



BROWARD COUNTY BOARD OF RULES AND APPEALS

March 29, 2012

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Local Technical Amendment County of Broward

Code Version: 2010 Florida Building Code
Sub Code: Plumbing
Chapter & Topic: Chapter 3
Section: Section 314 – Condensate Disposal
[M] 314.2.1
Short Description: Modifications to Condensate Disposal
Effective Date: 6/01/2012
**Number of paragraphs
with changes:** 2

Reviewed and Legally Adopted: 3/15/2012

310.4 Water closet compartment. Each water closet utilized by the *public* or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.

Exceptions:

1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door.
2. Toilet rooms located in day care and child-care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.
3. This provision is not applicable to toilet areas located within Group I-3 housing areas.

310.5 Urinal partitions. Each urinal utilized by the *public* or employees shall occupy a separate area with walls or partitions to provide privacy. The walls or partitions shall begin at a height not more than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal a minimum of 18 inches (457 mm) or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished back wall surface, whichever is greater.

Exceptions:

1. Urinal partitions shall not be required in a single occupant or family/assisted-use toilet room with a lockable door.
2. Toilet rooms located in day-care and child-care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.

SECTION 311

TOILET FACILITIES FOR WORKERS

311.1 General. Toilet facilities shall be provided for construction workers and such facilities shall be maintained in a sanitary condition. Construction worker toilet facilities of the nonsewer type shall conform to ANSI Z4.3.

SECTION 312

TESTS AND INSPECTIONS

312.1 Required tests. The permit holder shall make the applicable tests prescribed in Sections 312.2 through 312.10 to determine compliance with the provisions of this code. The permit holder shall give reasonable advance notice to the code official when the plumbing work is ready for tests. The equipment, material, power and labor necessary for the inspection and test shall be furnished by the permit holder and the permit holder shall be responsible for determining that the work will withstand the test pressure prescribed in the following tests. All plumbing system piping shall be tested with either water or, for piping systems other than plastic, by air. After the plumbing fixtures have been set and their traps filled with water, the entire drainage system shall be submitted to final tests. The code official shall require the removal of any cleanouts if necessary to

ascertain whether the pressure has reached all parts of the system.

312.1.1 Test gauges. Gauges used for testing shall be as follows:

1. Tests requiring a pressure of 10 pounds per square inch (psi) (69 kPa) or less shall utilize a testing gauge having increments of 0.10 psi (0.69 kPa) or less.
2. Tests requiring a pressure of greater than 10 psi (69 kPa) but less than or equal to 100 psi (689 kPa) shall utilize a testing gauge having increments of 1 psi (6.9 kPa) or less.
3. Tests requiring a pressure of greater than 100 psi (689 kPa) shall utilize a testing gauge having increments of 2 psi (14 kPa) or less.

312.2 Drainage and vent water test. A water test shall be applied to the drainage system either in its entirety or in sections. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the system shall be filled with water to point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest openings of the section under test, and each section shall be filled with water, but no section shall be tested with less than a 5-foot (1524 mm) head of water. In testing successive sections, at least the upper 5 feet (1524 mm) of the next preceding section shall be tested so that no joint or pipe in the building, except the uppermost 5 feet (1524 mm) of the system, shall have been submitted to a test of less than a 5-foot (1524 mm) head of water. The water shall be kept in the system, or in the portion under test, for at least 15 minutes before inspection starts. The system shall then be tight at all points.

312.3 Drainage and vent air test. An air test shall be made by forcing air into the system until there is a uniform gauge pressure of 5 psi (34.5 kPa) or sufficient to balance a 10-inch (254 mm) column of mercury. This pressure shall be held for a test period of at least 15 minutes. Any adjustments to the test pressure required because of changes in ambient temperature or the seating of gaskets shall be made prior to the beginning of the test period.

312.4 Drainage and vent final test. The final test of the completed drainage and vent systems shall be visual and in sufficient detail to determine compliance with the provisions of this code. Where a smoke test is utilized, it shall be made by filling all traps with water and then introducing into the entire system a pungent, thick smoke produced by one or more smoke machines. When the smoke appears at *stack* openings on the roof, the *stack* openings shall be closed and a pressure equivalent to a 1-inch water column (248.8 Pa) shall be held for a test period of not less than 15 minutes.

