

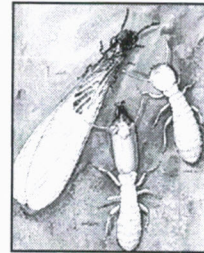
# FLORIDA BUILDING CODE



## 2010 Termite *Advanced Code,* Soil and Foundation Protection

### Termite Basics

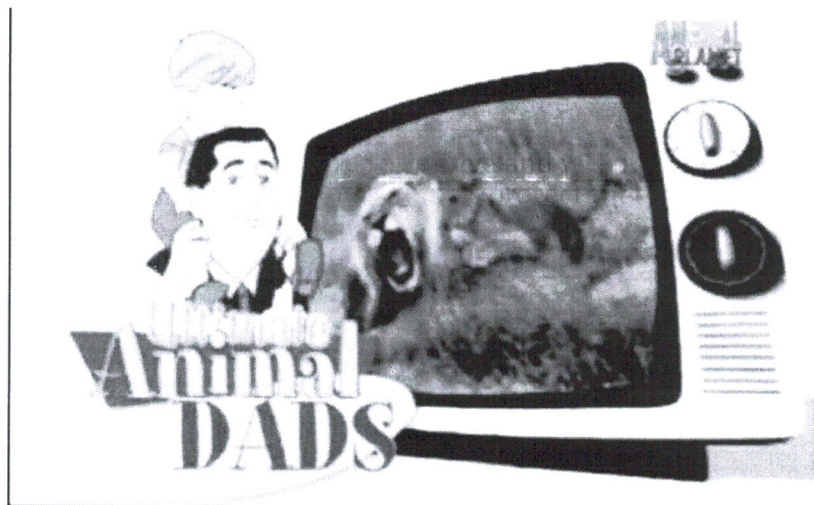
- **Drywood Termite**
- **Dampwood** termites typically do not infest building structures,
- **Subterranean Termites**
  - cause about 95% of the termite-related damage found in the United States.
  - **Eastern subterranean**
    - Shelter tubes
  - **Formosan**
    - Shelter tubes
  - **Nasutitermes Corniger**
    - Tree termite, tunnel up walls, Shelter tubes



## Interesting Termite Facts:

- **Termites can not digest the wood directly.** The protozoans that live in their guts break down the cellulose into simpler compounds for the termites to absorb.
- Termites only need a **crack of one-sixty-fourth inch** in the slab floor to gain entrance into your home.
- Termites once they discover a food source, they leave a "**chemical trail**" for others to follow.
- **Termites work 24 hours a day.** "Worker" termites bring food to the colony through tunnels, without ever resting.
- **Termites need moisture to survive** and will die if exposed to sunlight or open air. Their tunnels protect them from the elements.

## Termite Dad





## Drywood Termites

### Drywood termites:

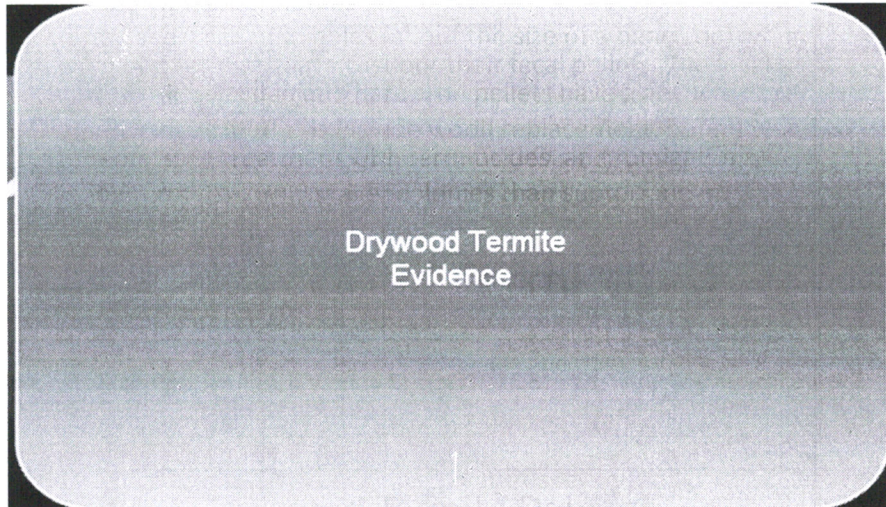
- galleries (damage) in which these termites travel are smooth and without mud. **(No mud tubes)**
- can cause significant damage to structures, even though colonies develop slowly, because they can go unnoticed over time.
- most commonly infest dry, sound wood and are more commonly associated with older homes

