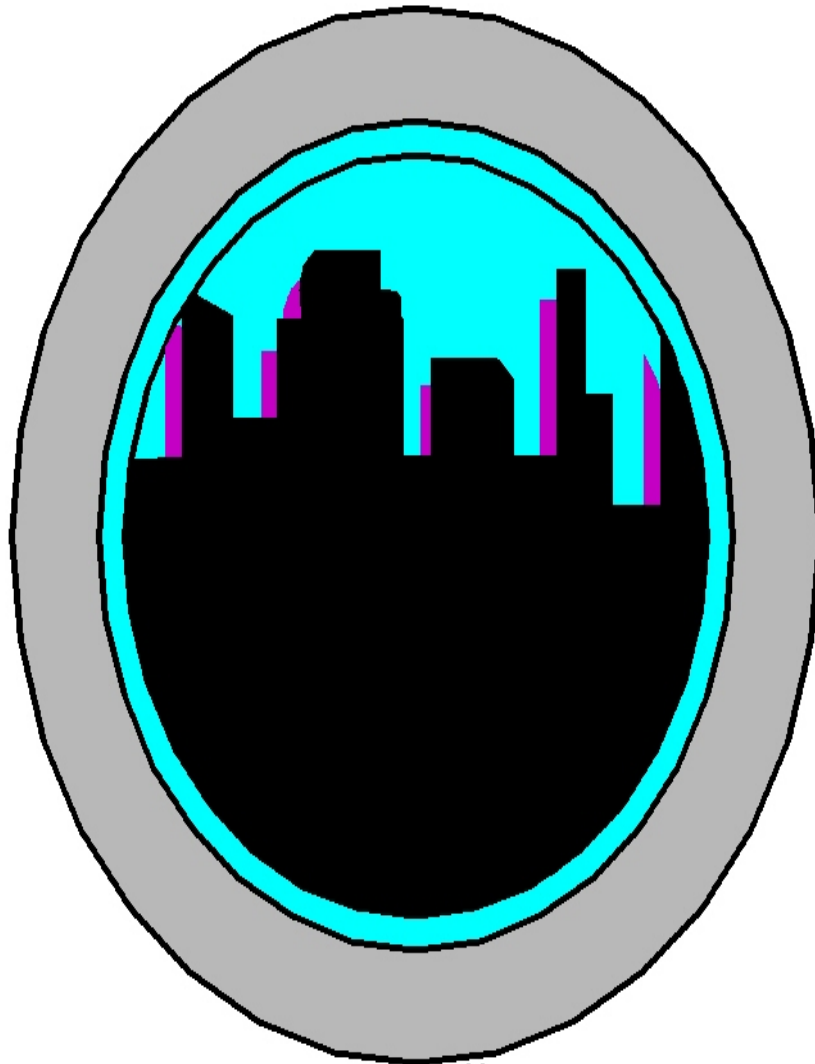


# ADVANCED FLORIDA

## BUILDING CODE 2005/2006

STUDENT HANDOUT



Presented by

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2004 Florida Building Code takes effect October 1, 2005 As per SB 442, the effective date of the Florida Building Code, 2004 Edition, is October 1, 2005. After July 1, 2005, a design professional who has been preparing construction documents for a project in anticipation of the Florida Building Code, 2004 edition, may choose to have such project governed by the 2004 edition of the Florida Building Code.

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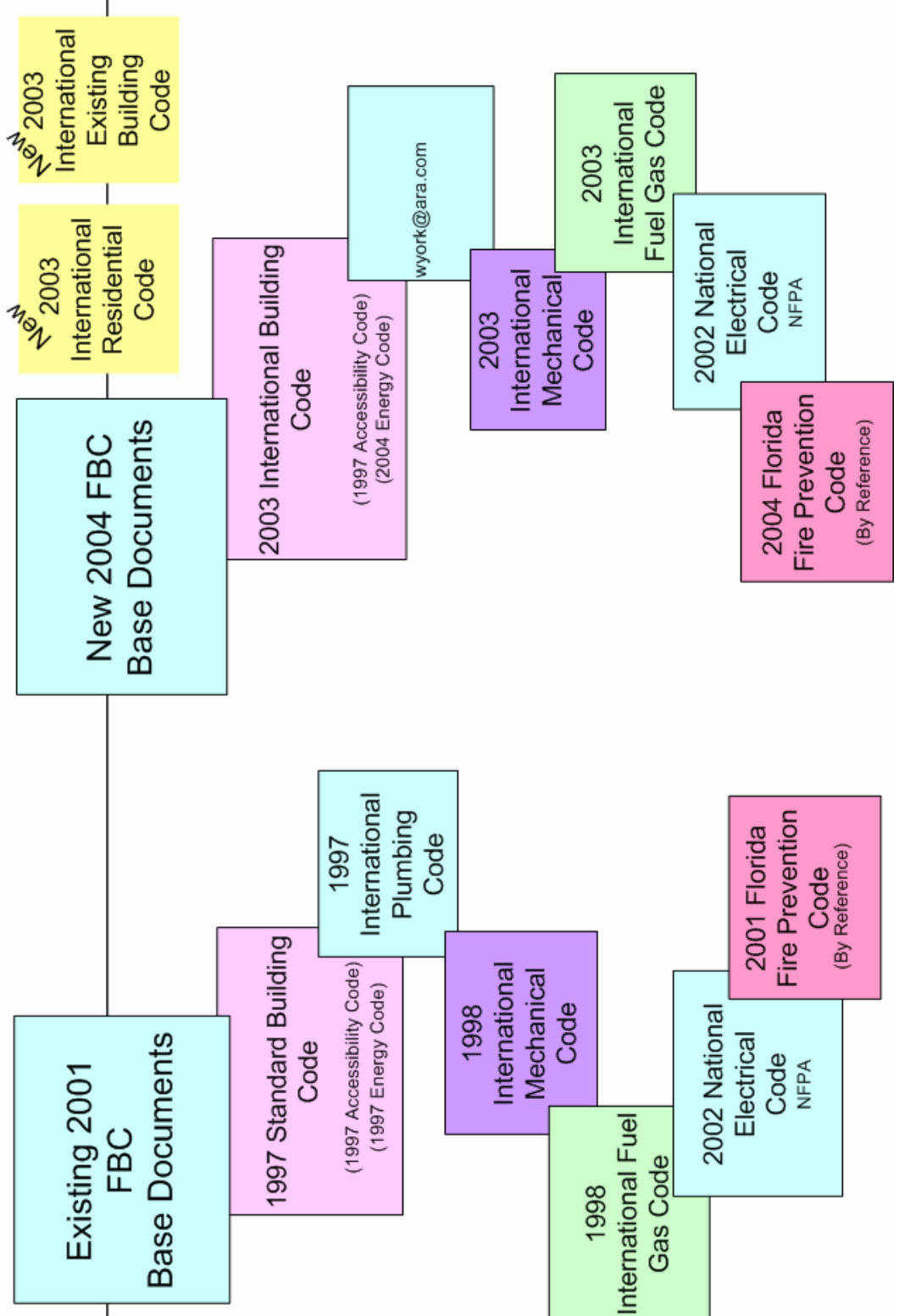
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# Florida Building Code Comparison 2001 to the 2004



