Local Technical Amendment  
County of Broward

Code Version: 2010 Florida Building  
Sub Code: Mechanical  
Chapter & Topic: Chapter 3 - Condensate Disposal  
Section: 307.2.1  
Short Description: Modifications to Condensate Disposal  
Effective Date: 6/01/2012  
Number of paragraphs with changes: 2  
Reviewed and Legally Adopted: 03/15/2012
306.4.1 Electrical requirements. A luminaire controlled by a switch located at the required passageway opening and a receptacle outlet shall be provided at or near the appliance location in accordance with Chapter 27 of the Florida Building Code, Building.

306.5 Equipment and appliances on roofs or elevated structures. Where equipment requiring access and appliances are installed on roofs or elevated structures at a height exceeding 16 feet (4877 mm), such access shall be provided by a permanent approved means of access, the extent of which shall be from grade or floor level to the equipment and appliances' level service space. Such access shall not require climbing over obstructions greater than 30 inches (762 mm) high or walking on roofs having a slope greater than four units vertical in 12 units horizontal (33-percent slope). Where access involves climbing over parapet walls, the height shall be measured to the top of the parapet wall.

Permanent ladders installed to provide the required access shall comply with the following minimum design criteria:

1. The side railing shall extend above the parapet or roof edge not less than 30 inches (762 mm).
2. Ladders shall have rung spacing not to exceed 14 inches (356 mm) on center.
3. Ladders shall have a toe spacing not less than 6 inches (152 mm) deep.
4. There shall be a minimum of 18 inches (457 mm) between rails.
5. Rungs shall have a minimum 0.75-inch (19 mm) diameter and be capable of withstanding a 300-pound (136.1 kg) load.
6. Ladders over 30 feet (9144 mm) in height shall be provided with offset sections and landings capable of withstanding 100 pounds per square foot (488.2 kg/m²). Landing dimensions shall be not less than 18 inches (457 mm) and not less than the width of the ladder served. A guard rail shall be provided on all open sides of the landing.
7. Ladders shall be protected against corrosion by approved means.

Catwalks installed to provide the required access shall be not less than 24 inches (610 mm) wide and shall have railings as required for service platforms.

307.1 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).

307.2 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 307.2.1 through 307.2.4.

307.2.1 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.
GENERAL REGULATIONS

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.

   outlet to an approved place of disposal. Such piping shall maintain a minimum horizontal slop 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.

307.2.2 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 of the Florida Building Code, Plumbing 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 307.2.2.

   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.

<table>
<thead>
<tr>
<th>EQUIPMENT CAPACITY</th>
<th>MINIMUM CONDENSATE PIPE DIAMETER</th>
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</thead>
<tbody>
<tr>
<td>Up to 20 tons of refrigeration</td>
<td>3/4 inch</td>
</tr>
<tr>
<td>Over 20 tons to 40 tons of refrigeration</td>
<td>1 inch</td>
</tr>
<tr>
<td>Over 40 tons to 90 tons of refrigeration</td>
<td>1 1/4 inch</td>
</tr>
<tr>
<td>Over 90 tons to 125 tons of refrigeration</td>
<td>1 1/2 inch</td>
</tr>
<tr>
<td>Over 125 tons to 250 tons of refrigeration</td>
<td>2 inch</td>
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</tbody>
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1 inch = 25.4 mm, 1 ton = 3.517 kW.

307.2.3 Auxiliary and secondary drain systems. In addition to the requirements of Section 307.2.1, 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 1 1/2 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 steel pans shall have a minimum thickness of not less than 0.0236 inch (0.6010 mm) (No. 24 gage). 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.

As an alternative to a separate drain line, a water-level detection device that will shut off the equipment served prior to overflow of the pan shall be provided. The water level detection device 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.

Exception: Fuel-fired appliances that automatically shut down operation in the event of a stoppage in the condensate drainage system.

307.2.3.1 Water-level monitoring devices. On downflow 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.

307.2.3.2 Appliance, equipment and insulation in pans. Where appliances, equipment or insulation are subject to water damage when auxiliary drain pans fill, that portion of the appliance, equipment and insulation shall be installed above the rim of the pan. Supports located inside of the pan to support the appliance or equipment shall be water resistant and approved.

307.2.4 Traps. Condensate drains shall be trapped as required by the equipment or appliance manufacturer.

307.2.5 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 308
CLEARANCE REDUCTION

308.1 Scope. This section shall govern the reduction in required clearances to combustible materials and combustible assemblies for chimneys, vents, kitchen exhaust equipment, mechanical appliances, and mechanical devices and equipment.

308.2 Listed appliances and equipment. The reduction of the required clearances to combustibles for listed and labeled
Proposed Modification to the Florida Building Code

Per Section 553.73, Fla Stat

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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

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.