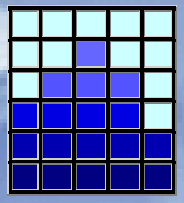
Advanced Florida Building Code: Site Requirements



Developed by

BCIC LLC

Building Codes in Construction

Welcome

- Course title:
- Course DBPR approval number:
- # of hours: 2 hours Advanced credit
- Course Instructor:

- Turn cell phones off or to silent

Course content

- Site design and code requirements
  - Accessibility as it pertains to site design
    - FBC Chapter 11
  - Termites
    - FBC Chapters 1, 18, 21, and 23

Learning Objectives

At the end of the course, you will understand

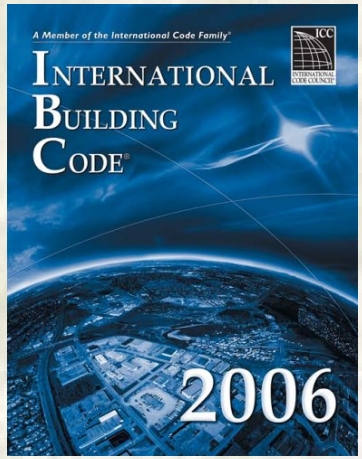
- accessible site requirements
- accessible routes
- accessible parking
- accessible curb ramps
- accessible ramps
- termite protection of soil
- termite protection of wood
- inspection requirements for termites

History of the Florida Building Code

- Hurricane Andrew
  - Wake up call
- Florida Building Codes Study Commission
- HB 4181 established
  - A single statewide Building Code
  - The Florida Building Commission

What is the Florida Building Code?

- Based on the International Family of Codes with Florida specific modifications
  - International Building Code (IBC)
  - International Mechanical Code (IMC)
  - International Plumbing Code (IPC)
  - International Fuel Gas Code (IFGC)
  - International Existing Building Code (IEBC)



- 2007 Florida Building Code
  - Effective December 31, 2008

The Florida Building Commission

- The Florida Building Commission was created to maintain the unified building code system

Accessibility

Florida Building Code

Chapter 11

Accessibility Chapter 11

- Accessible site and exterior facilities
- Barrier removal
- Accessible route
- Parking
- Curb ramps and ramps
- Detectable warnings

Accessible Sites and Exterior Facilities

FBC 11-4.1.2

- Accessible route from public areas of site to building entrance
- Accessible route between buildings
- Protruding objects
- Ground surfaces
- Signage

Barrier Removal
FBC 11-4.1.8(3)

- Requires the removal of architectural barriers from an existing parking facility

Accessible Route - Definition

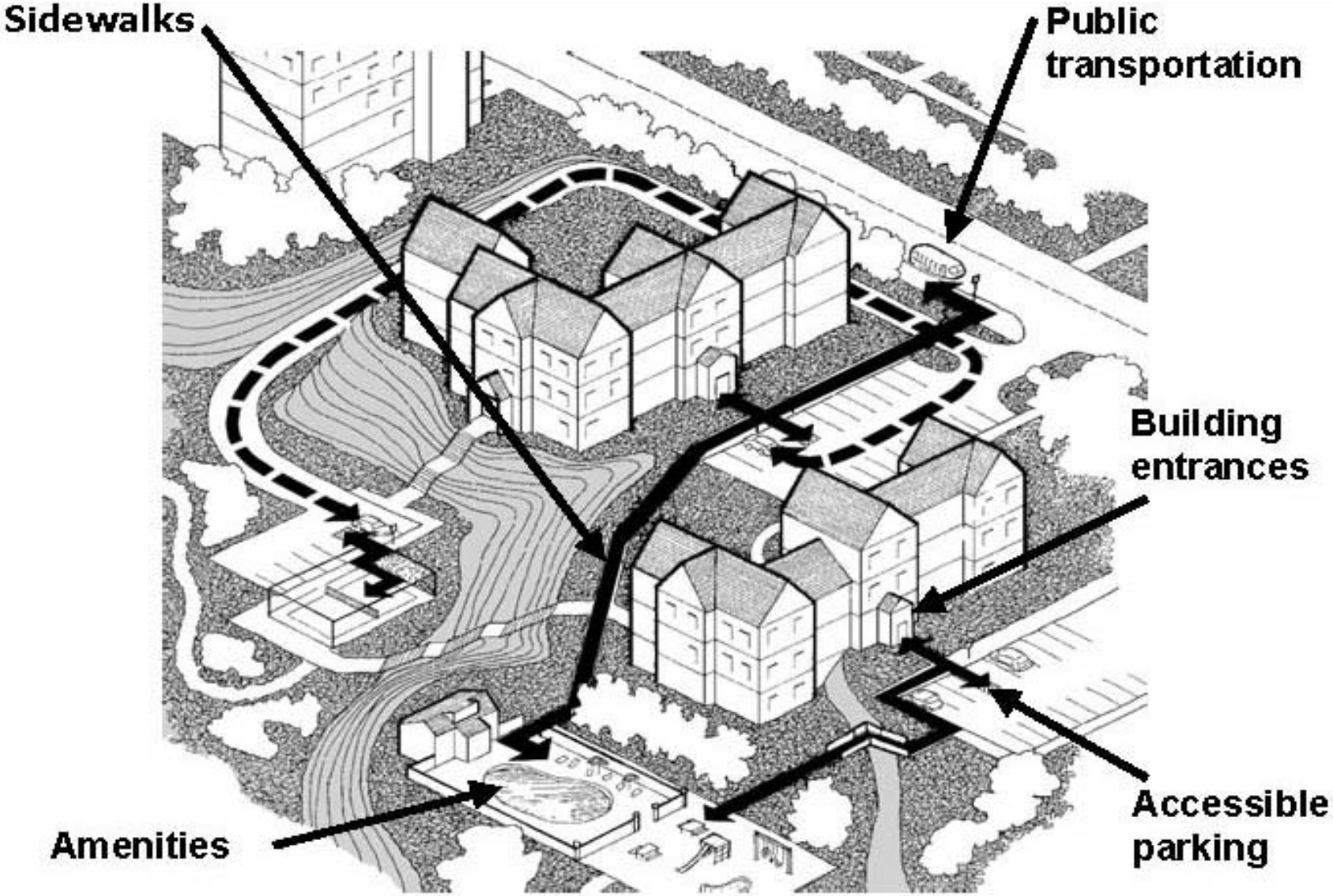
- A continuous unobstructed path connecting all accessible elements and spaces of a building or facility. Interior accessible routes may include corridors, floors, ramps, elevators, lifts, and clear floor space at fixtures. Exterior accessible routes may include parking access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps and lifts.

