



2014 Florida Building Code Advanced 5th Edition: Plumbing Summary of Significant Changes

Table of Contents

Introduction	4
Course Description 2	4
Learning Objectives 3	4
The Author 4	4
Course Overview 5, 6	5
Administration	5
FBC - Plumbing 7, 8	5
Chapter 2	6
Definitions 9, 10, 11, 12, 13	6
Chapter 3	7
General Regulations 14, 15	7
Materials 16	8
Piping Support 17, 18	8
Flood Hazard Resistance 19, 20, 21	8
Tests and Inspections 22, 23, 24	9
Chapter 4	10
Fixtures, Faucets & Fixture Fittings 25-40	10
Bathtubs 41, 42	13
Drinking Fountains 43, 44, 45	14
Showers 46	14
Shower Liner 47-50	14
Installation Cautions 51-55	16
Chapter 5	16
Water Heaters 56, 57	16
Safety Devices 58-63	17
Chapter 6	20
Water Supply & Distribution 64	20
Materials, Joints & Connections 65-68	20
Installation of the Building Water Distribution System 69-71	20
Hot Water Supply System 72-80	21
Protection of Potable Water Supply 81, 82	23
Chapter 7	24

Sanitary Drainage 83.....	24
Drainage Piping Installation 84, 85, 86	24
Fixture Units 87-90	25
Sumps and Ejectors 91-93	25
Chapter 8.....	26
Indirect/Special Waste 94-99.....	26
Chapter 9.....	27
Vents 100.....	27
Vent Terminals 101, 102.....	27
Combination Waste & Vent System 103, 104	27
Single Stack System 105, 106.....	27
Chapter 10.....	27
Traps, Interceptors and Separators 107	27
Trap Requirements 108, 109.....	27
Interceptors and Separators 110, 111.....	28
Chapter 11.....	28
Storm Drainage 112	28
Siphonic Roof Drainage Systems 113, 114.....	28
Chapter 12.....	29
Special Piping & Storage Systems 115.....	29
Chapter 13.....	29
Gray Water Recycling Systems 116, 117.....	29
Conclusion.....	29
Summary 117.....	29
Author Biography.....	30
Author Name	30

Introduction

Course Description

This will be a 1 hour course on the 2014 Florida Building Code, Plumbing. The latest edition, the 5th edition of the Florida Building Code, Plumbing, went into effect midnight, June 30, 2015. There are numerous changes in the base code, the 2012 International Plumbing code, as well as Florida specific amendments to the base code, which regulates the design, construction, testing, and operation of plumbing systems throughout the state. This course summarizes some of the significant changes in the new edition of the Florida Building Code-Plumbing, 5th Edition, 2014. This course is intended for those familiar with the code and desiring to update their knowledge base on the changes in these important regulations that affect your profession. Any designer, contractor, supplier, inspector, plans examiner, or other person involved with plumbing systems, whether they be commercial or domestic, will benefit from keeping current with the regulations governing their profession.

Learning Objectives

At the end of the course, students should be able to:

- Distinguish between plumbing fixtures and appliances that efficiently preserve the health, safety, and welfare of citizens.
- Determine whether Canadian Standards are acceptable to the work being done.
- Establish where temperature and pressure protection is required on hot water systems to protect against scalding.
- Establish whether bundled piping complies with the code.
- Recall whether or not public garages are required to provide toilet facilities to the public.
- Determine where service sinks are required for businesses and merchants.
- Ascertain if liquid type lining materials are permitted for showers.

The Author

The author of this course is Joe Belcher, owner of JDB Code Services, Inc.

Joe has more than thirty-five years in the code development and enforcement field. He spent 10 years in the public sector starting in fire inspection and ending in building code enforcement. When he left the public sector, Joe was the Director of Public Safety Inspections for the City of Gainesville, Florida. As the director, Joe also served as the building official for the city.