312.5 Water supply system test. Upon completion of a section of or the entire water supply system, the system, or portion completed, shall be tested and proved tight under a water pressure not less than the working pressure of the system; or, for piping systems other than plastic, by an air test of not less than 50 psi (344 kPa). The water utilized for tests shall be obtained from a potable source of supply. The required tests shall be performed in accordance with this section and Section 312 of this code.

312.6 Gravity sewer test. Gravity sewer tests shall consist of plugging the end of the building sewer at the point of connection with the public sewer, completely filling the building sewer with water from the lowest to the highest point thereof, and maintaining such pressure for 15 minutes. The building sewer shall be water tight at all points.

312.7 Forced sewer test. Forced sewer tests shall consist of plugging the end of the building sewer at the point of connection with the public sewer and applying a pressure of 5 psi (34.5 kPa) greater than the pump rating, and maintaining such pressure for 15 minutes.

312.8 Storm drainage system test. Storm drain systems within a building shall be tested by water or air in accordance with Section 312.2 or 312.3.

312.9 Shower liner test. Where shower floors and receptors are made water-tight by the application of materials required by Section 417.5.2, the completed liner installation shall be tested. The pipe from the shower drain shall be plugged water tight for the test. The floor and receptor area shall be filled with potable water to a depth of not less than 2 inches (51 mm) measured at the threshold. Where a threshold of at least 2 inches (51 mm) high does not exist, a temporary threshold shall be constructed to retain the test water in the lined floor or receptor area to a level not less than 2 inches (51 mm) deep measured at the threshold. The water shall be retained for a test period of not less than 15 minutes, and there shall not be evidence of leakage.

312.10 Inspection and testing of backflow prevention assemblies. Inspection and testing shall comply with Sections 312.10.1 and 312.10.2.

312.10.1 Inspections. Inspections shall be made of all backflow prevention assemblies and air gaps to determine whether they are operable.

312.10.2 Testing. Reduced pressure principle backflow preventer assemblies, double check-valve assemblies, pressure vacuum breaker assemblies, reduced pressure detector fire protection backflow prevention assemblies, double check detector fire protection backflow prevention assemblies, hose connection backflow preventers, and spill-proof vacuum breakers shall be tested at the time of installation and immediately after repairs or relocation. The testing procedure shall be performed in accordance with one of the following standards:

ASSE 5013, ASSE 5015, ASSE 5020, ASSE 5047, ASSE 5048, ASSE 5052, ASSE 5056, CSA B64.10 or CSA B64.10.1.

**SECTION 313
EQUIPMENT EFFICIENCIES**

313.1 General. Equipment efficiencies shall be in accordance with the *Florida Building Code, Energy Conservation*.

**SECTION 314
CONDENSATE DISPOSAL**

[M] 314.1 Fuel-burning appliances. Liquid combustion by-products of condensing appliances shall be collected and discharged to an approved plumbing fixture or disposal area in accordance with the manufacturer's installation instructions. Condensate piping shall be of approved corrosion-resistant material and shall not be smaller than the drain connection on the appliance. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope).

[M] 314.2 Evaporators and cooling coils. Condensate drain systems shall be provided for equipment and appliances containing evaporators or cooling coils. Condensate drain systems shall be designed, constructed and installed in accordance with Sections 314.2.1 through 314.2.5.

[M] 314.2.1 Condensate drainage collection, use or disposal. Condensate from all cooling coils and evaporators of equipment served by an on-site cooling tower in a building or structure wherein the aggregate cooling capacity of the equipment exceeds 65,000 Btu/hr shall be collected and conveyed from the drain pan outlet and discharged to the cooling tower. Where an on-site cooling tower is not installed the condensate from all cooling coils and evaporators shall be conveyed from the drain pan outlet to an approved place of disposal. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope). Condensate shall not discharge into a street, alley or other areas so as to cause a nuisance.