Accessible Route

FBC 11-4.3

- At least one accessible route within the boundary of the site shall be provided from public transportation stops, accessible parking, and accessible passenger loading zones, public streets or sidewalks.

Accessible Route



Accessible Route

FBC 11-4.3

Components of an Accessible Route

- Width
- Passing Space
- Headroom
- Surface Textures
- Slope
- Changes in Level

Accessible Parking
FBC 11-4.6

- Accessible Parking Spaces
- Access Aisle
- Curb Ramps
- Accessible Route
- Passenger Loading Zones
- Signage

Accessible Parking Spaces

FBC 11-4.1.2(5)

- Required minimum number

# of spaces		# req'd accessible spaces
1 to 25	=	1
26 to 50	=	2
51 to 75	=	3
76 to 100	=	4
501 to 1000	=	2% of total
1001 and over	=	20 plus 1 for each 100 over 1000

Accessible Parking Location
FBC 11-4.6.2

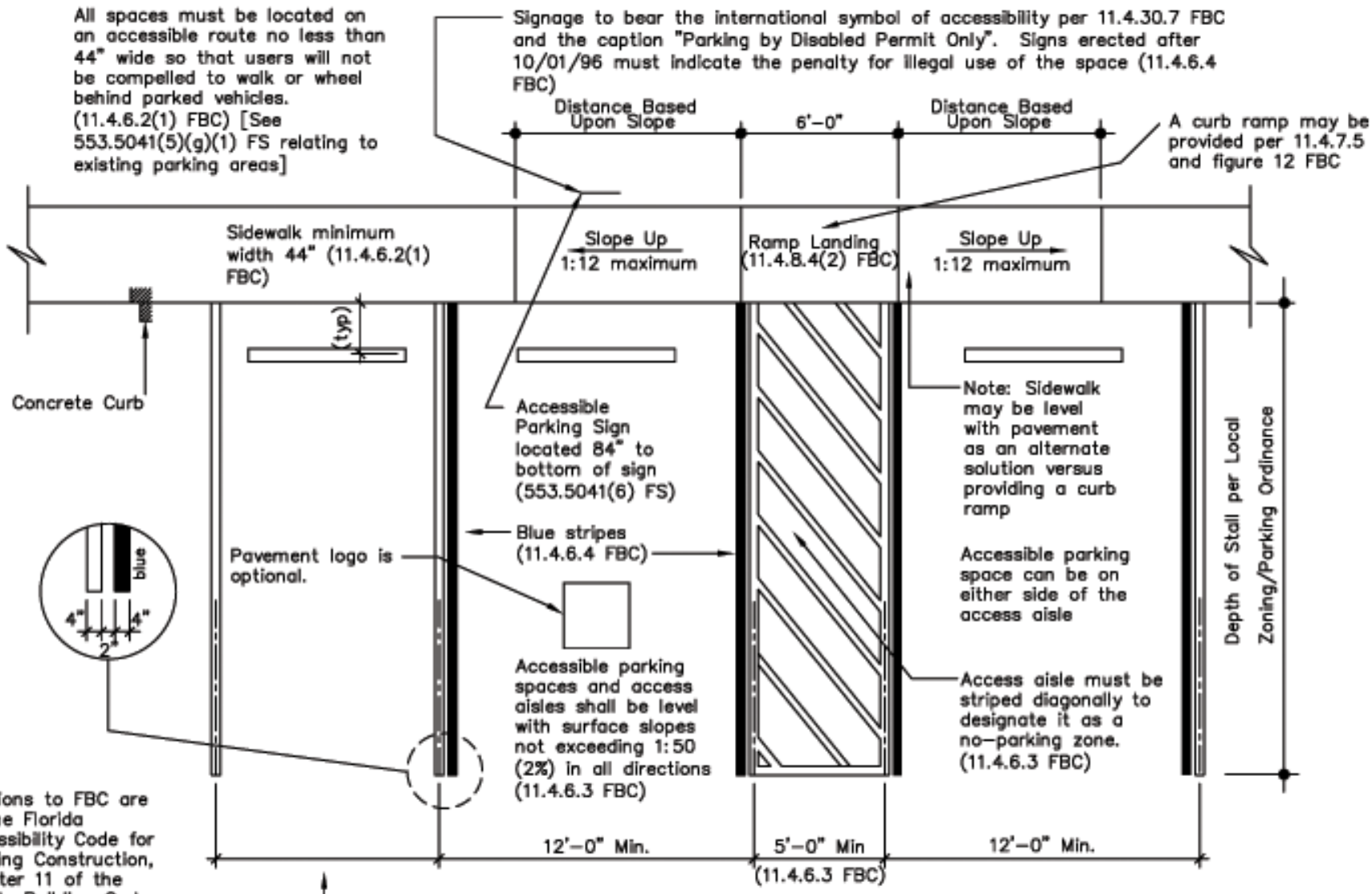
- Accessible parking spaces serving a particular building shall be located on the shortest safely accessible route
- All spaces must be located on an accessible route no less than 44 inches wide.
- Spaces shall be located so that users will not be compelled to walk or wheel behind parked vehicles.