You often see “kick-out” holes (about the size of a pencil tip) where the drywood termites have cast out their fecal pellets. The fecal pellets that are small, six-sided and hard. The pellets have a gritty texture.

Common control methods include wood replacement, borate wood treatments, spot treatment with termiticides, and fumigation

Drywood termites form smaller colonies than subterranean.

### Drywood Termite Damage: sawdust like waste, no shelter tubes







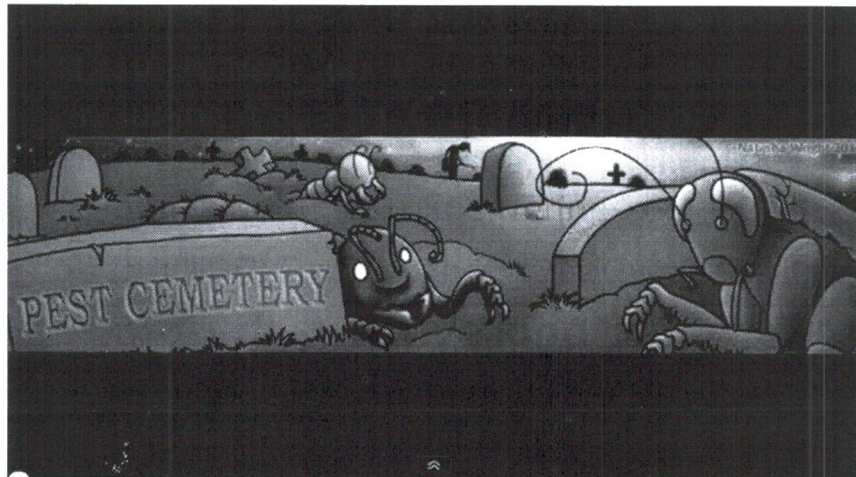
## Formosan termite largest and most destructive kind of termite



Formosan termite **colonies** can be up to 300 feet long and there can be tens of thousands of termites in a single colony.. They are the largest and **most destructive kind of termite**.

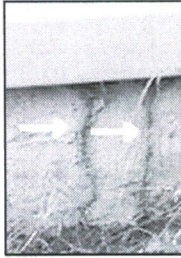
- They are now found in at least 11 states, including Alabama, California, Florida, Georgia, Hawaii, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Texas.

## Formosan Termites





## Eastern Subterranean



- Subterranean Termite **colonies** are smaller than Formosan.

- **DIET**

- Termites eat wood, wallpaper, plastics and fabric made from plants.

- **HABITAT**

- Subterranean termites need contact with the soil to survive.
- They live in underground colonies or in wet areas aboveground.
- They build tunnels to reach food and every spring, groups of reproductive termites fly off to start new colonies.



## Tree Termites

New Termite  
In South Florida  
*Nasutitermes*  
*Corniger*

## Termite-detering Construction Practices

These can be divided into three general categories:

- **1816** Stop Termites before they enter .
- 2304.11 Use Termite Building Code: General Construction Requirements
- 1503 Construct the house in a manner that will avoid moisture problems in, around, or under, the finished building.