Joe entered the private sector as the Director of Codes and Standards for a statewide industry association establishing and directing their codes and standards program for 8 years. He left the association and started a code consultancy, JDB Code Services, Inc, in 1993 and continues to operate the company today. Joe has been involved in code development, enforcement, and product approval and currently represents the interests of several trade associations in the code arena.

In addition to the code consultancy, Joe started a company specializing in code education in 2001. He is currently the president and co-owner of BRB Code Educators, Inc. BRB develops and provides specialized education on building codes and standards to code enforcement

personnel, contractors, architects, engineers, home inspectors and others. Since formation of the company classes have been well received and presented to thousands of attendees. Attendees have included building code enforcers, architects, engineers, all contractor disciplines, fire service personnel, and product manufacturer and producer groups throughout the United States

Course Overview

Florida specific amendments are identified by FSA; otherwise, changes are from 2009 to 2012 Edition of International Plumbing Code (base code).

A number of Florida-specific amendments were deleted from the various volumes of the FBC as the base code was deemed to address the issues adequately. A total of 112 Florida specific amendments were deleted from the 9 Volumes of FBC.

Original scheduled implementation date of March 15, 2014, was changed to keep the code in synch with Florida Fire Prevention Code.

Marginal Markings

Solid vertical lines in the margins within the body of the code indicate a technical change from the requirements of the 2009 edition of the base code.

Deletion indicators consisting of solid arrows are provided in the margin where an entire section, paragraph, exception or table has been deleted or an item in a list of items or in a table has been deleted.

Dotted vertical lines in the margins within the body indicate a change from the requirements of the base codes to the Florida Building Code effective midnight, June 30, 2015.

Sections deleted from the base code are designated "Reserved."

Administration

FBC - Plumbing

Chapter 1 contains Administrative provisions.

What we have done in Florida is we have a basic Chapter 1 in the Florida Building Code and it is the Administrative chapter for all of the volumes of the FBC.

The Commission saw no reason to have separate administrative chapters in each volume of the code since the multiple volumes make up the Florida Building Code adopted as a single rule.

There are some special considerations that apply to that code, and in those particular instances you might see something in Chapter one of the volume other than just a simple reference to the Florida Building Code, Building.

Chapter 2

Definitions

Definitions are a very important part in the application of any code. They actually tell you how the code is applied. Many terms are specifically defined and may have a different meaning than the meaning in common usage of the term.

The differences between the definitions of a plumbing appliance and a plumbing fixture provide a good example of the importance of definitions in the code. Many requirements of the code apply to both plumbing appliances and plumbing fixtures; however, there are also many requirements that apply specifically to one or the other. Careful consideration of the definitions is needed to make certain the code is properly applied.



Domestic garbage disposal

This is a picture demonstrating one of those plumbing appliances; a garbage disposal. It is not a plumbing fixture, but it is a plumbing appliance, and there are code provisions for appliances.

Next we will be talking about a plumbing fixture. This definition has been modified to include devices that do not necessarily need a water supply such as waterless urinals and floor drains. Usually when you think of

plumbing, you think of water. With the new products, we are seeing items such as waterless urinals and floor drains where they don't necessarily have to be connected to water.

The modified definition of a Plumbing Fixture is: A receptacle or device that is either connected to a water supply system or discharges to a drainage system or requires both. Such receptacles or devices require a supply of water; or discharge liquid waste or liquid-borne solid waste; or require a supply of water and discharge waste to a the drainage system.

This is a graphic showing two types of plumbing fixtures: a waterless urinal and a floor drain. A floor drain is now considered a plumbing fixture, where previously it was not.



Waterless urinal



Chapter 3

General Regulations

§301.3 refers to connections to drainage system.

The Base code adds an Exception for items discharging to gray water systems. The Exception includes: bathtubs, showers, lavatories, clothes washers and laundry trays.