# SUMMARY OF RESIDENTIAL CODE

## GENERAL PROVISIONS

### 2004 Florida Building Code

The base document for the *Florida Building Code, Residential*, is the 2003 International Residential Code. Many Florida-specific modifications have been retained. Large portions of conventional construction requirements of the book are non-applicable to homes built where design wind speeds are 100 mph or more.

•Format is similar to 1998 One- and Two-Family Dwelling Code.

- ✓ Building (Chapters 1 - 10)
- ✓ Energy ( Chapter 11 references Chapter 13 of the *FBC, Building*)
- ✓ Mechanical (Chapters 12-23) Extracted from *FBC, Mechanical*; Fuel Gas (Chapter 24) Extracted from *FBC, Fuel Gas*
- ✓ Plumbing (Chapters 25 - 32) Extracted from *FBC, Plumbing*; Electrical (Chapter 33)
- ✓ NFPA 70A
- ✓ Swimming Pool (Chapter 41)
- ✓ High Velocity Hurricane Zone – (Chapter 44)
- ✓ Appendices

**R101.2 Scope.** Applies to:

- ✓ the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures one- and two- family dwellings and
- ✓ multiple single-family dwellings (townhouses) not more than three stories in height with a separate means of egress and their accessory structures.
- ✓ Buildings and structures located within the High Velocity Hurricane Zone (**HVHZ**; Miami-Dade and Broward Counties) shall comply only with Sections R302 to R324, inclusive and the provisions of Chapter R44.
- ✓ Florida Existing Building Code is permitted to be used for repair, alteration, movement, addition, etc. of existing building.

**R202 and 301.2.1.4 Definitions**

- ✓ **Exposure B.** Urban and suburban areas, wooded areas, or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger. Exposure B shall be assumed unless the site meets the definition of another type exposure.
- ✓ **Exposure C.** Means (except in the High-Velocity Hurricane Zone) **that area which lies within 1,500 feet (457 mm) of the coastal construction control line, or within 1,500 feet (457 mm) of the mean high tide line**, whichever is less. On barrier islands, Exposure C shall be applicable in the coastal building zone set forth in Section 161.55(4), *Florida Statutes*.
- ✓ **Wind-borne debris region** Areas within one mile of the coastal mean high water line where the basic wind speed is 110 mph or greater
  - Areas where the basic wind speed is 120 mph or greater except from the eastern border of Franklin County to the Florida-Alabama line where the region includes areas only within one mile of the coast.

### **R301 Design Criteria**

**301.1.1 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 therein. **Where engineered design is used in** conjunction with these standards the design shall comply with the *Florida Building Code, Building*.

- ✓ American Forest and Paper Association (AF&PA) *Wood Frame Construction Manual* (WFCM). **85-150 mph** American Iron and Steel Institute (AISI), *Standard for Cold-Formed Steel Framing – Prescriptive Method for One- and Two-Family Dwellings* (COFS/PM). Up to 130 mph. **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.**

- ✓ Structural elements exceeding the limits of Section R301 or otherwise, not conforming to this code, shall be designed in accordance with accepted engineering practice.
- ✓ The extent of such design need only demonstrate compliance of non-conventional elements with other applicable provisions and shall be compatible with the performance of the conventional framed system.
- ✓ Structural engineered design in accordance with the *Florida Building Code* is permitted for all buildings and structures, and parts thereof.