**TABLE [M] 314.2.2
CONDENSATE DRAIN SIZING**

EQUIPMENT CAPACITY	MINIMUM CONDENSATE PIPE DIAMETER
Up to 20 tons of refrigeration	3/4 inch
Over 20 tons to 40 tons of refrigeration	1 inch
Over 40 tons to 90 tons of refrigeration	1 1/4 inch
Over 90 tons to 125 tons of refrigeration	1 1/2 inch
Over 125 tons to 250 tons of refrigeration	2 inch

For SI: 1 inch = 25.4 mm, 1 ton of capacity = 3.517 kW.

Exceptions:

1. Condensate from cooling coils and evaporators is not required to be collected and conveyed to an on-site cooling tower, provided 1.1 through 1.3 are met:
 - 1.1 The equipment comprises 10% or less of the total capacity of the cooling tower system.
 - 1.2 The equipment is located in an isolated or remote area.
 - 1.3 The size of the equipment is 65,000 Btu/hr or less.
2. In existing buildings condensate may be collected and conveyed to a cooling tower or discharged to an approved place of disposal.

[M] 314.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be cast iron, galvanized steel, copper, cross-linked polyethylene, polybutylene, polyethylene, ABS, CPVC or PVC pipe or tubing. All components shall be selected for the pressure and temperature rating of the installation. Joints and connections shall be made in accordance with the applicable provisions of Chapter 7 relative to the material type. Condensate waste and drain line size shall be not less than 3/4-inch (19 mm) internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal. Where the drain pipes from more than one unit are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with Table 314.2.2.

Exception: On wall mounted ductless split units less than 36,001 Btu/h where the drain line is less than 10 feet (3048 mm) in length, the factory drain outlet size shall be acceptable from the equipment to the place of disposal.

[M] 314.2.3 Auxiliary and secondary drain systems. In addition to the requirements of Section 314.2.1, where damage to any building components could occur as a result of overflow from the equipment primary condensate removal system, one of the following auxiliary protection methods shall be provided for each cooling coil or fuel-fired appliance that produces condensate:

1. An auxiliary drain pan with a separate drain shall be provided under the coils on which condensation will occur. The auxiliary pan drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The pan shall have a minimum depth of 1½ inches (38 mm), shall not be less than 3 inches (76 mm) larger than the unit or the coil dimensions in width and length and shall be constructed of corrosion-resistant material. Galvanized sheet metal pans shall have a minimum thickness of not less than 0.0236-inch (0.6010 mm) (No. 24 gage) galvanized sheet metal. Nonmetallic pans shall have a minimum thickness of not less than 0.0625 inch (1.6 mm).

2. A separate overflow drain line shall be connected to the drain pan provided with the equipment. Such overflow drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The overflow drain line shall connect to the drain pan at a higher level than the primary drain connection.
3. An auxiliary drain pan without a separate drain line shall be provided under the coils on which condensate will occur. Such pan shall be equipped with a water-level detection device conforming to UL 508 that will shut off the equipment served prior to overflow of the pan. The auxiliary drain pan shall be constructed in accordance with Item 1 of this section.
4. Reserved.

[M] 314.2.3.1 Water-level monitoring devices. On down-flow units and all other coils that do not have a secondary drain or provisions to install a secondary or auxiliary drain pan, a water-level monitoring device shall be installed inside the primary drain pan. This device shall shut off the equipment served in the event that the primary drain becomes restricted. Devices installed in the drain line shall not be permitted.

[M] 314.2.3.2 Appliance, equipment and insulation in pans. Where appliances, equipment or insulation are subject to water damage when auxiliary drain pans fill such portions of the appliances, equipment and insulation shall be installed above the *flood level rim* of the pan. Supports located inside of the pan to support the appliance or equipment shall be water resistant and *approved*.

[M] 314.2.4 Traps. Condensate drains shall be trapped as required by the equipment or appliance manufacturer.

314.2.5 Pipe insulation. All horizontal primary condensate drains within unconditioned areas shall be insulated to prevent condensation from forming on the exterior of the drain pipe.

SECTION 315 PUBLIC FOOD SERVICE ESTABLISHMENTS AND FOOD ESTABLISHMENTS.