Any sewage that discharges from a building is required to be connected to the sanitary drainage system. (FSA)

The Exception is new in the base code. Language at end of the Exception deleting reference to subsurface landscape irrigation and adding the requirement to connect all sewage discharging from building to the drainage system is by Florida specific amendment.

Here again we see the importance of definitions in the code. The FSA requires any sewage that discharges from the building to be connected to the sanitary drainage system. The designer, contractor, and code enforcer need to know what exactly is meant by sewage. Sewage is defined by the code as: Sewage. Any liquid waste containing animal or vegetable matter in suspension or solution, including liquids containing chemicals in solution.” Does the discharge from a bathtub or clothes washer meet the definition of sewage? Chapter 13 treats the discharge of wastewater from bathtubs, showers, lavatories, clothes washers, and laundry trays separately from the discharge of water closets (toilets) and urinals.

§301.3 Connections to drainage system. Plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems required by Chapter 8.

Exception: Bathtubs, showers, lavatories, clothes washers and laundry trays shall not be required to discharge to the sanitary drainage system where such fixtures discharge to an approved gray water system for flushing of water closets and urinals in accordance with Chapter 13. Any sewage that discharges from the building must be connected to the sanitary drainage system of the building or premises and discharge to the sewage system in accordance with Chapter 7.

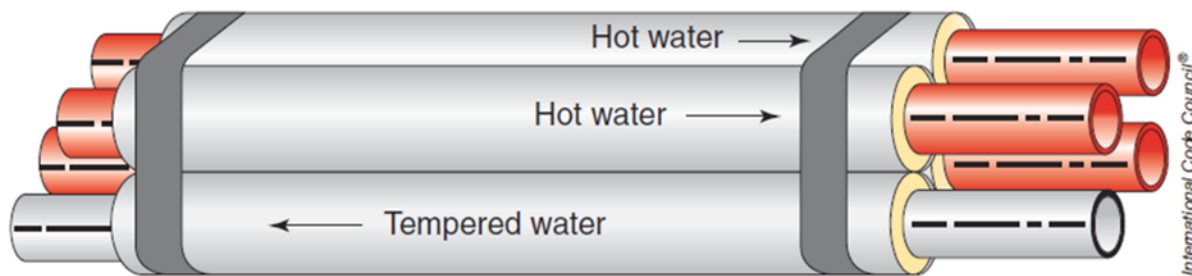
Materials

MATERIALS – Section 303.4 Third-party certification. The Section has been modified to require all plumbing products and materials to be listed by third-party certification agency. Formerly, there was a table which specified which products and materials required third-party certification and testing. That table is no longer in the code. The code now states that all plumbing products and materials have to be listed by a third-party certification agency.

Piping Support

Piping Support in Section 308.9. Parallel water distribution systems. There is new wording here that permits hot and cold water piping to be bundled in the same grouping. A new requirement to insulate each hot water pipe has been added to parallel water distribution system piping bundles where hot water piping is bundled with cold or hot water piping.

This graphic shows how you can now have hot water and tempered water bundled together, but you could also have cold water added to the same bundle. You have to have insulation where you have hot water or tempered water piping, and you have to show the direction of the water flow in that pipe.



Example of Insulated bundle piping

Flood Hazard Resistance

Section 309.2 Flood hazard reorganizes the base code and places the Exception below the list of 9 items required to be located and installed per §1612. Section 1612 are the Flood Provisions of the Building Code.

Items 1- 9 remain unchanged.

SECTION 310.2. Again, a number of the changes occurred in the Base code. Many of the changes consisted of relocation-of provisions, reformatting of sections, and changes intended to

clarify the way the code section is written and an item is addressed. In most cases there is no attempt to change the provisions, however, in my experience, every time you clarify or reword things you always run the potential of change occurring. As always, when you have a new code adopted, very careful reading of the sections needs to take place to make sure that you are following the code.

§310.5 Urinal Partitions has been relocated to §405.3.5, but is unmodified.