### **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** (177.1 km/h) shall 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*
  4. Concrete construction shall be designed in accordance with the provisions of this code.
  5. SBCCI SSTD 10 for wind speeds 130 mph or less in Exposure B (110 in Exp. C)
  6. FC&PA *Guide to Concrete Masonry Residential Construction in High Wind Areas*
  7. WPPC *Guide to Wood Construction in High Wind Areas* may be used for woodframe for basic wind speeds of >130 mph in Exposure B (110 mph in Exp. C)
- ✓ **Foundation design**
  - Alternatives 1, 3, 6, and 7 provide no foundation design.
  - Alternative 5, SSTD 10, provides for foundation design.
- ✓ **Wind speed maps** provided on the [www.floridabuilding.org](http://www.floridabuilding.org) web site were developed to provide **local landmarks for wind contour lines** based on Figure R301.2(4). Some of the county maps provide information that is outside the parameters of Section R301.2.1.5.

For this reason, there is **no assurance that the information on the maps, including wind speeds given, is warranted**. Figure R301.2(4) remains the determining factor for code compliance.

#### **R301.2.1.2 Wind-borne debris region requirements**

- ✓ Windows in buildings located in wind-borne debris regions shall have **glazed openings** protected from **wind-borne debris** or the building shall be designed as a **partially enclosed** building in accordance with the *Florida Building Code, Building*.
- ✓ **Wood structural panels with a minimum thickness of 7/16** inch (11.1 mm) and a maximum span of 8 feet (2438 mm) shall be permitted for opening protection in one-and two-story buildings. Panels shall be precut to cover the glazed openings with attachment hardware provided. Attachments shall be provided in accordance with **Table R301.2.1.2** or shall be designed to resist the components and cladding loads determined in accordance with the provisions of the *Florida Building Code, Building*.
- ✓ Glazed opening protection for wind-borne debris shall meet the requirements of the **Large Missile Test of ASTM E 1996 and of ASTM E 1886, SSTD 12, or TAS 201, 202 and 203** as referenced by the code.
- ✓ 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.
- ✓ **Storage sheds** that are not designed for human habitation and that have a floor area of 720 square feet or less are not required to comply with the mandatory windborne debris impact standards of this code.

#### **R302.1 Exterior Walls.**

- ✓ 1 hour fire resistance from both sides is required when the fire separation distance (fsd) is less than 6 feet. Projections shall not extend to a point closer than 2 feet from the line used to determine the fsd.
  - **Exception:** Detached garages accessory to a dwelling locate within 2 feet of a lot line may have roof eave projections not exceeding 4 inches.

#### **R302.2 Openings.**

- ✓ No opening shall be permitted if exterior wall where fire separation distance (fsd) is less than 3 feet. This distance shall be measured perpendicular to the line used to determine the fsd.
  - Exceptions:** 1. Openings shall be permitted in walls that are perpendicular to the line.
  - 2. Foundation vents installed in compliance with this code are permitted.

#### **R302.3 Penetrations.**

- ✓ Penetrations located in the exterior wall of a dwelling with a fire separation distance less than 3 feet shall be protected in accordance with Section R317.3.
  - Exception:** Penetrations shall be permitted in walls that are perpendicular to the line used to determine the fire separation distance.

#### **R303.1 Habitable rooms [Light, ventilation, heating].**

- ✓ Glazing of not less than 8% of floor area. (through windows, doors, louvers or other approved openings to the outside). Openable area of not less than 4% of floor area for ventilation.
  - Exceptions:**

- 1. Mechanical ventilation at a rate of 0.35 air changes per hour or whole house ventilation system providing outdoor air at a rate of 15 cfm per occupant.
- 2. Glaze area need not be provided in rooms where Exception 1 is satisfied.

**R305.1 Minimum height.**

- ✓ Habitable rooms, hallways, corridors, bathrooms, toilet rooms, laundry rooms and basements shall have a ceiling height of not less than 7 feet. The required height shall be measure from the finish floor to the lowest projection from the ceiling. Exceptions.

**R303.6 Stairway illumination**

- ✓ **Interior stairways** shall be provided with an artificial light source located in the immediate vicinity of each landing of the stairway. For interior stairs the artificial light sources shall be capable of illuminating treads and landings to levels not less than 1 footcandles (11 lux) measured at the center of treads and landings.
- ✓ **Exterior stairways** shall be provided with an artificial light source located in the immediate vicinity of the top landing of the stairway. Exterior stairways providing access to a basement from the outside grade level shall be provided with an artificial light source located in the immediate vicinity of the bottom landing of the stairway.  
**Exception:** An artificial light source is not required at the top and bottom landing, provided an artificial light source is located directly over each stairway section.

**R309.2 Separation required [garages & carports].**

- ✓ The garage shall be separated from the residence and its attic area by not less than ½-inch gypsum board applied to the garage side.
- ✓ Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8-inch Type X gypsum board or equivalent.
- ✓ Where the separation is a floor-ceiling assembly, the structure supporting the separation shall also be protected by not less than ½-inch gypsum board or equivalent.

**R310.1 Emergency escape and rescue required.**

- ✓ Basements with habitable space and every sleeping room shall have at least one openable emergency escape and rescue opening. The emergency escape and rescue opening shall be permitted to open into a screen enclosure, open to the atmosphere, where a screen door is provided leading away from the residence.
- ✓ Measurements: Sill height of 44 inches; Area: 5.7 square feet (exception grade floor openings 5.0 square feet); Opening height: 24 inches; Opening width: 20 inches

**R310.4 Bars, grills, covers and screens.**

- ✓ The temporary installation or closure of storm shutters, panels, and other approved hurricane protection devices is permitted during the threat of a storm.
- ✓ Such devices shall not be required to comply with the operational constraints of this section. While such protection is provided, at least one means of escape from the dwelling or dwelling unit shall be provided. The means of escape shall be within the first floor of the dwelling or dwelling unit and shall not be located within a garage.
- ✓ Occupants in any part of the dwelling or dwelling unit shall be able to access the means of escape without passing through a lockable door not under their control.