315.1 Requirements. Public food service establishments and food establishments, as defined in Chapter 381 Florida Statutes, Chapter 500 Florida Statutes and Chapter 509 Florida Statutes, shall comply with the applicable code requirements found in the *Florida Building Code, Building*, Chapter 4, Special Occupancy.

SECTION 316 IRRIGATION

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



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Broward County Local Amendments
Proposed Modification to the Florida Building Code

Per Section 553.73, Fla Stat

Name: Broward County Board of Rules & Appeals, Attention: James DiPietro, ADMINISTRATIVE DIRECTOR
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Code: 2010 Florida Building Code – Mechanical and Plumbing
Section #: Plumbing Section [M] 314.2.1 and
Mechanical Section 307.2.1

Text of Modification (additions underlined; deletion ~~stricken~~):
Please see attachment.

Respond to the following questions:

1. How is the local amendment more stringent than the minimum standards described in the FBC?
REQUIRES THE COLLECTION OF CONDENSATE FROM ALL COOLING COILS AND EVAPORATORS OF EQUIPMENT SERVICED BY ON SITE COOLING TOWER IN A BUILDING OR STRUCTURE WHEREIN THE AGGREGATE COOLING CAPACITY OF THE EQUIPMENT EXCEEDS 65,000 BTU/HR
2. Demonstrate or provide evidence or data that the geographical jurisdiction governed by the local governing body exhibits a local need to strengthen the FBC beyond the needs or regional variation addressed by the FBC.
BY FAR, THE MOST IMPORTANT DEMOGRAPHIC TREND AFFECTING WATER RESOURCES IS POPULATION GROWTH. SIGNIFICANT POPULATION GROWTH IS ANTICIPATED. ACCORDING TO THE MOST RECENT POPULATION PROJECTIONS, THE COUNTY IS PROJECTING A 13% INCREASE IN POPULATION TO NEARLY 2 MILLION RESIDENTS BY 2040. THIS ASSUMES POPULATION GROWTH RATES REMAIN MODERATED BY THE ECONOMIC DOWN TURN. HOWEVER, IN A COUNTY WITH THE 12TH LARGEST POPULATION IN THE UNITED STATES, EVEN A MODERATE GROWTH RATE TRANSLATES INTO A SUBSTANTIAL INCREASE IN WATER DEMAND. IN 2010, BROWARD COUNTY PUMPED APPROXIMATELY 233 MILLION GALLONS PER DAY (MGD) FROM THE BISCAYNE AQUIFER. HOWEVER, IN ACCORDANCE WITH THE REGIONAL WATER AVAILABILITY RULE, INCREASES IN WATER DEMAND MUST BE MET THROUGH ALTERNATIVE WATER SUPPLIES. BROWARD COUNTY HAS TO MAKEUP THE DIFFERENCE INCLUDING A PROJECTED INCREASE OF 22 MGD BY 2040 FROM THE FLORIDIAN AQUIFER OR OTHER WATER SUPPLIES (SUCH AS RECLAIMED WATER) WHICH REQUIRE MUCH HIGHER LEVELS OF TREATMENT BY REVERSE OSMOSIS AND/OR MEMBRANE FILTRATION, BOTH OF WHICH WILL REQUIRED NEW CAPITAL INVESTMENTS AND ENERGY INTENSIVE PROCESSES. IT HAS BEEN REPEATEDLY RECOGNIZED BY BROWARD WATER PROVIDERS AND ELECTED LEADERS THAT WATER CONSERVATION OFFER THE MOST COST EFFECTIVE AND IMMEDIATE MEANS TO MEET NEW WATER DEMANDS. WITHOUT EFFECTIVE WATER CONSERVATION BROWARD COUNTY'S CONTINUED GROWTH WILL BE DEPENDENT ON OUR ABILITY TO DEVELOP MORE COSTLY ALTERNATIVE WATER SUPPLIES.
FLORIDA STATE STATUTES, SECTION 373.016(S), RECOGNIZES THAT THE WATER RESOURCE PROBLEMS OF THE STATE VARY FROM REGION TO REGION, BOTH IN MAGNITUDE AND COMPLEXITY. SPECIFICALLY, IN BROWARD COUNTY, THE



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LIMITATIONS OF OUR AQUIFER, THE AMOUNT OF WATER THE STATE ALLOWS US TO WITHDRAW, THE INTRUSION OF SALT WATER INTO THE AQUIFER, AND THE INCREASED FUTURE DEMANDS THAT ARE PROJECTED ESTABLISH AND REINFORCE THE ISSUE OF REGIONAL VARIATION.