## Termite Protection Section 1816.1 Chapter 18 Soils and Foundations

- 1816.1 Termite protection shall be provided by registered termiticides,
- **202 Definition: REGISTERED TERMITICIDE.** listed as registered for use as a preventative treatment for termites for new construction by the Florida Department of Agriculture and Consumer Services under authority of Chapter 487, *Florida Statutes*.
- (for a list of Registered Termiticides)  
<http://www.freshfromflorida.com/content/download/3134/19725/TermiticidesRegisteredInFlorida.pdf>)

## Termite Protection Section 1816.1 Chapter 18 Soils and Foundations

- 1816.1 Upon completion of the application of the termite protective treatment, **a certificate of compliance shall be issued to the building department by the licensed pest control company** that contains the following statement:
  - "The building has received a complete treatment for the prevention of subterranean termites. Treatment is in accordance with rules and laws established by the Florida Department of Agriculture and Consumer Services."

- **105 PERMITS**

105.10 Certificate of Protective Treatment for prevention of termites

FBC: A weather resistant job site posting board shall be provided to receive duplicate treatment certificates:  
one copy for permit holder  
one copy for building department

### Treatment Certificate

- Product used
- Identity of applicator
- Time & date of treatment
- Site location and area
- Chemical used
- % concentration and gallons used



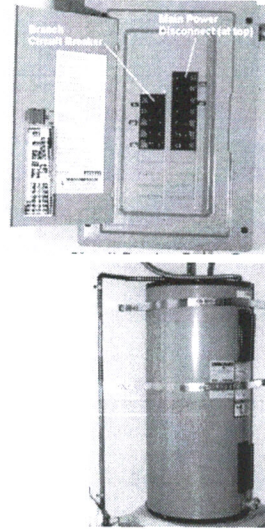
If soil chemical barrier is used, final exterior treatment shall be completed prior to final building approval



## **105.11 Post a permanent “Notice of Termite Protection”**

**Post near water heater  
Or electric panel**

- Termite treatment provider
- Need for re-inspection
- Contract renewal date



## **Termite Protection** Section 1816.1

**Chapter 18 Soils and Foundations**

### **SECTION 1816.1 TERMITE PROTECTION**

- Termite protection shall be provided by registered termiticides, including:
  - Soil applied pesticides
    - Repellents (do not Kill) or
    - Non Repellents (Kills)
  - Baiting systems
    - The consist of cellulose food, combined with a slow-acting substance lethal to termites.
  - Pesticides applied to wood (ex. Borate)
  - Other approved methods



## Soil applied Pesticide

Chapter 18 Soils and Foundations

- **1816.1.1** The initial chemical soil treatment inside the foundation perimeter is done after excavation, backfilling, and compaction is complete.

### Repellent vs Non Repellent Soil Treatment

- **Repellent products** do not attract termites, but instead make an area unappealing to termites. Termites who come into contact with repellents are repelled. (Repellent TERMITICIDES are less expensive)
- **Non-repellent products (are more effective)** not easily detected by termites, so the insects do not know to avoid the treated area. Forager termites are the first to confront these non-repellent products, which are then shared with the rest of the colony during feeding and grooming – effectively killing the colony.

Newer non-repellent materials, such as

Premise® (imidacloprid),

Termidor® (fipronil),

Phantom® (chlorfenapyr),

Bora Care® (Sodium Borate),

## Non Repellants

**Imidichloprid** is the most widely used insecticide in the world. An interesting attribute is that it causes termites to stop feeding and to stop socializing. After exposure to even small amounts they wander around in a state of confusion until they eventually die. When large amounts of termites die in the same place, this causes a natural repellency for other termites to leave the area. It is generally regarded as safe when properly applied.

**Fipronyl, Fipronil** is a broad spectrum insecticide that disrupts the insect central nervous system. by blocking the passage of chloride ions through the GABA receptor and glutamate-gated chloride (GluCl) channels, components of the central nervous system. This causes hyperexcitation of contaminated insects' nerves and muscles. Specificity of fipronil on insects may come from a better efficacy on GABA receptor, but also because GluCl channels do not exist in mammals is generally regarded as safe when properly applied. **Fipronil** is the main ingredient in Frontline for fleas

**Chlofenapyr** - Very popular non-repellent termite insecticide. It is generally regarded as safe when properly applied.

