

# PREFACE

## Introduction

The State of Florida first mandated statewide building codes during the 1970s at the beginning of the modern construction boom. The first law required all municipalities and counties to adopt and enforce one of the four state-recognized model codes known as the “state minimum building codes.” During the early 1990s a series of natural disasters, together with the increasing complexity of building construction regulation in vastly changed markets, led to a comprehensive review of the state building code system. The study revealed that building code adoption and enforcement was inconsistent throughout the state and those local codes thought to be the strongest proved inadequate when tested by major hurricane events. The consequences of the building codes system failure were devastation to lives and economies and a statewide property insurance crisis. The response was a reform of the state building construction regulatory system that placed emphasis on uniformity and accountability.

The 1998 Florida Legislature amended Chapter 553, Florida Statutes, Building Construction Standards, to create a single state building code that is enforced by local governments. As of March 1, 2002, the Florida Building Code supercedes all local building codes which are developed and maintained by the Florida Building Commission. It is updated every three years and may be amended annually to incorporate interpretations and clarifications.

## Scope

The *Florida Building Code* is based on national model building codes and national consensus standards which are amended where necessary for Florida specific needs. The Code incorporates all building construction-related regulations for public and private buildings in the State of Florida other than those specifically exempted by Section 553.73, Florida Statutes. It has been harmonized with the Florida Fire Prevention Code, which is developed and maintained by the Department of Financial Services, Office of the State Fire Marshal, to establish unified and consistent standards.

The base codes for the 2004 edition of the Florida Building Code include: the International Building Code, 2003 edition; the International Plumbing Code, 2003 edition; the International Mechanical Code, 2003 edition; the International Fuel Gas Code, 2003 edition; the International Residential Code, 2003 edition; the International Existing Building Code, 2003 edition; the National Electrical Code, 2002 edition; the U. S. Department of Housing and Urban Development, Fair Housing Guidelines, and; substantive criteria from the American Society of Heating, Refrigerating and Air-conditioning Engineers’ (ASHRAE) Standard 90.1-2001. State and local codes adopted and incorporated into the Code include the Florida Energy Efficiency Code for Building Construction, the Florida Accessibility Code for Building Construction and special hurricane protection standards for the High Velocity Hurricane Zone.

The code is composed of 7 main volumes: the *Florida Building Code, Building*, which also includes Chapter 13 (energy efficiency) and Chapter 11 (accessibility) as well as state regulations for licensed facilities; the *Florida Building Code, Plumbing*; the *Florida Building Code, Mechanical*; the *Florida Building Code, Fuel Gas*; the *Florida Existing Building Code*; and the *Florida Building Code, Residential*. *Florida Building Code, Test Protocols for High-Velocity Hurricane Zones*. Chapter 27 of the *Florida Building Code, Building*, adopts the *National Electrical Code*, NFPA 70, by reference. Chapter 33 of the *Florida Building Code, Residential* adopts the *National Electrical Code Requirements for One- and Two-Family Dwellings*, NFPA 70A, by reference.

Under certain strictly defined conditions, local governments may amend requirements to be more stringent than the Code. All local amendments to the *Florida Building Code* must be adopted by local ordinance and reported to the Florida Building Commission then posted on the [www.floridabuilding.org](http://www.floridabuilding.org) web site in Legislative format for a month before being enforced. Local amendments to the *Florida Building Code* and the *Florida Fire Prevention Code* may be obtained from the Florida Building Commission web site, or from the Florida Department of Community Affairs or the Florida Department of Financial Services, Office of the State Fire Marshal, respectively.

## Adoption and Maintenance

The *Florida Building Code* is adopted and updated with new editions triennially by the Florida Building Commission. It is amended annually to incorporate interpretations, clarifications and to update standards. Minimum requirements for permitting, plans review and inspections are established by the Code, and local jurisdictions may adopt additional administrative requirements that are more stringent. Local technical amendments are subject to strict criteria established by Section 553.73, *F.S.* They are subject to Commission review and adoption into the Code or repeal when the Code is updated triennially and are subject to appeal to the Commission according to the procedures established by Section 553.73, *F.S.*

Nine Technical Advisory Committees (TACs), which are constituted consistent with American National Standards Institute (ANSI) Guidelines, review proposed code changes and clarifications of the Code and make recommendations to the Commission. The TACs include: Joint Building Fire (a joint committee of the Commission and the State Fire Marshal); Building Structural; Plumbing and Fuel Gas; Mechanical; Electrical; Energy; Accessibility; Special Occupancy (state agency construction and facility licensing regulations); and Code Administration/Enforcement.