## **R311 Means of egress**

### **R311.4 Doors**

- ✓ **R311.4.1 Exit Door Required.** At least one door from all portions of the habitable portions of the dwelling to the exterior shall be provided.
- ✓ **R311.4.2 Door Type and Size.** Required exit door shall be a side-hinged door not less than 3 feet in width and 6 feet 8 inches in height.

### **R311.4.3 Landings**

- ✓ There shall be a floor or landing on each side of each exterior door.
- ✓ A landing is not required on the exterior side of a door where the stairway is < 2 risers on the exterior side.

### **R311.5 Stairway**

- ✓ Stairways: Maximum rise – 7 ¾ inches;
- ✓ Minimum tread depth exclusive of nosing -- 9 inches. Treads and risers permitted to be proportioned so the sum of two risers and a tread, exclusive of projection of nosing is > 24” and < 25”

## **R313 •Smoke alarms**

- ✓ Must be *interconnected, hard-wired, provided with battery back-up in* accordance with NFPA 72 and located as follows:
  - In each sleeping room,
  - Outside each separate sleeping area in the immediate vicinity of the bedrooms,
  - On each story of the dwelling, including the basement.
  - On each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

## **314 Foam plastics**

- ✓ Foam plastic, except where otherwise noted, shall be separated from the interior of a building by minimum ½-inch (12.7 mm) gypsum board or an approved finish material equivalent to a thermal barrier to limit the average temperature rise of the unexposed surface to no more than 250°F (121°C) after 15 minutes of fire exposure to the ASTM E119 standard time temperature curve. Within attics and crawlspaces where entry is made only for service of utilities, foam plastics shall be protected against ignition by 1½-inch thick (38 mm) mineral fiber insulation, ¼-inch-thick (6.4 mm) wood structural panels, 3/8-inch (9.5 mm) particleboard, ¼-inch (6.4 mm) hardboard, 3/8-inch (9.5 mm) gypsum board, or corrosion-resistant steel having a base metal thickness of 0.016 inch (0.406 mm). Foam plastics may be used without the thermal barrier described in Section R314.1 when the foam plastic is protected by a minimum 1-inch (25.4 mm) thickness of masonry or concrete.

## **R317.2 Townhouse.**

- ✓ Individual exterior walls meeting the requirements of R302 (1 hour) or a common 2-hour fire-rated wall *with zero clearance from property lines.*

## **R320.1 Termite protection**

- ✓ Shall be provided by registered termiticides, including soil applied pesticides, baiting systems, and pesticides applied to wood, or other approved methods of termite



protection labeled for use as a preventative treatment to new construction. See Section 202, REGISTERED TERMITICIDE. 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.”

### **R703 Exterior Covering**

- ✓ All exterior finishes shall be applied in accordance with the manufacturer’s specifications or installation instructions.
- ✓ Where stucco is applied to lath over frame construction, take measures to prevent bonding between cement plaster and water resistive barrier. Provide a bond break between water resistive barrier and stucco by:
  - Two layers of approved water resistant barrier material or
  - One layer of approved water resistant barrier over approved plastic house wrap or
  - Other approved methods or material applied in accordance with the manufacturer’s installation instructions.
- ✓ R703.11 Weather protection. Exterior walls shall provide weather protection for the building. See nominal thickness of materials specified in Table R703.11.R703.12 Drained assembly (wood frame or other) walls above mass assembly walls shall have flashing or other approved drainage system..

**R806.4 (R4409.13.3.2.5) Conditioned attic assemblies.** As an alternative to conventional vented attics, unvented conditioned attic assemblies are permitted under the following conditions:

- ✓ No interior vapor retarders are installed on the ceiling side of the unvented attic assembly
- ✓ An air-impermeable (per ASTM E 283) insulation is applied in direct contact to the underside/interior of the structural roof deck
- ✓ Shingles are to be installed as follows:
  - Asphalt roofing shingles: a 1-perm vapor retarder placed on exterior of the structural roof deck (above roof structural sheathing).
  - Wood shingles and shakes: a minimum continuous ¼” vented air space separates the shingles/shakes and the roofing felt placed over the structural sheathing.

*See code change lists for Energy, Mechanical, Fuel Gas, and Plumbing for more details on these subcodes.*

# SUMMARY OF PLUMBING CODE CHANGES 2004

The base document for the *Florida Building Code, Plumbing*, has been updated to the 2003 *International Plumbing Code*.

**307.4 Alteration to trusses.** No alteration to truss members and components without written concurrence and approval of a registered design professional.

**312.1.1 Test gauges.**

- ✓ Added requirements for test gauges.

**314 Condensate disposal**

- ✓ Added requirements for condensate disposal—identical to *Florida Building Code, Mechanical Section 307 (Condensate Disposal)*

**316.1 General.**

- ✓ Irrigation/sprinkler systems and risers for spray heads shall not be installed within 1 foot (305 mm) of the building sidewall.

**403.7 Unisex toilet & bathing rooms.**

- ✓ Fixtures located within unisex toilet and bathing rooms shall be included in determining the number of fixtures provided in an occupancy.

