installed around the outside of foundation footings is also an advantage. Leaky, defective plumbing sometimes contributes to termite infestation.

Easily penetrated foundations. Walls constructed of stone, hollow concrete block, hollow tile, or brick often develop cracks used by termites.

Insufficient clearance between floor joists and soil under an unexcavated part. A minimum space of 18 inches should be observed at all points. Never allow wood to remain in these areas. Provide ample cross-ventilation.

Earth-filled or masonry porches and steps; flagged terraces on the same level as first-floor sills. Earth-filled porches and retaining walls of concrete or hollow block are first built and the enclosed space is then filled with soil, brickbats, and other debris (hence, "earth-filled"). Concrete is then poured over the fill and retaining walls to form a solid surface. The lowest board will be completely covered in this process, and invading termites will be able to go directly from the fill into the sill immediately behind the clapboard.

Wooden porches or steps. The bottom step should rest on a poured concrete base projecting at least 6 inches above soil. Porch supports should rest on similar bases. Latticework under the porch should not contact soil.

Cellar or basement windows. Brick houses have been infested where the sole point of entry was wooden cellar window frames. Use either steel or factory-treated wood frames and make

sure the soil level is at least 6 inches below the lowest wood member. Provide adequate drainage for window wells and keep them clear of leaves and trash.

Door frames. Doors leading to cellars from outside stairways and garage door frames (in houses with attached garages) are frequent sources of termite attack. Do not extend frames into or through concrete, and use factory-treated wood in all construction that touches the floor.

Wood construction in basement or cellar. Use of wood in finishing basement areas usually creates conditions that are highly favorable to termites—simply the proximity of masonry and wood. Wooden floors are particularly subject to attack, so noncellulose tile or other flooring material is preferable. In constructing sidewalls, all furring strips, door frames, partition studs, and similar members should be constructed from factory-treated lumber. No wood of any kind should extend through the basement or cellar floor.

Slab construction homes. Modern slab construction homes with wood partition walls are subject to attack as a result of termite penetration through holes in the slab through expansion joints.

Termite Shields

Metal sheets (properly joined, shaped, and placed between the top of the foundation and sills) have been generally advocated for termite protection. When correctly designed and installed, such shields give satisfactory protection, if other construction features of the building do not allow termites to enter. It is important, therefore, to understand the basic principle and limitations of the shield.

The so-called "bread-pan" shield is continuous across the entire top of the foundation wall and extends 2 inches beyond the edge. The individual sheets should be lock-jointed or soldered at joints, and the projecting flanges should be shaped and soldered at the foundation wall corners. Coal-tar pitch or plastic cement should be used at holes in the shield around anchor rods. If parts of the foundation wall are at different elevations above the soil, install vertical sections joining the various levels of shielding.

The principle of a shield has often been misunderstood, at least regarding its function in cold climates. Its purpose is to force termites to come to the surface of the foundation wall. While they may construct shelter tubes over such walls as a secondary passage, after reaching wood by some hidden route, they will not use such an exposed route as their primary passage to food. The outer surface of a foundation wall, subject to winter's cold, is particularly unsuitable for passage. The shield projecting from the inner surface of the foundation may be spanned by shelter tubes if ventilation is adequate in the area enclosed by the foundation. It is imperative, therefore, to provide ample ventilation, particularly in unexcavated areas.

"Bread-pan" type shields are valuable chiefly on foundation walls of concrete block, brick, or other unit masonry. Shields are virtually useless if improperly or incompletely installed, or if improperly maintained following construction. A typical example of incomplete installation is the failure to provide shielding at filled porches, terraces, or steps—places most likely to be used by termites as entrance points. Maintenance failures often result from later filling operations that deposit soil against and above the shield.

Earth-filled porches or terraces, or terraces adjoining houses in which the first-floor is near soil level, may be insulated from the house with a special shield. This shield should completely cover the top of the foundation. It is particularly important that shielding be installed at earth-filled porches and terraces, even if not used elsewhere in construction.

Shields should be constructed of heavy metal, preferably copper of "cornice-temper" hardness and not lighter than 16 ounces per square foot. If other metals (such as aluminum) are used, 26-gauge or heavier is required.

Preconstruction Treatment With Termiticides

Contact a Pest Control Operator (PCO) to obtain satisfactory preconstruction termiticide treatment.

Termiticides properly applied to soil can prevent structural damage by subterranean termites for many years. Chemical soil treatment before and during construction is usually more effective and much less expensive than treatment of existing structures. A more complete protective barrier can be accomplished without drilling injection holes or other disruptive work required for postconstruction treatment. Unfortunately, many municipalities do not require pretreatment in building codes or do not enforce compliance. When building a home, insist that the contractor or architect specify pretreatment by a certified PCO.

Postconstruction Treatment With Termiticides

A Pest Control Operator (PCO) is needed to obtain satisfactory postconstruction termiticide treatment.

The principle utilized for subterranean termite control in structures is to establish a chemical barrier in the soil extending from the grade to the top of the footing. Several different types of equipment, methods, and chemicals can be used to establish this barrier. Selection depends on the PCO's preference and previous experiences. There is, therefore, no standard postconstruction control method. However, all methods must conform to the principle of establishing a chemical barrier. Thus, the treatment price will vary from one PCO to another.

Some common soil termiticides are: cypermethrin (Demon TC, Prevail FT), fenvalerate (Tribute), permethrin (Dragnet FT, Torpedo), bifenthrin (Biflex TC, Talstar), tralomethrin (SAGAWP), fipronil (Termidor 80WG), cyfluthrin (Tempo 2), imidacloprid (Premise 2).

Above-ground structural insecticides include bendicarb (Ficam W) or Disodium Octaborate Tetrahydrate.

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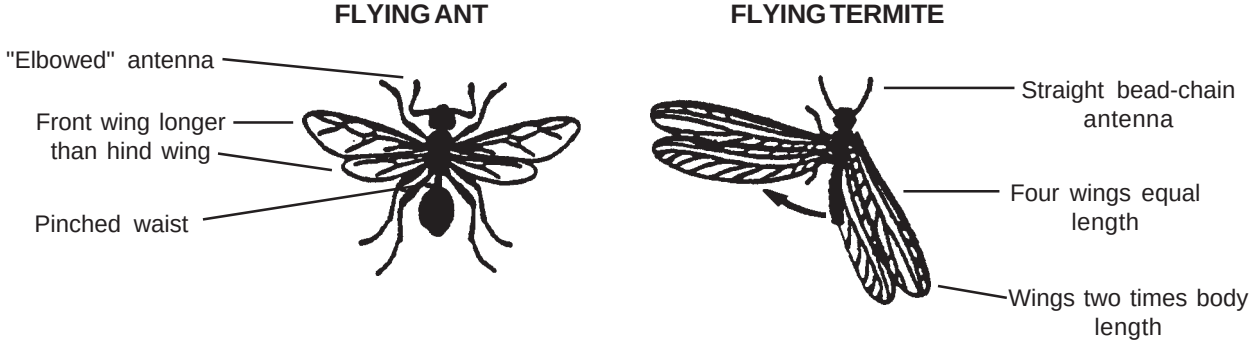

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