The Commission may only issue official code clarifications using procedures of Chapter 120, *Florida Statutes*. To obtain such a clarification, a request for a Declaratory Statement (DEC) must be made to the Florida Building Commission in a manner that establishes a clear set of facts and circumstances and identifies the section of the code in question. Requests are analyzed by staff, reviewed by the appropriate Technical Advisory Committee, and then the Florida Building Commission takes first action. Draft Declaratory Statements are subject to public comment and finalized by the Commission at its next meeting. These interpretations establish precedents for situations having similar facts and circumstances and are typically incorporated into the code in the next code amendment cycle.

### **Marginal Markings**

Vertical lines in the margins within the body of the code indicate a change from the requirements of the base codes to the 2004 *Florida Building Code* effective October 1, 2005.

An asterisk (\*) inserted in the margin indicates a change from the 2004 *Florida Building Code* to the 2005 *Florida Building Code* revisions filed with the Florida Department of State November 21, 2005.

\*\* Two asterisks (\*\*) inserted in the margin indicate a change in the 2004 *Florida Building Code* to the 2006 *Florida Building Code* revisions, effective December 8, 2006.

\*\*\* Three asterisks (\*\*\*) inserted in the margin indicates a change in the 2004 *Florida Building Code* to the 2007 *Florida Building Code* revisions, effective July 1, 2007.

The square symbol inserted in the margin indicates corrected values for mislabeled text.

Sections deleted from the base code are designated “Reserved.”

### **Acknowledgments**

The *Florida Building Code* is produced through the efforts and contributions of building designers, contractors, product manufacturers, regulators and other interested parties who participate in the Florida Building Commission’s consensus processes, Commission staff and the participants in the national model code development processes.

over which a roof covering, with a slope of 2 to 12 (17-percent slope) or greater, is applied.

**UNUSUALLY TIGHT CONSTRUCTION.** Construction meeting the following requirements:

1. Walls comprising the building thermal envelope have a continuous water vapor retarder with a rating of 1 perm [ $57.4 \text{ ng}/(\text{s} \cdot \text{m}^2 \cdot \text{Pa})$ ] or less with openings therein gasketed or sealed.
2. Doors and openable windows meet the air leakage requirements of Chapter 13, Section 606 of the *Florida Building Code, Building*; and
3. Caulking or sealants are applied to areas such as joints around window and door frames between sole plates and floors, between wall-ceiling joints, between wall panels, at penetrations for plumbing, electrical and gas lines, and at other openings.

**VACUUM BREAKERS.** A device which prevents backsiphonage of water by admitting atmospheric pressure through ports to the discharge side of the device.

**VALUE.** The estimated current replacement cost of the building in kind.

**VAPOR PERMEABLE MEMBRANE.** A material or covering having a permeance rating of 5 perms ( $52.9 \cdot 10^{-10} \text{ kg}/\text{Pa} \cdot \text{s} \cdot \text{m}^2$ ) or greater, when tested in accordance with the desiccant method using Procedure A of ASTM E 96. A vapor permeable material permits the passage of moisture vapor.

**VAPOR RETARDER.** A vapor resistant material, membrane or covering such as foil, plastic sheeting, or insulation facing having a permeance rating of 1 perm ( $5.7 \cdot 10^{-11} \text{ kg}/\text{Pa} \cdot \text{s} \cdot \text{m}^2$ ) or less, when tested in accordance with the desiccant method using Procedure A of ASTM E 96. Vapor retarders limit the amount of moisture vapor that passes through a material or wall assembly.

**VENT.** A passageway for conveying flue gases from fuel-fired appliances, or their vent connectors, to the outside atmosphere.

**VENT COLLAR.** See “Flue collar.”

**VENT CONNECTOR.** That portion of a venting system which connects the flue collar or draft hood of an appliance to a vent.