**406 Automatic clothes washers**

- ✓ Requires a minimum 2" diameter trap and fixture drain for standpipe
- ✓ Requires that the fixture drain connect to a minimum 3" in diameter branch drain or drainage stack

**410.1 Approval [Drinking fountains].** Bottled water dispensers permitted to substitute for not more than 50% of the required drinking fountains

**417.3 Shower waste outlet.**

- ✓ Shower drain waste outlet reduced from 2 inches to 1-1/2 inches Liners shall be pitched one-fourth unit vertical in 12 units horizontal (2-percent slope) toward the fixture drains.

**424.3 Shower valves.**

- ✓ Master thermostatic mixing valves must comply with ASSE 1017.

**504.6.1 Discharge [water heater]**

- ✓ Relief valve allowed to discharge to water heater pan.

**603.2 Separation of water service and building sewer.**

- ✓ Allows water service pipe to be in same trench with building sewer (if using materials listed in Table 702.2)
- ✓ Required separation distance doesn't apply provided the water service pipe is sleeved to at least 5 feet (using materials listed in Tables 605.3, 702.2 or 702.3).

**605 Materials, Joints & Connections** Deleted water compatibility section, which stated that water service pipe and distribution pipe shall be resistant to corrosive and degrading action from the potable water supplied by the water purveyor or individual water supply system.

**701.9 Drainage piping in food service areas.**

- ✓ Prohibits exposed drainage piping above working, storage or eating surfaces in food service establishments.

**710.3 Underground drainage piping.**

- ✓ This section was in the 2001 FBC, P and has been deleted thereby removing the requirement for minimum 2-inch drains underground

**912.1 Type of fixtures.**

- ✓ No food waste grinders, clinical sinks or standpipes permitted on combination drain and vent systems.

**1003 Grease interceptors & separators.** Adds requirement for a solids interceptor to separate the discharge before connecting to the grease trap

- ✓ Adds ASME A112.14.3 or ASME A112.14.4 to grease trap standards
- ✓ Maximum volume for grease interceptors is 1250 gallons.
- ✓ Interceptors shall be constructed in accordance with Rule 64E-6, Florida Administrative Code.
- ✓ Inlet piping shall connect to a tee sweep or baffle that extends 24 inches below the water level.

**Table 1106.7 Sizing Scuppers**

- ✓ Sizes provided for a 5" per hour rate of rainfall

**PLUMBING PROVISIONS OF THE NEW FLORIDA BUILDING CODE,  
RESIDENTIAL**

Most provisions correlate to the *Florida Building Code, Plumbing*

**P2709.2 [Shower receptors] Lining required.**

- ✓ Lining material shall extend not less than 3 inches beyond or around the rough jambs and not less than 3 inches above finished thresholds.

**P2904 Materials, joints and connections.**

- ✓ No limit on hot water distances like in 2004 *Florida Building Code, Plumbing*

# SUMMARY OF MECHANICAL CODE CHANGES

## 2004

The base document for the *Florida Building Code, Mechanical* has been updated to the *2003 International Mechanical Code*.

### **302.3 Cutting, notching, and boring in wood framing.**

- ✓ **302.3.4** Prohibited in Engineered wood products.
- ✓ **302.4** Adding loads to trusses not permitted without verifying truss can support such load.
- ✓ **302.5** New criteria for steel framing.

### **306.5 Equipment and appliances on roofs or elevated structures.**

- ✓ Permanent ladders providing required access shall have: side rail > 30"; rung spacing < 14" on center; toe spacing > 6" deep; min. 18" between rails; rungs > .75" diameter & support 300 lb. Load; if > 30' high, have landings; be protected against corrosion

### **307.2.2 Drainpipe materials and sizes**

- ✓ Added exception: On wall mounted ductless split units less than 36,001 Btu/h where the drain line is less than 10 feet in length the factory drain outlet size shall be acceptable from the equipment to the place of disposal

### **502.5 Valve-regulated lead-acid batteries.**

- ✓ Added requirements/limits per room/cabinet for hydrogen & ventilation rate (from the fire code)

### **504.6 Domestic clothes dryer ducts.**

- ✓ Added Exception – booster fan in accordance with manufacturer's installation instructions allowed, must have label stating booster fan in remote location.

### **507.13 Capacity of hoods**

- ✓ Formulas deleted and replaced with CFM/ linear foot of hood.

### **513 Smoke Control Systems (Completely revised)**

- ✓ **513.2** Design in accordance w/S.909 FBC-B and generally accepted & well-established principles of engineering

### **602.2.1 Materials exposed within plenums.**

- ✓ Added exception #5: Combustible materials enclosed in approved gypsum board assemblies or enclosed in materials listed and labeled for such application.

### **603.1.3 Space provided.** [around components forming part of air distribution system]

- ✓ Adds exception: Retrofit or replacement units not part of a renovation are exempt from the minimum clearance requirement.

### **603.4.2 Fibrous Glass Duct, Rigid**

- ✓ **Mechanical fastening.** Attachments of ductwork to air-handling equipment shall be by mechanical fasteners. Where access is limited, two fasteners on one side shall be acceptable when installed in accordance with Section M603.1.6.

### **Sections 701 thru 708**

- ✓ Replaced with Sections 304.1 – 304.12 of 2003 International Fuel Gas Code for consistency

### **707.1 Louvers and Grilles**

- ✓ Where the design & free area of louvers and grilles are not known, assume wood louvers will have 25% free area and metal louvers and grilles will have 75% free area;
- ✓ Screens shall have a mesh size no smaller than ¼”
- ✓ Nonmotorized louvers/grilles to be fixed in the open position.