Parking Spaces/Access Aisle

FBC 11-4.6.3

FIGURE 9(A)
STANDARDS PARKING SPACE DESIGN


Fifth Third Bank
3645



THIS TECHNICAL ASSISTANCE DOCUMENT IS INTENDED TO PROVIDE INFORMAL GUIDANCE AND DOES NOT CONSTITUTE A LEGAL INTERPRETATION OF STATUTORY OR REGULATORY CRITERIA

Recommended Accessible Parking Space(s) Design

N.T.S.

Drawing by Larry M. Schneider, AIA for the Florida Building Commission

04-01-02

Parking Signage
FBC 11-4.6.4

- Each accessible parking space shall be outlined in blue paint
- An above grade sign designating the accessible parking space is required
- Sign shall be mounted

  7’-0” to the bottom of

  the sign.

Curb Ramps

FBC 11-4.7

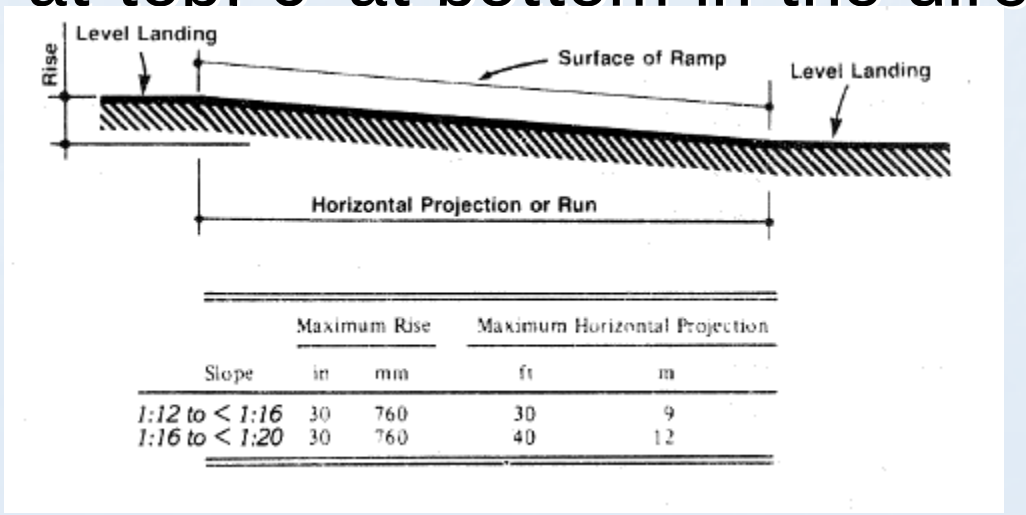
- Curb ramps shall be provided wherever an accessible route crosses a curb.
- Curb ramps must be located outside of disabled parking spaces and access aisles
- Handrails are not required
- EXCEPTION: Curb ramps that are a part of a required means of egress shall be not less than 44 inches wide
- Maximum slope of flared sides shall be 1:12

Ramps

FBC 11-4.8

- The maximum slope of a ramp in new construction shall be 1:12
- Clear width shall be 36” unless part of required means of egress, then 44”
- Landings 5’ at top, 6’ at bottom in the direction of travel

Figure 16



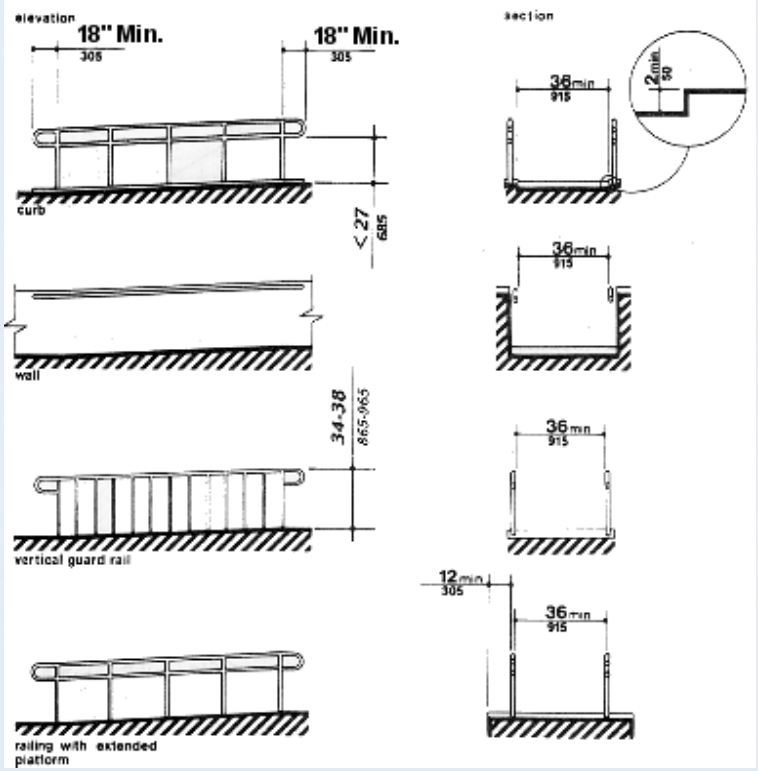
	Maximum Rise		Maximum Horizontal Projection	
Slope	in	mm	ft	m
1:12 to < 1:16	30	760	30	9
1:16 to < 1:20	30	760	40	12