Tests and Inspections

Tests and Inspections

Section 312.2 Drainage and vent water test.

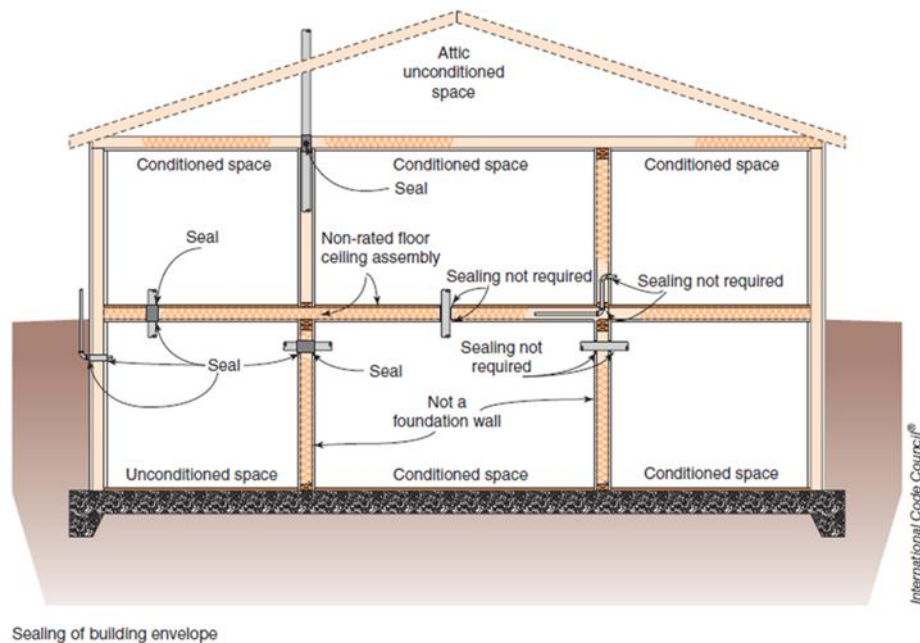
We had a Florida specific amendment that permitted a 5-foot head of water for test. We have dropped that Florida specific amendment and now require a 10-foot head of water for the test, which was the base code provision previously.

There is an effort throughout the code to do away with Florida specific amendments. This particular change is one of those changes.

SECTION 315 Penetrations - Sealing of annular spaces. This was formerly §305.4. The Section has been modified and expanded and the language was used to create new section 315.

Basically what it says is that in annular spaces where you have piping penetration, the annular space, if it is between the outside and the conditioned space, or between a non-conditioned space and a conditioned space, you have to seal the penetration. If you have a penetration between two conditioned spaces, you are not required to seal it.

This graphic is showing those conditions. Any penetration from the conditioned spaces to the attic have to be sealed. So any penetration from the unconditioned or outside space to a conditioned space must be sealed.



Chapter 4

Fixtures, Faucets & Fixture Fittings

§401.2 Prohibited fixtures and connections. We see this throughout the 5th edition: the addition of CSA standards for materials. The standards of the Canadian Standards Association are seen adopted throughout the code. Products manufactured in Canada can be imported and used in the United States. They are very similar to the standards in the United States. We have added CSA B45.1 to standards that are allowable for water closets. Again, there is a tendency to add Canadian Standards throughout the code, where applicable.

Minimum number of required plumbing fixtures. Group B and Group M with an occupant load greater than 15 are now required to have service sinks. Formerly, there was not a service sink required for Group B and Group M occupancy.

This is an excerpt from Table 403.1, which contains the minimum number of required plumbing fixtures and it adds a service sink to Group B and Group M. This is the table you will go to whenever you need to know what the minimum number of required fixtures are for any occupancy type.

TABLE 403.1 (IBC TABLE 2902.1) Minimum Number of Required Plumbing Fixtures^a (See Sections 403.2 and 403.3)

No.	Classification	Occupancy	Description	Other
2	Business	B	Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses	1 service sink ^g
6	Mercantile	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 service sink ^g

g. For business and mercantile occupancies with an occupant load of 15 or fewer, service sinks shall not be required.