### **709.1 Protection from fumes and gases.**

- ✓ Where corrosive or flammable process fumes or gases present (carbon monoxide, hydrogen sulfide, ammonia, chlorine and halogenated hydrocarbons) provide means for disposal.
- ✓ Barbershops, beauty shops, and similar facilities: nondirect-vent-type appliances to be located in equipment room separated or partitioned off from other areas w/provision for combustion & dilution air from outdoors.

### **1101.8 Change in refrigerant type.**

- ✓ Refrigerant circuit containing more than 220 pounds of Group A1 or 30 pounds of any other group refrigerant shall not be changed without prior notification to the code official
- ✓ Table 1103.1 Refrigerant Classification, Amount and TLV-YWA – completely redone

## **MECHANICAL PROVISIONS OF THE NEW FLORIDA BUILDING CODE, RESIDENTIAL**

### **Most provisions correlate to the *Florida Building Code, Mechanical***

- ✓ Air handler provisions added from 2001 FBC
- ✓ Wind resistance criteria for equipment added from 2001 FBC-M
- ✓ Floodplain management deferred to local government by Title 44CFR, Sec. 59,60
- ✓ Duct system criteria added from 2001 FBC-M (and the energy code)
- ✓ Return air provisions added from 604.1 of the 2001 FBC-M
- ✓ Combustion air requirements (for fuel oil systems) same as the *International Mechanical Code*
- ✓ Clothes dryer provisions have exception for booster fan in accordance with manufacturer's installation instructions allowed, must have label stating booster fan in remote location.

# SUMMARY OF ENERGY CODE CHANGES 2004

The base document for Subchapter 4 (section 400, commercial building provisions) of Chapter 13 of the *Florida Building Code, Building*, has been updated to ASHRAE *STANDARD 90.1-2001*. Changes to Subchapter 6 (section 600, residential provisions) of Chapter 13 are minor.

## **400.0.A Method A, the Whole Building Performance Method.**

- ✓ Fully flexible, includes cases where vertical fenestration exceeds 50%
- ✓ Full trade-off allowed based on *energy costs*
- ✓ Envisioned for complex buildings
- ✓ EnergyGauge Fla/Com program utilized; ASHRAE rules included in program
- ✓ This is the ASHRAE Building Envelope Tradeoff Method: the *envelope performance factor* of the proposed building must be less than the *envelope performance factor* of the budget building
- ✓ Schedules for HVAC, lighting & equipment power, and occupant density are the same for proposed & budget building.
- ✓ Envisioned for complex buildings and shell buildings
- ✓ EnergyGauge Fla/Com program utilized

## **400.0.C Method C, the Buildings Prescriptive Envelope Method.**

- ✓ Method C is **completely revised** to the prescriptive method of ASHRAE 90.1-01.
- ✓ Requirements are listed on Form 400C for the appropriate climate zone.
- ✓ May be either nonresidential or residential >3 stories.
- ✓ Conditioned space or unconditioned space requirements.
- ✓ Extensive use of tables in Appendix B.
- ✓ Used provided that:
  - The vertical fenestration area does not exceed 50% of the gross wall area for each space-conditioning category and
  - The skylight fenestration area does not exceed 5% of the gross roof area for each space-conditioning category. Requirements are specified for the exterior building envelope, which separates conditioned space from the exterior.

**Method D, Renovations and Systems Prescriptive Method Deleted.** Existing buildings can use Method C for components changed.

## **407.1.ABC.3.5 Exhaust Air Energy Recovery for Cooling Systems.**

- ✓ Individual fan systems that have both a design supply air capacity of 5000 cfm or greater and have a minimum outside air supply of 70% or greater of the design supply air quantity shall have an energy recovery system with at least 50% recovery effectiveness. Enthalpy (heat content of air) reduced to 50% of difference between outdoor air & return air at design conditions. Exceptions provided

#### **409.1.ABC.3.5 Ventilation Controls for High-Occupancy Areas.**

- ✓ Outside air capacities greater than 3000 cfm serving areas having an average design occupancy density exceeding 100 people per 1000 ft<sup>2</sup> shall include means to automatically reduce outside air intake below design rates when spaces are partially occupied.

#### **415 LIGHTING SYSTEMS**

- ✓ Lighting power densities updated to include Addenda g to ASHRAE 90.1-01
- ✓ No more lighting control credits or control points
- ✓ Programmable controls & lighting sensors encouraged
- ✓ Hotel/motel rooms require one master control
- ✓ Building area option or space-by-space options available
- ✓ Mandatory provision for tandem wired ballasts where 1 or 3 linear fluorescent lamps greater than 30 W are in the same space & on the same control device (with exceptions)
- ✓ Most exterior power requirements were replaced with minimum efficacy requirements; exception for motion sensors
- ✓ Exit signs operating at >20 W must have source efficacy > 35 lumens/W

#### **410.1.ABC.3, 610.1.ABC.3.0.3 Space provided.** [around air distribution system components]

- ✓ Adds exception: Retrofit or replacement units not part of a renovation are exempt from the minimum clearance requirement.

#### **410.1.ABC.3, 610.1.ABC.3.2.2 Fibrous Glass Duct, Rigid**

- ✓ **Mechanical fastening.** Attachments of ductwork to air-handling equipment shall be by mechanical fasteners. Where access is limited, two fasteners on one side shall be acceptable when installed in accordance with Section M603.1.6.