THE CONTINUED DISPOSAL OF CONDENSATE INTO THE STORM WATER DRAINAGE SYSTEMS OR PERVIOUS GRADE IS IRRECONCILABLE WITH THE VITAL ROLE CONDENSATE COLLECTION AND USE CAN PLAY IN EASING THE DEMANDS ON OUR INCREASINGLY BURDENED POTABLE WATER RESOURCES. MOREOVER, IT IS INCONSISTENT WITH FLORIDA STATUTE 373.227 WHICH CAUTIONS, "THE LEGISLATURE RECOGNIZES THAT THE PROPER CONSERVATION OF WATER IS AN IMPORTANT MEANS OF ACHIEVING THE ECONOMICAL AND EFFICIENT UTILIZATION OF WATER NECESSARY, IN PART, TO CONSTITUTE A REASONABLE—BENEFICIAL USE. THE OVERALL WATER CONSERVATION GOAL OF THE STATE IS TO PREVENT AND REDUCE WASTEFUL, UNECONOMICAL, IMPRACTICAL, OR UNREASONABLE USE OF WATER RESOURCES."

3. Explain how the local need is addressed by the proposed local amendment.

THIS MODIFICATION WILL REQUIRE LESS WATER USAGE FROM THE AQUIFERS.

4. Explain how the local amendment is no more stringent than necessary to address the local need.

THE LOCAL NEED FOR WATER CONSERVATION IS VERY SERIOUS AND IS MANDATED BY THE BROWARD COUNTY COMMISSION AND SUPPORTED BY THE BROWARD LEAGUE OF CITIES AND THE BROWARD WATER RESOURCES TASK FORCE. THIS AMENDMENT WILL HELP ACHIEVE WATER CONSERVATION BUT CANNOT SOLVE THE PROJECTED WATER SHORTAGE PROBLEM WITHOUT OTHER LOCAL WATER CONSERVATION EFFORTS.

5. Are the additional requirements discriminatory against materials, products, or construction techniques of demonstrated capabilities?

PUBLIC MEETINGS AND A PUBLIC HEARING WERE HELD AND STAKEHOLDERS WERE INVITED TO ATTEND. AS PART OF THE COMMITTEE AND FINAL BOARD ADOPTION PROCESS, IT WAS DETERMINED THAT THE MODIFICATION WOULD NOT BE DISCRIMINATORY.

6. Indicate whether or not additional requirements introduce a new subject not already addressed in the FBC.

THIS MODIFICATION REVISES AN EXISTING SECTION OF THE FLORIDA BUILDING CODE.

7. Include a fiscal impact statement which documents the costs and benefits of the proposed amendment.

Criteria for the fiscal impact statement shall include a, b, and c:

- a) Impact to local government, relative to enforcement.
 - b) Impact to property and building owners relative to cost of compliance.
 - c) Impact to industry relative to the cost of compliance
- a) THERE IS NO FISCAL IMPACT TO BROWARD COUNTY OR THE MUNICIPALITIES.
 - b) WHEN CONSIDERING LIFECYCLES, THERE IS NO COST TO BUILDING OWNERS FOR COMPLIANCE. THE FISCAL IMPACT INVOLVES HIGHER INITIAL COSTS, WHICH VARY BASED UPON THE SIZE AND COMPLEXITY OF THE COOLING SYSTEMS. HOWEVER, THE INITIAL COSTS ARE OFFSET BY A SYSTEM PAYOFF FROM 6 MONTHS TO SIX YEARS AS REASONABLY PROJECTED.
 - c) NO FISCAL IMPACT TO INDUSTRY.

BROWARD BORA PUBLIC HEARING AND VOTE MARCH 15, 2012.

AMENDMENT EFFECTIVE DATE JUNE 1, 2012.