**VENT DAMPER DEVICE, AUTOMATIC.** A device intended for installation in the venting system, in the outlet of an individual, automatically operated fuel burning appliance and that is designed to open the venting system automatically when the appliance is in operation and to close off the venting system automatically when the appliance is in a standby or shutdown condition.

**VENT GASES.** Products of combustion from fuel-burning appliances, plus excess air and dilution air, in the venting system above the draft hood or draft regulator.

**VENT STACK.** A vertical vent pipe installed to provide circulation of air to and from the drainage system and which extends through one or more stories.

**VENT SYSTEM.** Piping installed to equalize pneumatic pressure in a drainage system to prevent trap seal loss or blow-back due to siphonage or back pressure.

**VENTILATION.** The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

**VENTING.** Removal of combustion products to the outdoors.

**VENTING SYSTEM.** A continuous open passageway from the flue collar of an appliance to the outside atmosphere for the purpose of removing flue or vent gases. A venting system is usually composed of a vent or a chimney and vent connector, if used, assembled to form the open passageway.

**VERTICAL PIPE.** Any pipe or fitting that makes an angle of 45 degrees (0.79 rad) or more with the horizontal.

**WALLS.** Walls shall be defined as follows:

**Load-bearing wall** is a wall supporting any vertical load in addition to its own weight.

**Nonbearing wall** is a wall which does not support vertical loads other than its own weight.

**WASTE.** Liquid-borne waste that is free of fecal matter.

**WASTE PIPE OR STACK.** Piping that conveys only liquid sewage not containing fecal material.

**WATER-DISTRIBUTION SYSTEM.** Piping which conveys water from the service to the plumbing fixtures, appliances, appurtenances, equipment, devices or other systems served, including fittings and control valves.

**WATER HEATER.** Any heating appliance or equipment that heats potable water and supplies such water to the potable hot water distribution system.

**WATER MAIN.** A water-supply pipe for public use.

**WATER OUTLET.** A valved discharge opening, including a hose bibb, through which water is removed from the potable water system supplying water to a plumbing fixture or plumbing appliance that requires either an air gap or backflow pre-vention device for protection of the supply system.

**WATER-SERVICE PIPE.** The outside pipe from the water main or other source of potable water supply to the water-distribution system inside the building, terminating at the service valve.

**WATER-SUPPLY SYSTEM.** The water-service pipe, the water-distributing pipes and the necessary connecting pipes, fittings, control valves and all appurtenances in or adjacent to the building or premises.

**WET VENT.** A vent that also receives the discharge of wastes from other fixtures.

**WIND-BORNE DEBRIS REGION.** Portions of hurricane-prone regions that are within 1 mile (1.61 km) of the coastal mean high water line where the basic wind speed is 110 mph (48 m/s) or greater; or portions of hurricane-prone regions where the basic wind speed is 120 mph (53 m/s) or greater; or Hawaii.

**WINDER.** A tread with nonparallel edges.

**WOOD STRUCTURAL PANEL.** A panel manufactured from veneers; or wood strands or wafers; bonded together with waterproof synthetic resins or other suitable bonding systems. Examples of wood structural panels are plywood, OSB or composite panels.

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## DEFINITIONS

**YARD.** An open space, other than a court, unobstructed from the ground to the sky, except where specifically provided by this code, on the lot on which a building is situated.

# Part III — Building, Planning and Construction

## CHAPTER 3 BUILDING PLANNING

### SECTION R301 DESIGN CRITERIA

**R301.1 Design.** Buildings and structures, and all parts thereof, shall be constructed to safely support all loads, including dead loads, live loads, roof loads, flood loads and wind loads as prescribed by this code. The construction of buildings and structures shall result in a system that provides a complete load path capable of transferring all loads from their point of origin through the load-resisting elements to the foundation.

**Exception:** Buildings and structures located within the High-Velocity Hurricane Zone shall comply only with Sections R302 to R325, inclusive and the provisions of Chapter 44.

**R301.1.1 Alternative provisions.** As an alternative to the requirements in Section R301.1 the following standards are permitted subject to the limitations of this code and the limitations there in. Where engineered design is used in conjunction with these standards the design shall comply with the *Florida Building Code, Building*.