Ramps – Handrails

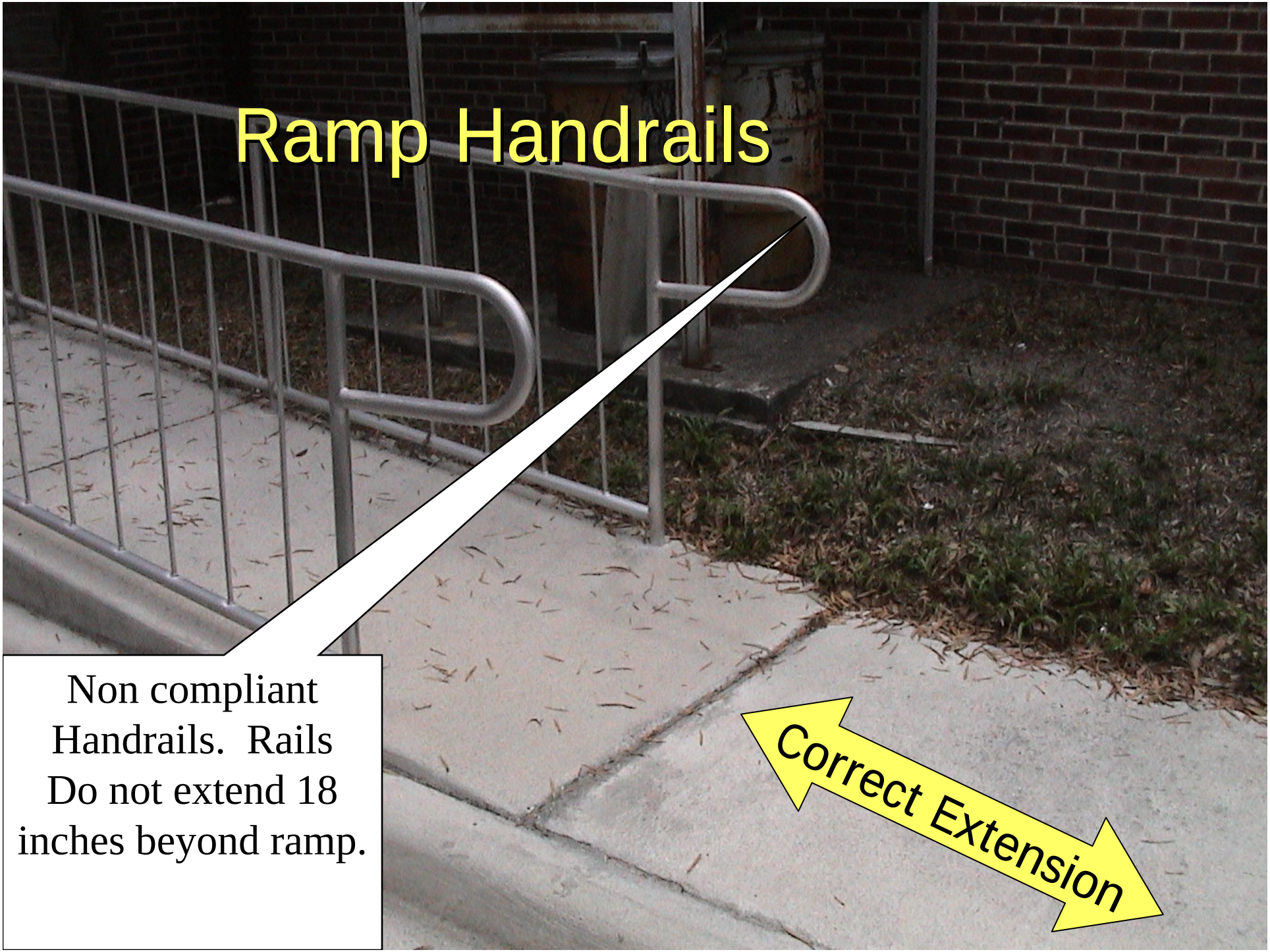
FBC 11-4.8

- Height – 34” to 38” to top
- Shall extend 18 inches at top and bottom
- Shall be continuous
- Ends shall be rounded or returned to floor, wall or post
- Mounted 1 ½” from wall

Figure 17



Ramp Handrails


Ramp Handrails
Non compliant Handrails. Rails Do not extend 18 inches beyond ramp.
Correct Extension

Detectable Warnings

FBC 11-4.29

Where Required:

- Detectable warnings at hazardous vehicular areas
- Detectable warnings at reflecting pools

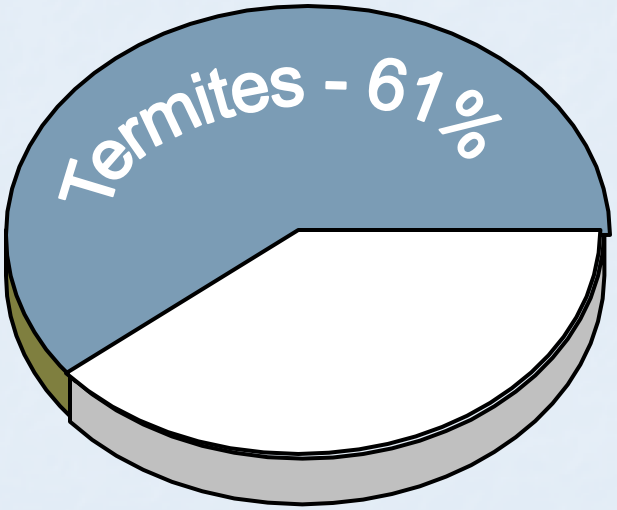
Termites

Florida Building Code

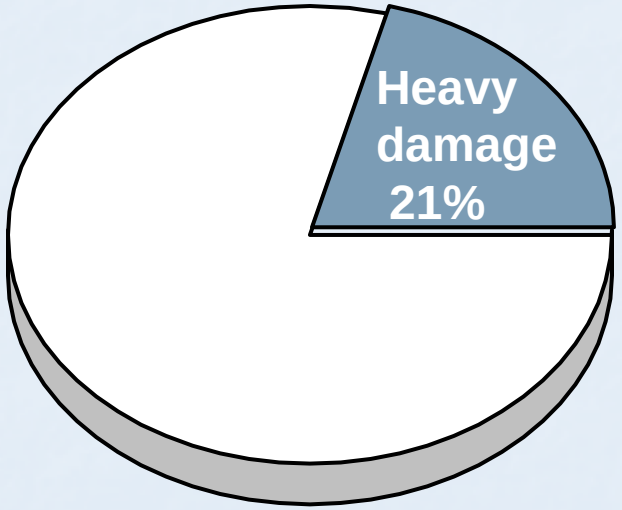
Chapters 1, 18, 21 and 23

What do termites have to do with the Florida Building Code?

