



Preconstruction Termiticide Barriers¹

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Florida has the highest incidence of subterranean termites in the continental United States. All new construction sites must be treated with termiticides to prevent termite attack and damage. The best time to treat for termites is before construction of ground level flooring so that proper amounts of termiticide are applied to soil in contact with construction elements. Once the structure is in place, it is much more difficult to insure that the chemical is actually applied uniformly. New structures usually experience problems with invasion of subterranean termites within three years of construction due to lack of adequate termiticide treatment or disruption of termiticide barriers. The objective of preconstruction treatment is to place a uniform application of termiticide to all areas underneath and around the slab and foundation. A proper termiticide treatment for preconstruction situations involves two types of treatment vertical and horizontal barriers.

Vertical Barriers

Critical areas of structures are treated by the application of vertical barriers. A critical area is soil under or next to an element of construction that would allow termites access into the structure. Critical areas are under expansion joints of concrete slabs, near

plumbing or utility entrances through the slab, and around the interior and exterior perimeter of the foundation.

Vertical barriers are applied by rodding or trenching around the base of foundations, plumbing, utility entrances, expansion joints, and where two slabs will join. They are created by applying 4 gallons of termiticide per 10 linear feet. If areas to be treated are more than one foot deep, then each foot of depth should receive 4 gallons per 10 linear feet. Treatment of trenches involves digging a trench, no wider than 6 inches, applying termiticide to the trench, and mixing with soil as the soil is replaced. Hollow block voids of foundations should also be treated with 4 gallons of termiticide per 10 linear feet.

The most common omission of critical area treatment by the pest control industry usually involves the lack of treatment of backfill at the end of construction. Termite treatment is usually accomplished before the slab is poured; however, pest control companies should also return to the site after form boards have been removed and the area is backfilled. Unless this is done, the perimeter areas of structures will not have an adequate vertical barrier.

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Horizontal Barriers

Horizontal barriers are formed by treatment of the soil surface under a concrete slab. Unless areas underneath the slab are treated with termiticide, termites can construct tunnels from untreated soil to the under side of the slab. These tunnels allow termite access to the structure by avoiding treated soil in critical areas that has settled under the slab. Also, structural cracking often occurs at areas that are not considered critical areas, and termites can enter the structure through these cracks.

Horizontal barriers are made by applying one gallon of termiticide per 10 square feet. The treatment is usually accomplished by applying a coarse spray at low pressure. About of the total volume of termiticide applied during preconstruction treatment to a structure should be applied to the horizontal barrier. All termite treatments to slab construction should include horizontal barriers, which are relatively easy to apply.

The most common omission of preconstruction termite treatment by the pest control industry is not treating to form a horizontal barrier. Horizontal barriers are essential for a complete termite treatment. Many companies consider the horizontal barrier a waste of time and chemicals, but horizontal barriers are required by FHA and VA minimum property standards to protect structures from termites.

Application Volume

As of January 1, 1991 Florida Department of Agriculture rules require that termiticides applied preconstruction shall "be applied in specific amounts, concentration, and treatment areas designated by the label." This regulation was intended to insure that preconstruction treatments were done properly. At the time the regulation was drafted, all labels specified the volumes listed above for vertical and horizontal barrier treatment. During the past few years, several termiticide labels have been modified to allow variable volumes for pretreatment horizontal barriers; this allows the application of higher volumes of lower concentration dilutions or lower volumes of higher concentration dilutions. In all cases, the labels specify that sufficient water be used to accurately and uniformly cover the area being treated.

Volume is important to allow uniform treatment of areas under a slab. Generally, the more volume the more uniform the coverage. Also, the lower the volume the greater the likelihood of not completely spreading the active ingredient to all areas under the slab. Most problems with subterranean termite control are a result of inadequate distribution of termiticide in the soil. Although the correct amount of active ingredient may have been applied, some areas may receive more toxicant than is needed and others may have less than enough to protect the structure. Reducing volume also reduces penetration of chemical into the soil. Adequate soil penetration is particularly important for horizontal barriers, which are frequently disturbed by foot traffic, addition of rebar and other construction activities following application.