#### **610.1.B.2 Air handler location.**

- ✓ Buildings complying with this code by Compliance Method B shall *not* have air handlers installed in attics.

#### **610.2.A.3 Airtight Duct Credit.**

- ✓ An airtight Duct Credit Multiplier of 1.0 may be taken if the duct work has been demonstrated to be '*substantially leak free*' in accordance with the provisions of Section 610.1.A.1. Definition revised.

### **ENERGY PROVISIONS OF THE NEW FLORIDA BUILDING CODE, RESIDENTIAL**

**Section 1101 of the Residential code simply references the provisions of Chapter 13 of the *Florida Building Code, Building*.**

# SUMMARY OF FUEL GAS CODE CHANGES

## 2004

The base document for the *Florida Building Code, Fuel Gas*, has been updated to the 2003 *International Fuel Gas Code*.

### 301.7 Fuel types.

- ✓ Allows serving gas supplier to convert gas equipment to a different gas.

### 304.1 General.

- ✓ Requirements for air for combustion, ventilation and dilution of flue gases for gas utilization equipment installed in buildings (refer to sections 304.5 – 304.9 or 304.6 – 304.9)
- ✓ Direct-vent appliances, gas appliances of other than natural draft design, etc. shall be in accordance with equipment manufacturer's instructions

### 304 Combustion, ventilation and dilution air.

- ✓ **Indoor combustion air:** Use 304.5.1 or 304.5.2 unless ACH is less than 0.40; then use 304.5.2 to determine required volume of indoor air. Use 304.5.3.1 and 304.5.3.2 to size and locate openings used to connect indoor spaces. **Outdoor** combustion air shall be provided through opening(s) to the outdoors in accordance with Section 304.6.1 or 304.6.2. The minimum dimension of air openings shall be not less than 3 inches (76 mm).
- ✓ **Combination indoor and outdoor combustion air.**
  - Use 304.7.1 through 304.7.3 when using a combination of indoor and outdoor combustion air.
- ✓ **Mechanical combustion air supply.**
  - Where all combustion air is provided by a mechanical air supply system, the combustion air shall be supplied at a rate not less than 0.35 cu ft/min per 1000 Btu/h of total input rating of all appliances in the space.

### 304.10 Louvers and grilles.

- ✓ Added screens; assume wood louvers will have 25% free area and metal louvers and grilles will have 75% free area; screens shall have a mesh size no smaller than ¼ inch. A means shall be provided to prevent main burner from igniting if the louvers fail to open during burner start-up and to shut down the main burner if the louvers close during operation.

### 402.2 Maximum gas demand

- ✓ Where an input rating is not indicated, the gas supplier, equipment manufacturer or a qualified agency are contacted...or the rating from Table 402.2 shall be used for estimating the volume of gas to be supplied.

### 404.7 Above-ground outdoor piping.

- ✓ All outdoor piping shall be elevated not less than 3-1/2 inches above ground and, where installed across roof surfaces, shall be elevated not less than 3-1/2 inches above the roof surface.



#### **409 Shutoff Valves**

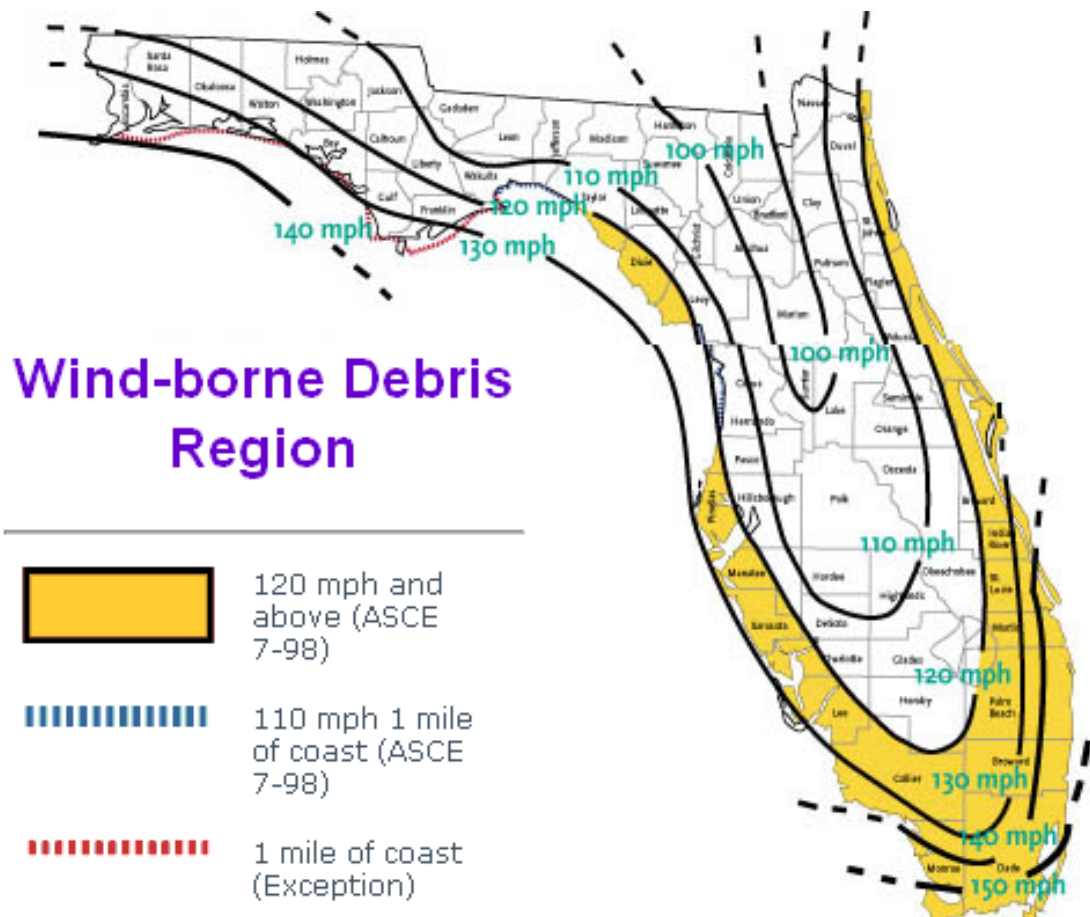
- ✓ Shutoff valves for vented decorative appliances and decorative appliances can be placed in remote areas
- ✓ Equipment shutoff valves located in the firebox of a fireplace shall be installed in accordance with the appliance manufacturer's instructions.