Infested with Termites

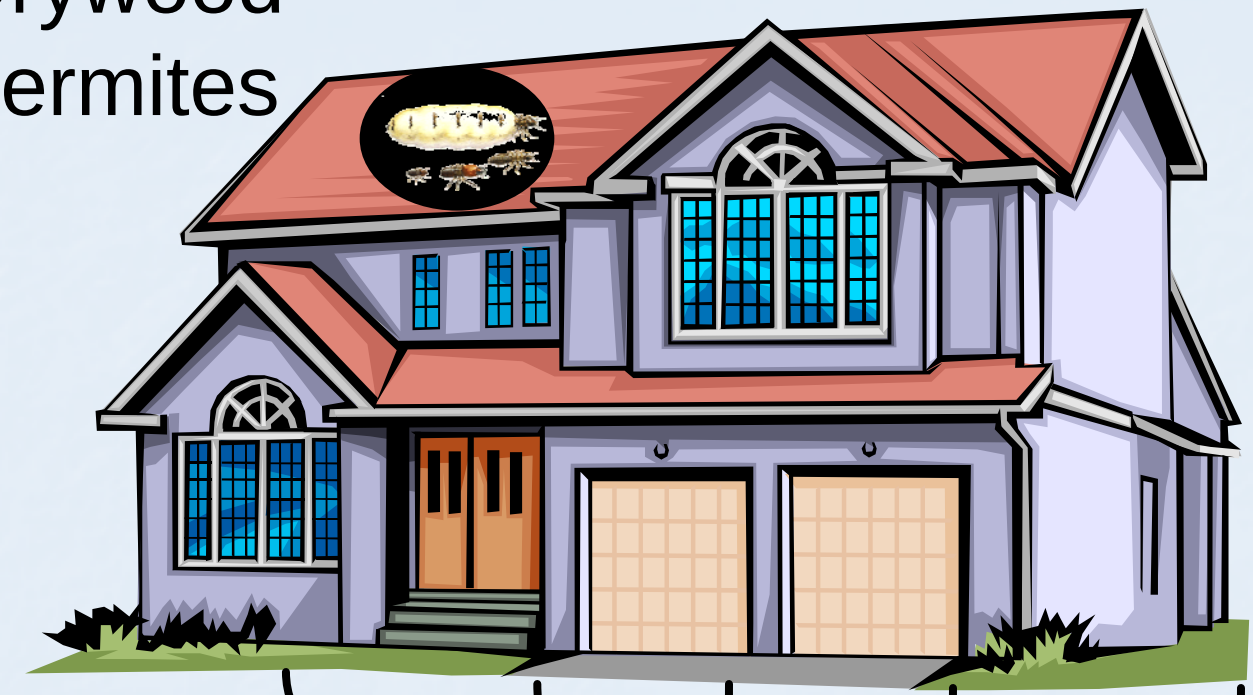


Damage



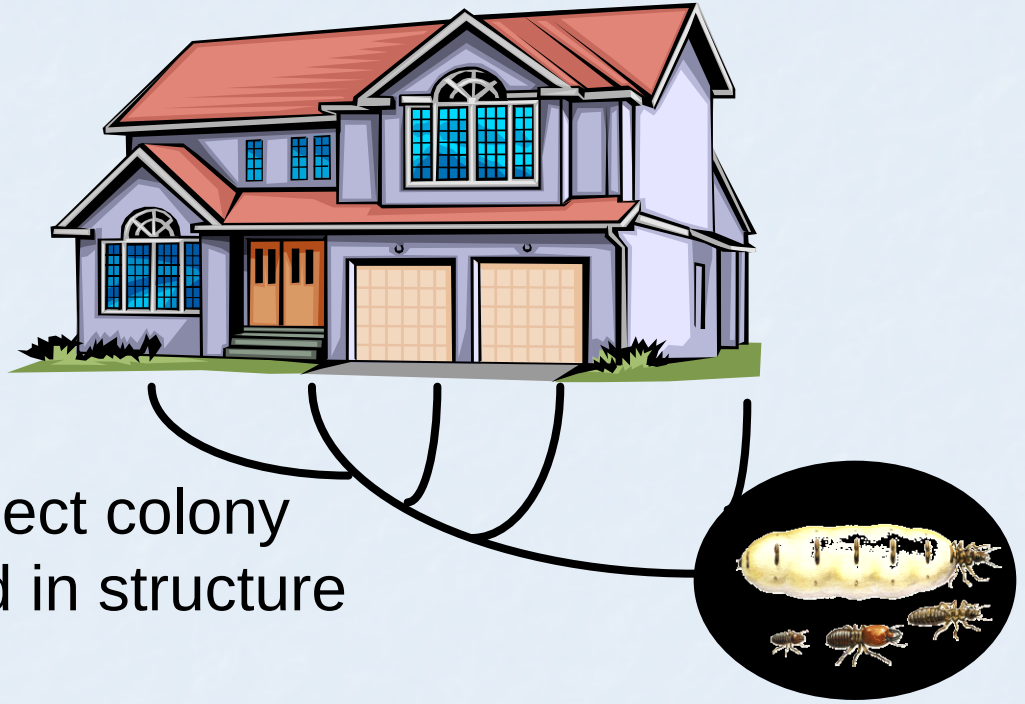
St. Johns County Survey of five-year-old houses