1. American Forest and Paper Association (AF&PA) *Wood Frame Construction Manual* (WFCM).
2. American Iron and Steel Institute (AISI), *Standard for Cold-Formed Steel Framing Prescriptive Method for One- and Two-Family Dwellings* (COFS/PM).

**R301.1.2 Construction systems.** The requirements of this code are based on platform and balloon-frame construction for light-frame buildings. The requirements for concrete and masonry buildings are based on a balloon framing system. Other framing systems must have equivalent detailing

to ensure force transfer, continuity and compatible deformations.

**R301.1.3 Engineered design.** When a building of otherwise conventional construction contains structural elements exceeding the limits of Section R301 or otherwise, not conforming to this code, these elements shall be designed in accordance with accepted engineering practice. The extent of such design need only demonstrate compliance of nonconventional elements with other applicable provisions and shall be compatible with the performance of the conventional framed system. Engineered design in accordance with the *Florida Building Code, Building* is permitted for all buildings and structures, and parts thereof, included in the scope of this code.

**R301.2 Climatic and geographic design criteria.** Buildings shall be constructed in accordance with the provisions of this code as limited by the provisions of this section. Additional criteria shall be as set forth in Table R301.2(1).

**R301.2.1 Wind limitations.** Buildings and portions thereof shall be limited by wind speed, as defined in Table R301.2(1), and construction methods in accordance with this code. Basic wind speeds shall be determined from Figure R301.2(4). Where different construction methods and structural materials are used for various portions of a building, the applicable requirements of this section for each portion shall apply. Where loads for windows, skylights and exterior doors (other than garage doors) are not otherwise specified, the loads listed in Table R301.2(2) adjusted for height and exposure per Table R301.2(3), shall be used to

TABLE R301.2(1)  
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

GROUND SNOW LOAD	WIND SPEED <sup>e</sup> (mph)	SEISMIC DESIGN CATEGORY <sup>g</sup>	SUBJECT TO DAMAGE FROM				WINTER DESIGN TEMP <sup>f</sup>	ICE SHIELD UNDER-LAYMENT REQUIRED <sup>i</sup>	FLOOD HAZARDS <sup>h</sup>	AIR FREEZING INDEX <sup>j</sup>	MEAN ANNUAL TEMP <sup>k</sup>
			Weathering <sup>a</sup>	Frost line depth <sup>b</sup>	Termite <sup>c</sup>	Decay <sup>d</sup>					
NA	See Figure R301.2(4)	NA	Negligible	NA	Very Heavy	Moderate to Severe		NA	See R323	NA	NA

For SI: 1 pound per square foot = 0.0479 kN/m<sup>2</sup>, 1 mile per hour = 1.609 km/h.

a. Weathering index is “negligible” for concrete as determined from the Weathering Probability Map [Figure R301.2(3)]. The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216 or C 652.

b. Reserved.

c. Termite infestation per Figure R301.2(6) is “very heavy.”

d. Decay is “moderate to severe,” in accordance with Figure R301.2(7) depending on whether there has been a history of local damage.

e. Wind speed shall be from the basic wind speed map [Figure R301.2(4)]. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.

f. The outdoor design dry-bulb temperature shall be selected from the columns of 97<sup>1</sup>/<sub>2</sub>-percent values for winter from Appendix D of the *Florida Building Code, Plumbing*. Deviations from the Appendix D temperatures shall be permitted to reflect local climates or local weather experience as determined by the building official.

g. Reserved.

h. Reserved.

i. Reserved.

j. Reserved.

k. Reserved.

**TABLE R301.2(4)**  
**GARAGE DOOR LOADS FOR A BUILDING WITH A MEAN**  
**ROOF HEIGHT OF 30 FEET LOCATED IN EXPOSURE B**

Roof Angle > 10 degrees Effective Area: Width (ft) Height (ft)		Basic Wind Speed (mph - 3 second gust)													
		90		100		110		120		130		140		150	
9	7	12.8	-14.5	15.8	-17.9	19.1	-21.6	22.8	-25.8	26.7	-30.2	31.0	-35.1	35.6	-40.2
16	7	12.3	-13.7	15.2	-16.9	18.3	-20.4	21.8	-24.3	25.6	-28.5	29.7	-33.1	34.1	-38.0

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m<sup>2</sup>, 1 mile per hour = 1.609 km/h.

