



The Impact of Termites on Commercial Facilities

PREPARED BY HOLDER'S PEST SOLUTIONS, JULY 2017

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Unlike cockroaches, rodents, birds and stored product pests, termites do not pose a threat to our nation's food supply. However, these destructive insects can pose a threat to the facilities that process, store and transport food products, and other commercial goods and services.

These stealthy pests can cause significant structural damage - \$5 billion annually in the United States - to commercial facilities and cost companies thousands of unbudgeted dollars in remedial treatments and repairs. These costs do not include potential lost revenue from having to shut down portions of a facility to perform treatment or make repairs.

Protecting your facility from termites is not the easiest task as termites are an aggressive, relentless pest that feeds around-the-clock but often goes undetected since they often enter through the soil beneath a structure. The type of construction - floating, supported, monolithic slab - on which a structure is built, will dictate the type of treatment needed to eliminate termites.

"Most commercial facilities are several large pours of cement with expansion joints that can serve as an entry points for termites," says Jeff Keller, A.C.E. and regional manager for Holder's Pest Solutions. "What usually happens is that the termiticide pre-treatment barrier is broken or disturb before the slab is poured and this leaves areas, like the structure vulnerable to termites."

In addition to attacking and threatening the structural integrity of the wood beams, supports, floor and ceiling joists, decking, shipping pallets - termites will destroy any high cellulose content items including cardboard boxes, paper and paperboard packaging, and in the process threaten its contents.

Keller says the three primary termites that threaten commercial facilities in Texas - the Eastern subterranean, Formosan and drywood termite - each present a different challenge for facility managers and pest management professionals treating the property. Subterranean and Formosan termites typically swarm after a spring rain followed by warm temperatures in February and March. Drywood termites - which can be deeply hidden in wood and go undetected for years - swarm in April and May.

"On large commercial properties there can be multiple termite colonies present," says Keller. "No facility is immune from the threat of subterranean termites."

Termite Prevention Tips for Commercial Facilities



There are steps facilities managers can take to prevent termites from taking aim at their facility and as the saying goes, "an ounce of prevention is worth a pound of cure."

- Maintain a 12-inch vertical barrier of smooth concrete, sand, or other non-cellulose material between the soil surface and substructure wood crawl spaces.
- Identify and correct conditions that are conducive to attracting termites.



- Use synthetic wood and non-cellulose building materials for fences, decks or other structures that come into contact with soil.
- Remove wood piles, untreated fence posts, tree stumps and buried scrap wood near structures.
- Keep wood pallets off the ground to prevent wood to soil contact.
- Keep storage and crawlspace areas well ventilated and dry - excess moisture attracts termites.
- Repair foundation cracks and seal openings on exterior walls and soffits to deny termites' easy access.
- Keep gutters and downspouts clear so moisture does not build up.
- Keep landscape shrubs trimmed and not touching the structure.

Termite management requires a proactive approach and that means scheduling an annual termite inspection of your facility.

Having your facility – whether it is a high-rise apartment building or food distribution warehouse - inspected annually for termites and other wood destroying pests by a trained professional who knows where to look and what to look for is the peace of mind you and your budget deserve.

Holder's Pest Solutions' termite inspectors will review construction plans for your facility and focus on the most vulnerable areas of a structure, and can recognize signs of termites even when they are not apparent to the naked eye.



With 40 percent of subterranean termite infestations originating at utility entrances through slabs, and settlement and expansion cracks in the slab, our inspectors will start at the foundation and work their way up examining every crack, crevice and potential termite entry point in your facility.

If our inspectors identify the presence of termites or wood destroying pests and organisms in your home they will first determine the source of the infestation and then provide you with treatment recommendations. They will also make recommendations for any necessary repair work for damage as a result of the infestation.

The Holder's "EIR" Termite Advantage

- **Experience.** Years of experience inspecting and treating commercial structures for termites – we know how commercial facilities work and will get our job done with minimal disruption to our clients.
- **Innovation.** Using the latest, most progressive and innovative termite management technology and treatment techniques.
- **Reliability.** Holder's highly-trained and experienced technicians and inspectors know termites and how to eliminate them.

What you need to know about termites in Texas

Termites work 24/365 to consume and damage the wood supports, flooring, doors, cabinets, shipping pallets, and wood siding of businesses, warehouses and other commercial structures. There are no real days off for a termite and that can mean trouble for your business.

And even though termites are a "stealthy" pest that can go undetected for years, there are several visible signs property or facility managers may notice that announces their presence.