Drywood Termites



Subterranean Termites

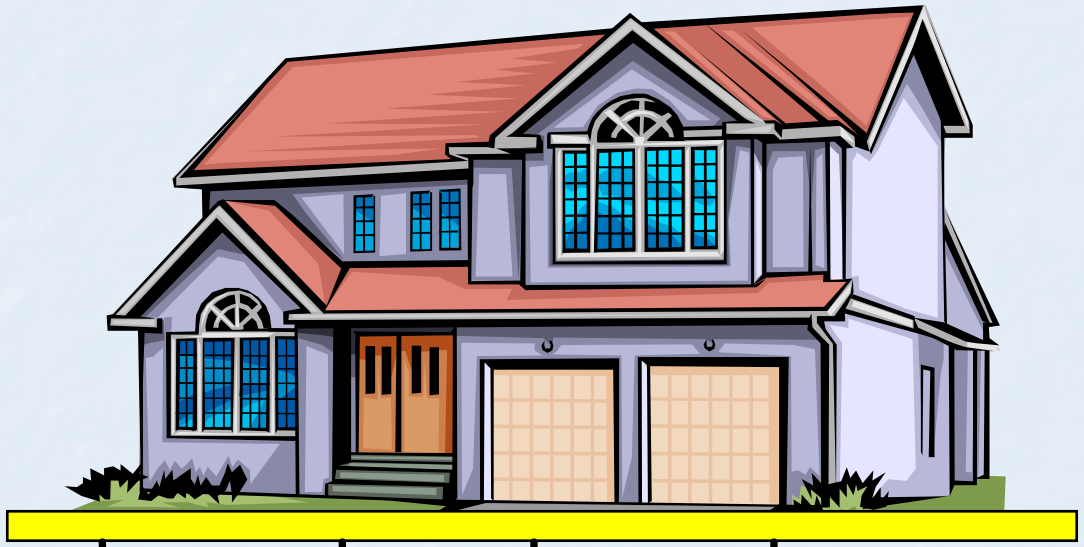
Subterranean Termites



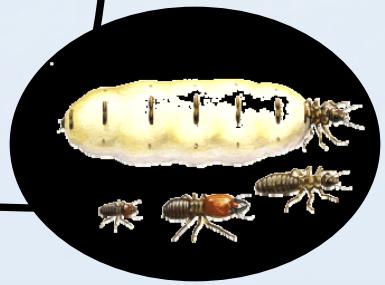
Mud tubes connect colony
in soil with wood in structure

- Nest in soil (generally)
- Colonies range in size from a few thousand up to 10 million termites