1. For effective areas or wind speeds between those given above the load may be interpolated, otherwise use the load associated with the lower effective area.
2. Table values shall be adjusted for height and exposure by multiplying by the adjustment coefficient in Table R301.2(3).
3. Plus and minus signs signify pressures acting toward and away from the building surfaces.
4. Negative pressures assume door has 2 feet of width in building's end zone.

determine design load performance requirements. Where loads for garage doors are not otherwise specified, the loads listed in Table R301.2(4) adjusted for height and exposure per Table R301.2(3), shall be used to determine design load performance requirements.

**R301.2.1.1 Design criteria.** Construction in regions where the basic wind speeds from Figure R301.2(4) equal or exceed 100 miles per hour (160.9 km/h) shall be permitted to be designed in accordance with one of the following:

1. American Forest and Paper Association (AF&PA) *Wood Frame Construction Manual for One- and Two-Family Dwellings* (WFCM);
2. *Minimum Design Loads for Buildings and Other Structures* (ASCE-7);
3. American Iron and Steel Institute (AISI), *Standard for Cold-Formed Steel Framing—Prescriptive Method for One- and Two-family Dwellings* (COFS/PM).
4. Concrete and concrete masonry construction shall be designed in accordance with the provisions of this code or in accordance with the applicable documents adopted in Section R301.2.1.1.
5. *IBHS Guideline for Hurricane Resistant Residential Construction* shall be permitted for buildings for a basic wind speed of 140 mph (63 m/s) or less in Exposure B in accordance with Figure R301.2(4). Provisions for design wind speeds of 140 mph (63 m/s) in the Guideline shall also be permitted for buildings for a basic wind speed of 120 mph (53 m/s) or less in Exposure C in accordance with Figure R301.2(4) and provisions for design wind speeds of 120 mph (54 m/s) in the Guideline shall be permitted for buildings for a basic wind speed of 100 mph (45 m/s) or less in Exposure C in accordance with Figure R301.2(4).
6. *The FC&PA Guide to Concrete Masonry Residential Construction in High Wind Areas* shall be permitted for applicable concrete masonry buildings for a basic wind speed of 130 mph (58 m/s) or less in Exposure B and 110 mph (49 m/s) or less in Exposure C in accordance with Figure R301.2(4); or
7. *The WPPC Guide to Wood Construction in High Wind Areas* shall be permitted for applicable wood-frame buildings for a basic wind speed of 130 mph (58 m/s) or less in Exposure B and 110

mph (49 m/s) or less in Exposure C in accordance with Figure R301.2(4).

8. The *Florida Building Code, Building*.

**R301.2.1.1.1 Design.** The following design guide shall be accepted as conforming to accepted engineering practices: *AAF Guide to Aluminum Construction in High-Wind Areas*. Vinyl and acrylic panels shall be removable. Removable panels shall be identified as removable by a decal. The identification decal shall essentially state: "Removable panel SHALL be removed when wind speeds exceed 75 mph (34 m/s)." Decals shall be placed such that the decal is visible when the panel is installed.

**R301.2.1.1.2 Sunrooms.** Sunrooms shall comply with AAMA/NPEA/NSA 2100 with the structural requirements and testing provisions of Chapter 5 modified to incorporate ASCE 7.

**R301.2.1.2 Protection of openings.** Windows in buildings located in wind-borne debris regions shall have glazed openings protected from wind-borne debris. Glazed opening protection for wind-borne debris shall meet the requirements of the Large Missile Test of ASTM E 1996 and ASTM E 1886, SSTD 12, ANSI/DASMA 115 (for garage doors) or TAS 201, 202 and 203, or AAMA 506 referenced therein.

(1) Opening in sunrooms, balconies or enclosed porches constructed under existing roofs or decks are not required to be protected provided the spaces are separated from the building interior by a wall and all openings in the separating wall are protected in accordance with this section. Such space shall be permitted to be designed as either partially enclosed or enclosed structures.

(2) Storage sheds that are not designed for human habitation and that have a floor area of 720 square feet (67 m<sup>2</sup>) or less are not required to comply with the mandatory wind-borne debris impact standard of this code.