Subterranean termite swarmers emerge from mud tubes built by other members of the colony in search of mates and new locations for their destructive colonies. Termite swarmers are most often seen on warm days following a rainfall and can be confused with other flying insects.

Swarmer termites are attracted to light and often are seen congregating near the exterior lights or window sills of a structure. Knowing what is and isn't a termite swarmer is a job best left to a professional, like the experts at Holder's Pest Solutions, because a wrong diagnosis can be costly.

Subterranean Termites

Subterranean termites are found in many areas of Texas where moist soil is present. However, the presence of termites is often not readily noticed because their activity is hidden behind wallboards, siding, decking or wood trim.

Subterranean termites are attracted to certain odors of wood-decaying fungi that make the wood more palatable and easier to penetrate. Moisture is important to subterranean termites as they have very little resistance to dehydration.

To survive, termites must maintain contact with the soil (their primary moisture source) or other above-ground moisture sources, such as defective plumbing, leaky roofs, leaks from air conditioning condensers or poorly maintained gutters.

Dead trees and brush provide a natural food source for foraging subterranean termites. When natural vegetation is cleared and new construction takes place, termites often switch to feeding on wooden structures.

Termites enter structures through wood that is in direct contact with the soil and by building shelter tubes over or through cracks in foundations. Any cellulose material in direct contact with the soil, such as trees, vines or plumbing fixtures, can serve as an avenue of infestation.

Formosan Termites

Formosan termites are considered one of the most aggressive and economically devastating termite species in the country. The first infestations of Formosan termites in Texas were discovered in 1956 around the Houston Ship Channel in Harris County. Since then they have been detected in 31 counties across the state and there have been reports of Formosan termite infestations in all the major metropolitan areas in Texas.

Termite Facts and Figures

- The three most commonly encountered termite species in Texas are the Eastern subterranean termite, Formosan termite and drywood termite.
- Termites are known as "silent destroyers" because of their ability to chew through wood, flooring and even wallpaper undetected.
- Subterranean termites are by far the most destructive species of termite as they eat 24 hours a day, seven days a week.
- Termite colonies can have upwards of 2 million members.
- Termites are present in 70 percent of countries across the world and their population outnumbers human beings on a ratio of ten to one.
- The queen termite can lay up to 40,000 eggs per day.
- Research from the National Pest Management Association, places the annual bill for termite damage in the United States at more than \$5 billion..



Like other subterranean termites, Formosan termites feed on materials that contain cellulose, but because of their larger colony size, they attack a greater variety of wood at a faster rate than do native subterranean termites. They have an enormous reproductive capacity and a typical colony may exceed 1 million insects.

Although considered "subterranean" (i.e. hidden underground), Formosan termites regularly construct above ground nests within the structures that they infest. The possibility of both a subterranean nest close to the infested structure and an aerial within the structure can greatly increase the damage potential of these termites.

Although there is little chance of encountering Formosan termites outside the upper Gulf Coast region, property managers should watch for isolated infestations anywhere in Texas. The shoring timbers and recycled railroad ties that are often taken from docks and railways and used for the construction of terraces or planting beds around structures, and shipping pallets and crates, is believed to be the primary way Formosan termites have traveled inland.

Drywood Termites

There are three common species of drywood termites found in Texas with the Southeastern drywood termite being most common.

Unlike its subterranean brethren, the drywood termite lives above ground, finding all the moisture they need in the wood of a structure. Drywood termites will swarm by dozens and sometimes the hundreds around the exterior of a building looking for a suitable spot to make their entry and start devouring the wood members.

Protected joints or crevices in and around doors, window frames, eaves, attics, molding, wood siding, and where shingles and paper overhang wood meet are favorite locations for these wood-munching pests when they swarm. And once they find a location that suits them, they can often re-infest the exact same place unless steps are made to prevent them.

Drywood termites will gnaw a small tunnel into the wood, close it behind them, create a chamber and then hang out dormant for up to a year or more before deciding to break up the colony by swarming in much larger and more destructive numbers.

Knowing the Signs of a Termite Infestation

Active termite infestations can be difficult to detect. Although termite activity peaks in the spring and summer, they are active all year round. All they need to survive is moisture, wood and warmth.

One of the first signs that termites may be entering your facility, is small flying insects hovering near windows or doors and discarded wings. Termites swarm to find a new nesting location, so if you can catch termites at this stage, you can save yourself a lot of headaches and expense

Mud shelter tubes on crawl space piers, utility penetrations or on foundation walls and slabs are a sign of termite infestation. Subterranean termites need constant exposure to moisture, so as they begin tunneling from the earth to the source of wood in your facility, they will construct mud tubes around their paths to maintain security and moisture. Termite shelter tubes can blend in well with the soil or concrete, making them difficult to see.