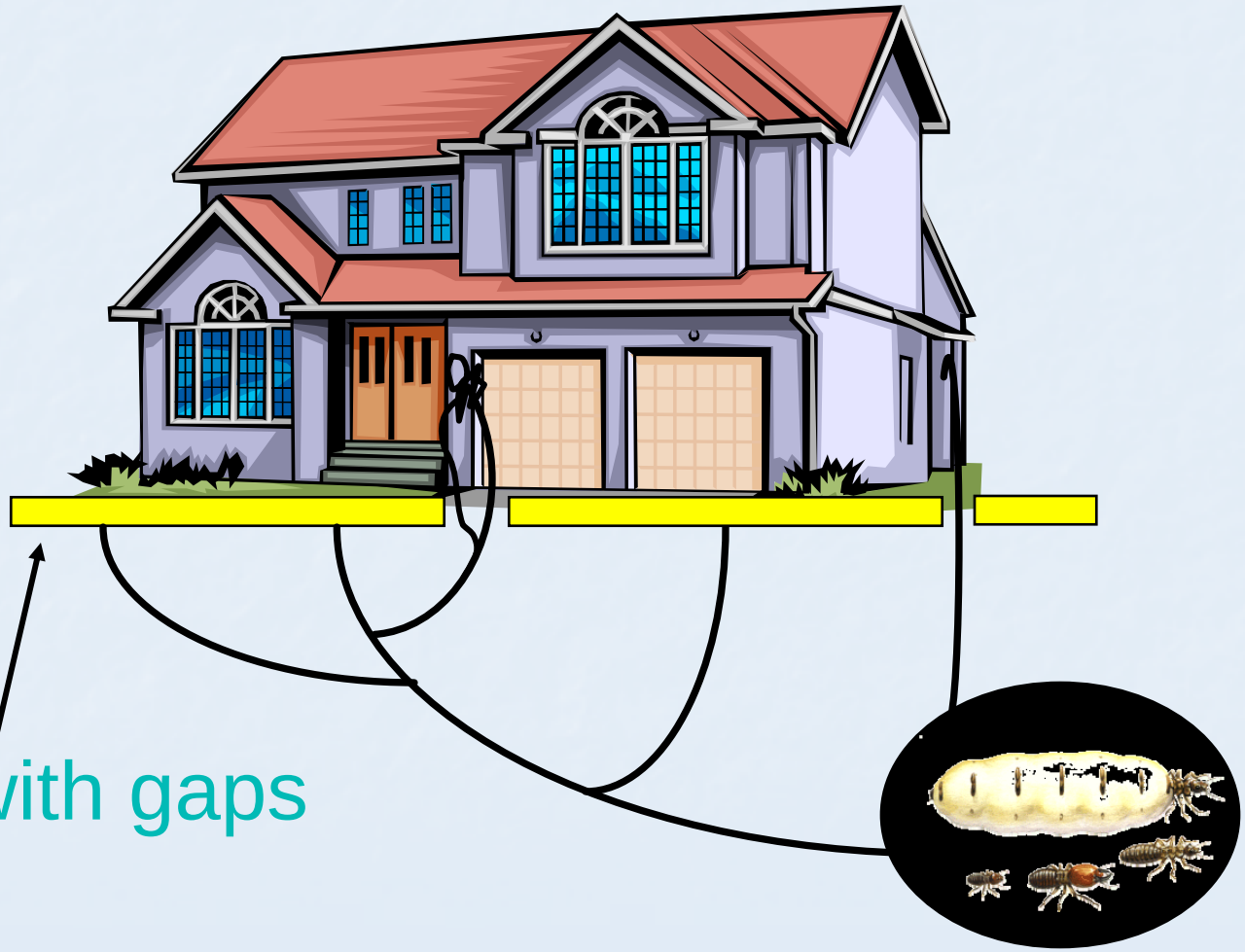
The Ideal Situation



Barrier free from gaps



Reality



Barrier with gaps

Eastern Subterranean Termites

- Feed in the soft portion of the wood
- Create galleries
- Feed on anything containing cellulose
- An active colony can consume one pound of wood per day

Mud Tubes

- Entry into buildings
- Protection from
  - Desiccation
  - Predators

Cracks in foundation

Why is subterranean termite control so important now?

- Before 1988 chlordane, heptachlor, and aldrin were used as barriers and lasted over 30 years
- After 1988 (post chlorinated hydrocarbon era) repellent termiticides replaced old chemistries
- Termiticides are now required to provide 5 years of 100% protection...when applied at the labeled rate

Termite requirements in the FBC

- Ch 1
- Ch 18
- Ch 21
- Ch 23

Certificate of Treatment 105.10

- Weather-resistant job-site posting board for duplicate treatment certificates as each required protective treatment is completed.
- Provide a copy for the person the permit is issued to
- Provide a copy for the building permit files.
- The treatment certificate shall provide the product used, identity of the applicator, time and date of the treatment, site location, area treated, chemical used, percent concentration and number of gallons used, to establish a verifiable record of protective treatment.

Subterranean Termite Treatment Methods and Practices

- Soil treatment with residual termiticides
- Installation of termite colony monitoring and baiting systems
- Treatment of structural wood with borate-containing compounds
- Installation of physical barriers to termite infestation

Termite Protection

FBC 1816.1

- all buildings have pre-construction treatment protection against subterranean termites;
- the rules and laws of the Florida Department of Agriculture and Consumer Services apply to pre-construction soil treatment;
- a Certificate of Compliance—containing specific language—is issued to the building department by the licensed pest control company

Soil Treatment

FBC 1816.1.1 & 1816.1.2

Includes requirements that if soil treatment is used:

- Initial treatment inside the foundation perimeter shall be done
  - after all excavation, backfilling, and compaction, and
  - any soil area disturbed after the initial treatment shall be retreated, including spaces boxed or formed

Box-Outs

FBC 1816.1.3

If soil treatment is used, requires:

- In concrete floors, spaces boxed out/formed for installation of plumbing traps, drains or any other purpose, must:
  - Be of plastic or metal permanently-placed forms
  - Be placed deep enough to eliminate any soil disturbance after the initial chemical soil treatment

Vapor Barrier

FBC 1816.1.4

If soil treatment is used,

- a minimum 6 mil vapor retarder to protect against rainfall dilution
- retreatment if rainfall occurs before vapor retarder placement
- that any work—including placement of reinforcing steel—done after chemical treatment until the concrete floor is poured, be done to avoid penetrating or disturbing treated soil

The 6-mil vapor retarder aids in avoiding displacement of the chemical termiticide.

Use care not to create any holes in the material

Overpour

FBC 1816.1.5

- If there is concrete overpour or mortar accumulation, it must be removed *before* treatment

Perimeter Treatment

FBC 1816.16.1.6

- Requires chemical soil treatments to be applied an additional one foot from the exterior and vertically after;
  - Construction is complete
  - Landscaping is installed

Registered Bait System

FBC 1816.16.1.7

- States that the treatment steps do not apply to a registered bait system when:
  - There is a signed contract for a minimum of 5 years from CO
  - And the system must be installed prior to final building approval.

Registered Wood System

FBC 1816.16.1.8

- States that the treatment steps do not apply to a registered wood system when:
  - Application of the wood-treatment is as required by label directions for use
  - Must be completed prior to final building approval and any changes

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.

WARNING
PLUMBERS AND ELECTRICIANS
TERMI MESH
WARNING
PLUMBERS AND ELECTRICIANS

Sites

FBC 2304.13

Preparation of building site and removal of debris

- 2304.13.1 Building sites shall be graded to provide drainage under all portions of the building not occupied by basements
- 2304.13.2 The foundation and area within 1 ft must have all vegetation, stumps, dead roots, cardboard, trash, and foreign material removed. Any fill material must be free of vegetation and foreign material, as well.

Debris
FBC 2304.13

Preparation of building site and removal of debris

- 2304.13.3 Lists items that must be removed under and within 1 foot of building
  - Wood forms, supports, wooden stakes, contraction spacers, tub trap boxes, plumbing supports, bracing, shoring, forms or other cellulose containing material shall be removed.

Wood left on the ground

Termite swarmers at certain times of the year

Decay and Termites
FBC 2304.11.1

If protection of wood members is required by this section, it must be by using naturally durable or preservative-treated wood.