**Sodium Borate**, ex **Bora Care** - - is not a soil treatment, but is a wood treatment. It is a form of boric acid, and will last the life of the wood when applied. Very safe when properly applied.

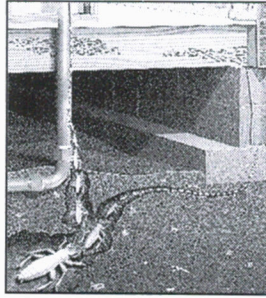
## Soil applied Pesticide



Chapter 18 Soils and Foundations

### Stop Termites Before They Can Get In

- **1816.1.2**, If the soil area is disturbed after initial treatment , then retreat, including spaces boxed or formed.
- **1816.1.3**, If the space in concrete floors is boxed out or formed for the subsequent installation of plumbing traps, drains or any other purpose, then use plastic or metal permanently placed forms of sufficient depth to eliminate any planned soil disturbance after initial chemical soil treatment.



## Soil applied Pesticide

### Chapter 18 Soils and Foundations

- **1816.1.4** Soil treatment shall be protected with a minimum 6 mil vapor retarder to protect against rainfall dilution. If rainfall occurs before vapor retarder placement, retreatment is required.
- avoid penetrating or disturbing treated soil





## Chapter 18 Soils and Foundations continued

- **1816.1.5 Remove** concrete over pour or mortar accumulated along the exterior foundation perimeter, (for better penetration) before exterior chemical soil treatment
- **1816.1.6** Chemical soil treatments shall also be applied under all exterior concrete or grade within 1 foot (305 mm) of the primary structure sidewalls.
- Also, a vertical chemical barrier shall be applied promptly after construction is completed, including initial landscaping and irrigation/sprinkler installation. Any soil disturbed after the chemical vertical barrier is applied shall be promptly retreated.



### Sleeves FBC 1816.2

Penetration-- If soil treatment is used protective sleeves around metallic piping penetrating concrete slab-on-grade floors:

- Must not be made of cellulose containing materials.
- The sleeve shall have a nominal thickness of 0.010 inch and sized for the pipe.
- The sleeve is sealed within the slab using a noncorrosive clamping device to eliminate the annular space between the pipe and pipe sleeve.