Generally, clay soils require lower volume of termiticide than loam or sandy soils for complete and uniform coverage. In fact, supplemental labeling for Pryfon 6 in Mississippi specifies that gallon of termiticide per 10 square feet be applied to clay soil; 1 gallon, to loam soil; or 3 gallons to sand/gravel. Obviously, in Florida with our typically sandy soils, most companies should be applying 1 to 3 gallons of termiticide per 10 square feet.

Thorough and complete treatment of soil with termiticide has the potential of protecting houses from termite attack for at least 5 years. Inadequate distribution of chemical, improper volumes of termiticide application or insufficient treatment of critical and non-critical areas are major causes for termiticide failure.

Table 1. Pesticides Available

Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Biflex TC (Emulsifiable concentrate)		Bifenthrin - 25.1%		
Horizontal Soil Treatment	Subterranean termites, Formosan	Do not contact until dry	None	None
The diluted emulsion must be adequately dispersed in the soil to establish a barrier between the wood and the termites in the soil. To provide the greatest protection against termite reinfestation, it is important to apply as close to labelled volume of the finished emulsion as is practicable. Apply at a rate of 1 gallon per 10 sq feet using coarse spray nozzle.				
Vertical Soil Treatment	Subterranean termites, Formosan	Do not contact until dry	None	None
The diluted emulsion must be adequately dispersed in the soil to establish a barrier between the wood and the termites in the soil. To provide the greatest protection against termite reinfestation, it is important to apply as close to labelled volume of the finished emulsion as is practicable. Apply 4 gallons per 10 linear feet of trench per foot of depth. Hollow block voids may be treated at a rate of 2 gallons of emulsion per 10 linear feet so that the emulsion will reach the top of the footing.				
Demon TC (Emulsifiable concentrate)		Cypermethrin - 25.3%		
Horizontal Soil Treatment, Vertical Soil Treatment	Subterranean termites, Formosan	None	None	None
Dragnet FT (Emulsifiable concentrate)		Permethrin - 36.8%		
Horizontal Soil Treatment	Subterranean termites, Formosan	None	None	None
This product prevents and controls termite infestations in and around structures and constructions. Create a horizontal barrier wherever treated soil will be covered. Apply 1 gallon of dilute product per 10 sq feet.				
Vertical Soil Treatment	Subterranean termites, Formosan	Do not contact until dry	None	None
This product prevents and controls termite infestations in and around structures and constructions. Vertical barriers should be established in areas such as around the base of foundations, plumbing, utility entrances, back-filled soil against foundation, and other critical areas. Apply 4 gallons of dilution per 10 linear feet per foot of depth.				
Prelude (Emulsifiable concentrate)		Permethrin - 25.6%		
Horizontal Soil Treatment	Subterranean termites, Formosan	None	None	None
Do not treat soil beneath structures that contain wells or cisterns. Care must be taken to avoid runoff. Do not treat soil that is water-saturated or frozen. Do not treat while precipitation is occurring. Apply at a rate of 1 gallon per 10 sq ft.				
Vertical Soil Treatment	Subterranean termites, Formosan	None	None	None
Do not treat soil beneath structures that contain wells or cisterns. Care must be taken to avoid runoff. Do not treat soil that is water-saturated or frozen. Do not treat while precipitation is occurring. Apply at a rate of 4 gallons per 10 linear feet per foot of depth to the top of the footing (not to exceed 4 feet of depth).				
SO-CHLOR SG (Emulsifiable concentrate)		Sodium Chloride - 100%		
Horizontal Soil Treatment	Subterranean termites	Do not contact until dry	None	None
May be used in crawl spaces under buildings that do not use the air space for plenum heating. Thoroughly flush spray equipment with clear water after treatment.				

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Trade Name (Formulation)		Common Name - %		
Site(s)	Pest(s)	Re-Entry Time	Preharvest Time	Retreatment Interval
Vertical Soil Treatment	Subterranean termites	Do not contact until dry	None	None
When drilling through concrete slab construction, position injection holes no more than eighteen inches apart. Whenever drilling in concrete slabs follow good industry practices to avoid drilling into pipes, ducts and other sensitive components.				