- 2302.1.1.1 Definitions: “naturally durable wood” refers to the heartwood of the following species
  - ✓ Decay resistant: Redwood, Cedars, Black Locust and Black Walnut
  - ✓ Termite resistant: Redwood, Eastern Red Cedar
- an occasional piece with corner sapwood may be included if 90% or more of the width on each side of it is heartwood

Treated Wood
FBC 2302.11

- PRESERVATIVE-TREATED WOOD. Wood (including plywood) pressure treated with preservatives in accordance with Section 2303.1.8.
- 2304.11.1 through 2304.11.6 Wood subject to damage from both decay and termites shall be: a naturally durable species resistant to termites or preservative-treated

Posts and Timbers
FBC 2304.11.2.7

- Require posts and laminated timbers to be a naturally durable species resistant to termites or preservative-treated unless the posts:
  - Supported by concrete piers or metal pedestals projected at least 1 inch above the slab or deck and 6 inches above exposed earth, and are separated by an impervious moisture barrier
  - In enclosed crawl spaces or unexcavated areas located within the periphery of the building, and supported by a concrete pier or metal pedestal at a height greater than 8 inches from exposed ground, and are separated there from by an impervious moisture barrier

Ground Contact
FBC 2304.11.4

- Wood in contact with ground or freshwater shall be naturally durable or preservative-treated using water-borne preservatives except when the wood is continuously below the water

Embedded Posts
FBC 2304.11.4.1

- Posts or columns that are embedded in concrete and which support permanent structures that are embedded in concrete that is exposed to the weather or in direct contact with the earth has to be of preservative-treated wood

Floors and Roofs
FBC 2304.11.4.2

- Requires naturally durable or preservative-treated wood to be used when floors or roofs are supported by wood, moisture permeable and not separated by an impervious barrier naturally durable or preservative-treated wood

Decks and Fences
FBC 2304.11.4.3

- Requires that decks, fences, patios, planters and other wooden building components must be constructed to have:
  - Eighteen-inch (457 mm) clearance beneath, or
  - Six-inch (152 mm) clearance between the top of the component and the exterior wall covering or have components that are easily removable by screws or hinges to allow access for inspection of the foundation sidewall and treatment for termites

Balconies and Porches
FBC 2304.11.5

- Wood members that support of balconies, porches or similar permanent building appurtenances that are exposed to the weather and not covered with a roof, eave, overhang must be naturally durable or preservative-treated wood

Foam
FBC 2304.11.10

- 2304.11.10 requires that when foam insulation is close to the ground that is have to meet Section 2603.8 unless there is six inches clear space
- Section 2603.8 does not permit foam insulation to be below ground in termite prone areas

Inspections required

- The Florida Building Code, Building
- and the Florida Building Code, Residential
- have the same requirements for inspections.

Permits
FBC 105.10

Certificate of Protective Treatment for Prevention of Termites

- Requires a weather-resistant board on the jobsite for posting of Termite Treatment Certificates
- Certificate must include:
  - Product used
  - Applicator
  - Treatment time and date
  - Site location
  - Area treated
  - Chemical used
  - Concentration
  - Gallons used
- The final exterior treatment applies only to cases where a soil chemical barrier method is used

Inspections
FBC 109.3.4

Termites

- Building components and surroundings that must be protected from termite damage:
  - in accordance with 1503.6, Section 2304.13, Section 2304.11.6 or
  - specifically required to be inspected for termites in accordance with 2114, or
  - required to have chemical soil treatment in accordance with 1816
- shall not be covered or concealed until released by the building official

Termite Inspection
FBC 2114

Includes removal of all non-preservative treated on or non-naturally durable wood or other cellulose-containing material in cells and cavities in masonry units and air gaps between brick, stone or masonry veneers and the structure prior to concrete placement

Termite Inspection
FBC 2114.2

Brick, stone, or other veneer must be supported by a concrete bearing ledge at least equal to the total thickness of the brick, stone or other veneer, which is poured integrally with the concrete foundation.

- No hidden cold joints are permitted
- An approved physical barrier must also be installed from below the wall sill plate
- If masonry veneer extends below grade and there is no physical barrier, a treatment must be applied to the cavity

High Velocity Hurricane Zones—Concrete Slabs on Fill

FBC 1820.2 & 1820.5

- All fill placed under slabs must be clean sand or rock, free of debris. Max size of rock within 12” below slab is 3”
- Fill must be thoroughly compacted

Types of systems

There are a number of systems that can be used to treat and/or prevent termites

The major systems are;

- Traditional
- Bait
- Non-repelling barrier system

Concerns with Liquid Termiticides

- Use of many gallons of chemicals to treat a structure
- Longevity questions
  - Soil type, climate, etc
- Can’t be used in certain situations
  - Wells
  - Low lying areas
  - Areas subject to high moisture

Situations Where Baiting Systems May Be Preferred

- Close proximity to wells
- High water tables
- Concerns about chemicals
- Situations:
  - Where termiticides may wash away
  - Resulting from poor construction practices
  - Where pets and vertebrate pests may dig
  - Where soil will be disturbed by landscape or irrigation system installation and maintenance

Bait Stations

Exterra

Sentricon

FirstLine

Terminate

Disadvantages of Baits

- Success is dependent on the ability of termites to find monitor stations
  - We know little about termite foraging behavior
- May require a year or longer to attain control (but may eliminate colony)
- Expensive
- Success also depends on skills and dedication of the technician for installing, monitoring, baiting, and maintaining the bait station

Borate-Containing Compounds

- Disodium octaborate tetrahydrate (DOT)
  - Similar to boric acid
  - Acts as a stomach poison
  - Termites will generally avoid wood that has been treated with borate compounds
  - Treatment methods include penetrating (sometimes referred to as borate pressure treated or industrial) and topical
  - Includes borate-containing compounds like Bora-Care and TimBor


ABOVE GROUND
AND CONTINUOUSLY PROTECTED
FROM LIQUID WATER
GREAT SOUTHERN WOOD PRES
ABBEVILLE, AL
PLANT# 724
2001
ADVANCE GUARD
SBX .42 DOT
AWPA
SYP LUMBER
AND CONTINUOUSLY PROTECTED

Physical Barriers

- Barrier prevents termite penetration
- Termi-mesh
  - corrosion-resistant stainless steel
- Must be installed at time of construction

The End

- Questions or comments
- Fill out evaluations