Impact resistant coverings shall be tested at 1.5 times the design pressure (positive or negative) expressed in pounds per square foot as determined by the *Florida Building Code, Residential* Section R301 for which the specimen is to be tested.

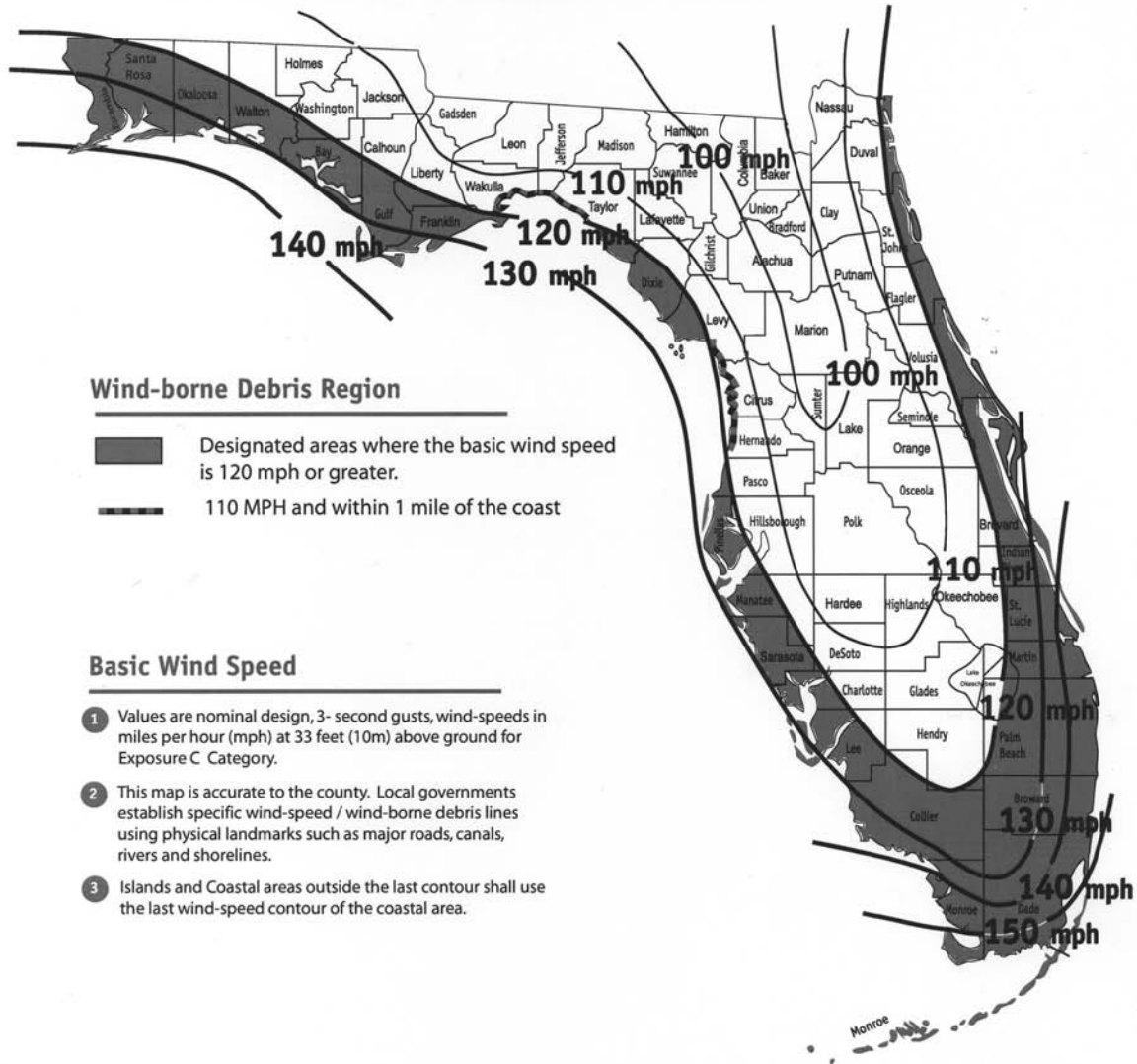
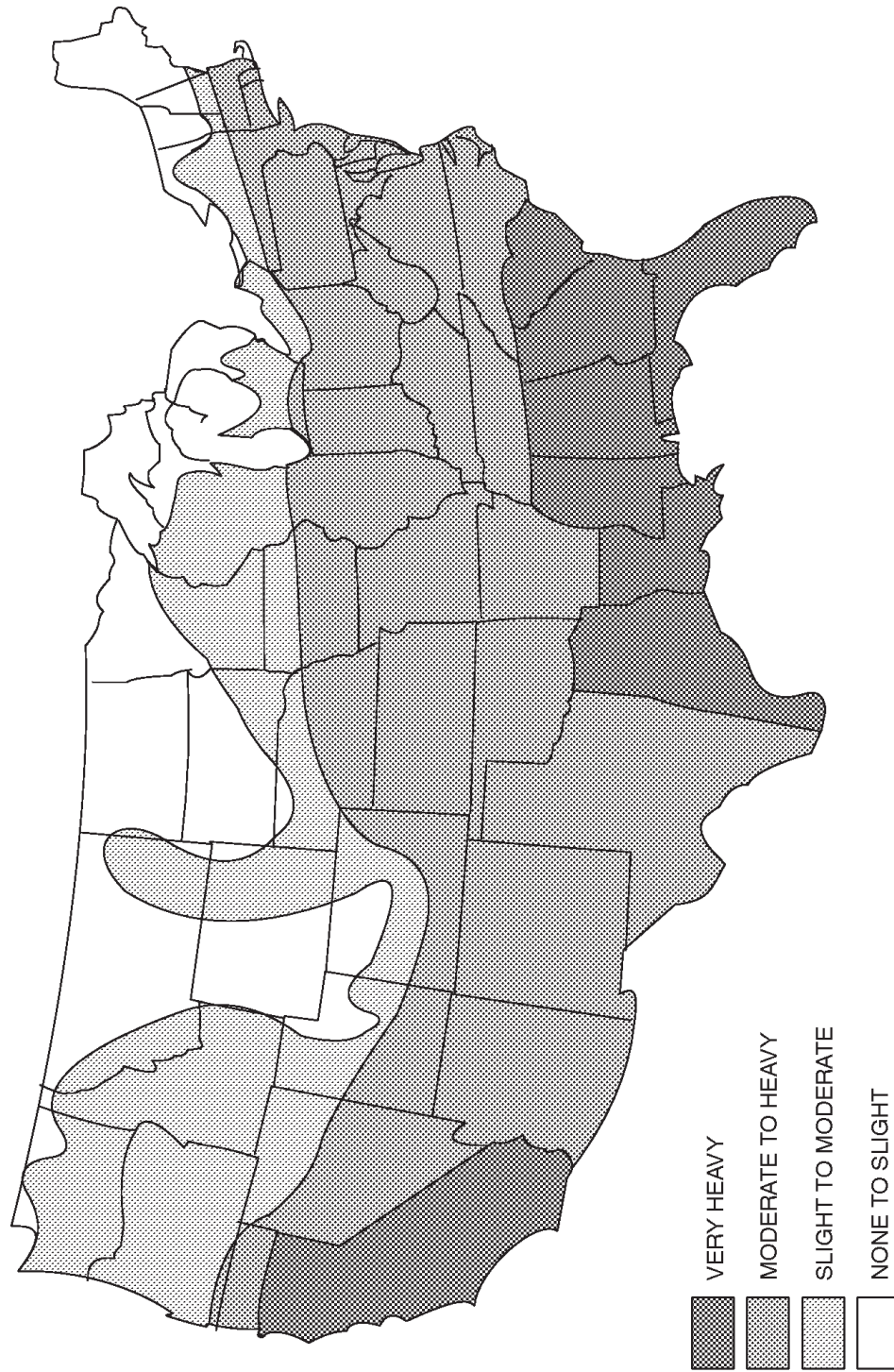


FIGURE R301.2(4)  
BASIC WIND DESIGN SPEEDS

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NOTES: Lines defining areas are approximate only. Local conditions may be more or less severe than indicated by the region classification.

FIGURE R301.2(6)  
TERMITE INFESTATION PROBABILITY MAP