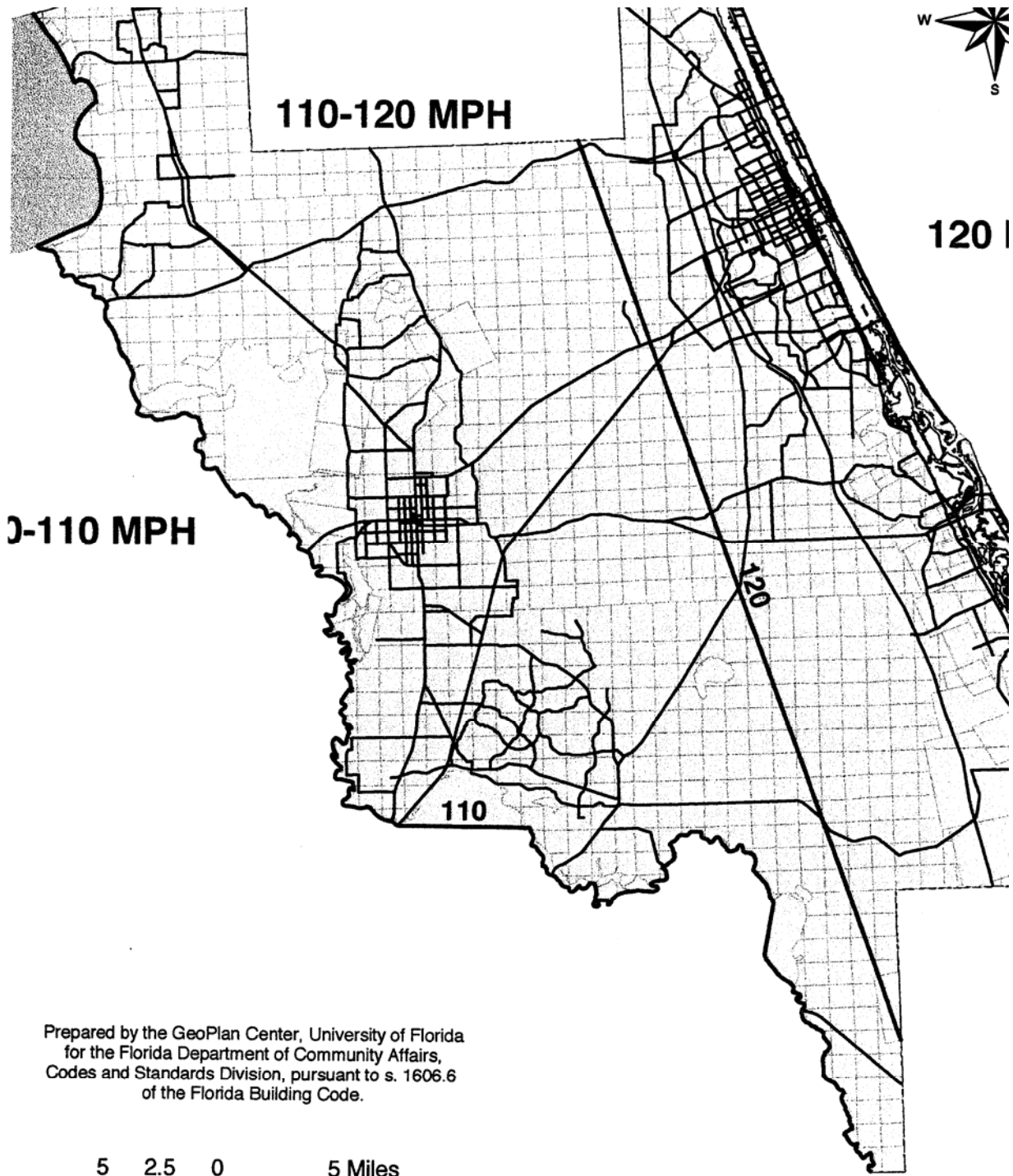
#### **411.1.4 Outdoor appliance connectors.**

- ✓ This section provides installation requirements for installing outdoor gas appliances and is consistent with the National Fuel Gas Code.
- ✓ Note that lengths shall not exceed 12 feet (3658 mm) and the connection shall only be made in the outdoor area where the equipment is to be used.

#### **FUEL GAS PROVISIONS OF THE NEW FLORIDA BUILDING CODE, RESIDENTIAL**

Most provisions correlate to the *Florida Building Code, Fuel Gas*, although they don't carry the same degree of detail as does the *FBC-FG*.





Prepared by the GeoPlan Center, University of Florida  
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