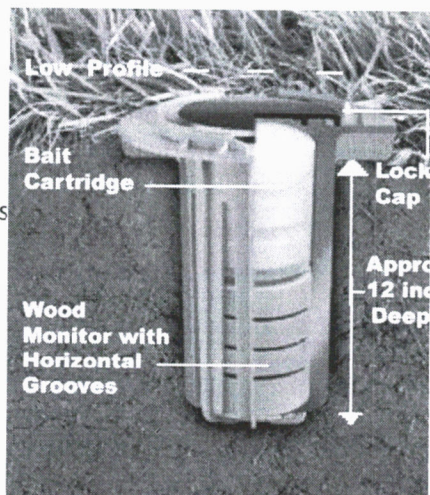
Signed  
5 year  
Contract

## 1816.1.7 Bait System

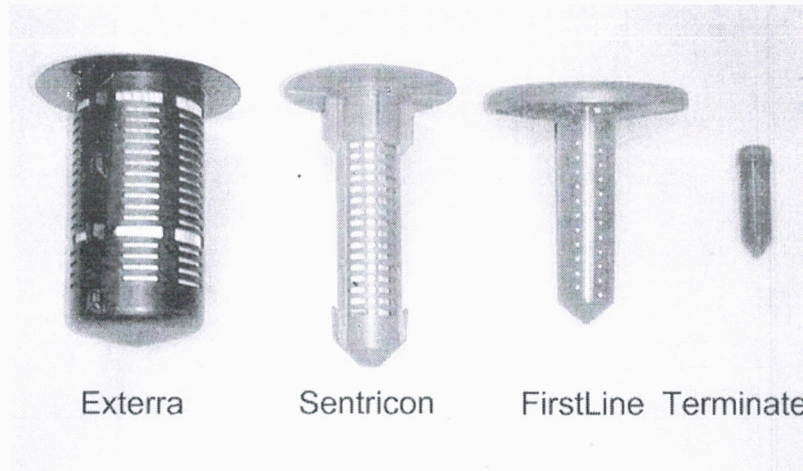
- If a registered termiticide formulated and registered as a **bait system** is used for subterranean termite prevention, Sections 1816.1.1 through 1816.1.6 (soil treatment) do not apply:
- however, a **signed contract assuring installation, maintenance, and monitoring of the baiting system for a minimum of five years from the issue of the certificate of occupancy shall be provided to the building official** prior to the pouring of the slab, and the system must be installed prior to the final building approval. If the baiting system directions for use require a monitoring phase prior to installation of the pesticide active ingredient, the installation of the monitoring phase components shall be deemed to constitute installation of the system.

## 1816.1.7 Baiting Systems

- Advantage
  - Small amount of toxin
  - Does not get into soil or water
  - No odor
  - No large holes drilled through walls
  - No chemicals left in soil after treatment is finished
- Disadvantage
  - Must be monitored
  - The termite must find bait ,
  - Hit or miss



## 1816.1.7 Baiting Systems Examples



Exterra

Sentricon

FirstLine Terminate

## 1816.1.8 Wood Treatment

- If a registered termiticide formulated and registered as a wood treatment (like Bora-Care) is used for subterranean termite prevention, Sections (on soil treatment) 1816.1.1 through 1816.1.6 do not apply. Application of the wood treatment termiticide shall be as required by label directions for use, and must be completed prior to final building approval.



## 1816.1.8 Wood Treatment example

### Treat the Wood, Not the Soil **Bora-Care**

- FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES DIVISION OF AGRICULTURAL ENVIRONMENTAL SERVICES , BUREAU OF PESTICIDES

- **Label Directions**

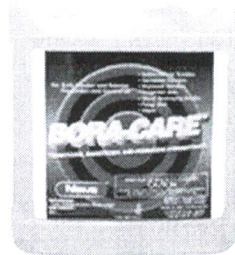
Bora-Care is wood applied for use as a **stand-alone preventive treatment** of new construction for protection against subterranean termite infestation/damage to structural wood.

**The label recommends** a 1:1 dilution of Bora-Care be applied to the point of wetness during construction where the greatest access to all wood members is available. This refers to the point where structural wood and sheathing has been installed, but prior to installation of insulation, electrical wiring and mechanical systems.

Bora-Care should be **applied in a 24-inch, uninterrupted band both** horizontally and vertically to all structural wood, including sills, plates, floor joists, piers, girders, subfloors and all structural wood above foundation walls and piers.

**Following the most recently registered label, which was approved in the State of Florida, Bora-Care must also be applied to plumbing penetrations, bath traps, slabs and foundation walls of crawlspaces and basements to create a continuous vertical and horizontal barrier.**

## Wood Treatment 1816.1.8



**Bora-Care**  
The Natural Product

## 1816.1 Termite Protection: Code Quiz

- New Construction requires all of the following methods as a preventative for termites. Soil and wood applied pesticides, and baiting systems and other approved methods.
- True
- False

## 1816.1 Termite Protection: Code Quiz

- Termite pre-construction treatment can be done by: either the contractor or licensed pest control company.
- True
- False

## 1816.1 Answers

- **False** 1816.1 Termite protection shall be provided by registered termiticides, with one of the following: **soil-applied** pesticides or **baiting systems** or **pesticides applied to wood**, or **other approved methods of termite protection labeled for use as a preventative treatment** to new construction.
- **False** 1816.1 Upon completion of the application of the termite protective treatment, a certificate of compliance shall be issued to the building department by the **licensed pest control company**

Preventing A Problem Is Easier Than  
Fixing It!