Some of the other signs that may indicate termites would be finding damage they have already caused to your facility:

- **Floor Damage** – Flooring may blister or snag in areas. Checking underneath the flooring will help you determine if the changes are due to termite activity. Floors may also feel spongier and spring more than usual.
- **Ceiling & Wall Damage** – Cracks in your internal walls or on ceilings and cornices.
- **Foundation Damage** – Although termites do not eat concrete, they are able to squeeze through cracks to gain access to wooden floor joints.
- **Sticking Windows/Doors** – Doors may become difficult to open as termites habits make the door and window frames misshapen, thus causing difficulty opening and closing windows and doors.
- **Outdoor Wood Damage** – Decking and wooden fence posts are at great risk for termites. You may see the wood begin to decay or it may sound hollow when tapped.
- **Damaged Roof Tiles** – Excess moisture in your facility due to loose, broken, or damp roof tiles may attract termites and allow them further inside.
- **Damaged Wood** – Termite-damaged wood is not easy to identify and can be hidden under a simple coat of paint. Termites will feed underneath the surface of the wood, making them nearly invisible and as they eat through the wood they create hollow areas within the wood letting the damage go unseen. Wooden doors, furniture, cabinets, storage pallets, and structural support are all at risk.



Identifying Signs for Formosan Termites

Formosan termites cause the same type of damage as the other subterranean termites. However, they cause this damage more rapidly.

Formosan termites often form aerial nests made up of chewed wood, soil, saliva and fecal material. These nests can be as large as several cubic feet and found in both the soil and above ground level. They will not be discovered unless the wall coverings are removed. Subterranean nests are typically located away from structures and can be difficult to find.

They have been known to attack a variety of plant species including citrus, cherry laurel, sweet gum, cedar, willow, wax myrtle, Chinese elm and white oak. They have also been known to eat through non-cellulose material, such as thin sheets of soft metal (lead or copper), asphalt, plaster, creosote, rubber, and plastic, searching for food and moisture.

Identifying Signs for Drywood Termites

A telltale sign of a drywood termite infestation is the presence of winged termites swarming from small openings (kick holes) in the surface of wood. Drywood termites lose their wings quickly after swarming, but the wings are important for proper identification of drywood termites.

If swarmers are found inside a structure, then the colony is almost certainly in the structural timbers of the building. If termites are found outdoors, they may have come either from within the structure or from nearby timber or brush.

Drywood termite "swarmers" are attracted to light and can enter structures from the outside. The presence of termite bodies and wings in light fixtures and cobwebs and on window sills will be an indication.

Because drywood termites live within the wood, they produce fecal pellets. These pellets can be found in small piles near infested wood and are generally the color of the wood on which the termites feed.

In addition to structural lumber and wood siding, drywood termites can invade wooden furniture.

What Causes Termite Infestations

Why termites choose to infest your warehouse rather than the manufacturing plant down the street often comes down to conducive conditions found in and around your facility. Termites, like virtually all pests, are opportunists and will infest the structure that offers them the easiest path of resistance, and provides them with food, moisture and shelter.

In its years of inspecting and treating commercial structures for termites, Holder's Pest Solutions' has identified the root causes of termite infestations inside and outside of structure.

Structure Exterior

- Wood to earth contact
- Siding less than 6 inches above grade level
- Brick veneer construction
- Faulty grade / poor drainage conditions
- Clogged gutters
- Excessive moisture
- Ornamental woodwork in contact with structure (i.e. trellises, fences, wood decks, etc.)
- Stumps, woodpiles, piles of construction materials, etc. that are within 10 feet of structure
- Attached slabs
- Cracks in foundation walls
- Overhanging or attached foliage
- Sprinkling or watering system hitting or within 18 inches of structure
- Infestations in proximity of structure (trees, fences, walls, etc.)
- Form boards or grade stakes
- Cracks in wood siding (drywood termites)

Structure Interior

- Hollow block foundation
- Protrusions through slab
- Stress cracks in slab and foundation
- Debris left in bath traps
- Changes in grade
- Window frames below grade
- Imbedded posts or partition walls
- Furred walls / sealed ceilings
- Inaccessible areas / bath traps / pipe chases
- Cellulose debris on crawl space
- Inadequate clearance in crawl space or attic
- Inadequate ventilation in crawl space or attic
- Moisture condition

Construction Type

- Standard slab on grade
- Post tensioned slab
- Monolithic slab
- Crawl space with piers and beams
- Manufactured home
- Basement
- Combination