403.2 Separate facilities – separate facilities are required for each sex where plumbing fixtures are required.

Application of Exceptions modified:

Deletes the application to food service establishments seating 10 or less.

Group B changed from areas < 3000 ft² to all structures or tenant spaces with total occupant load including employees and customers of 15 or less.

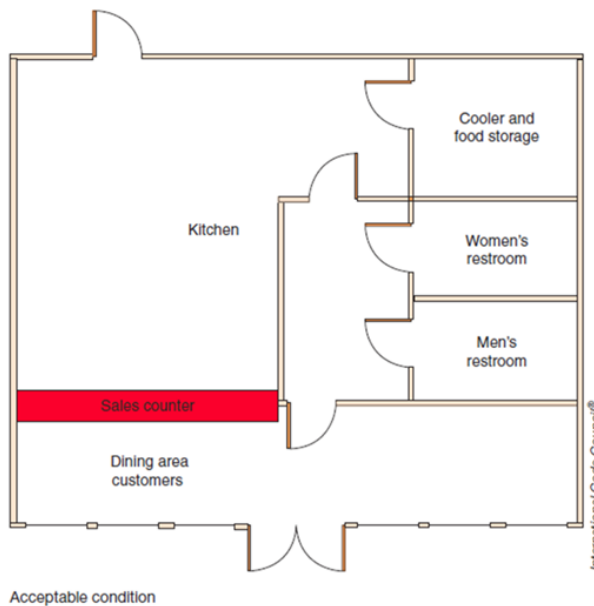
Group M changes from area of 3000 ft² or less to maximum occupant load of 100 or less. So rather than basing it on square footage, they are basing it on occupant load.

§403.2.1 Family or assisted-use toilet facilities serving as separate facilities – is a new section allowing substitution of two family/assisted-use toilet facilities for required separate facilities for each sex

Where separate toilets for each sex is required, and only one water closet for each separate toilet facility is required, two family/assisted-use facilities are permitted to serve as the required separate facilities. We are looking at a limited number of required facilities. We are allowing these family assisted-use to serve both functions.

Family/assisted-use toilet facilities not required to be identified for exclusive use by either sex as required by Section 403.4.

§403.3 Required public toilet facilities - Exception added for open or enclosed parking garages. The Section also includes the proviso that toilet facilities are not required in parking garages without attendants. If you have an attendant, obviously you are looking for a toilet facility.

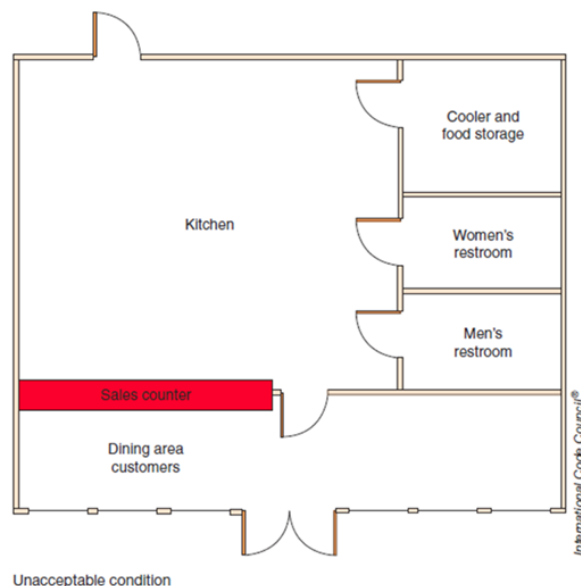


§403.3.2 Toilet room location - Prohibits locations that open directly into rooms used for food preparation for service to the public.

←This is a graphic demonstrating toilet rooms cannot open into food preparation areas. The toilet rooms/men's and women's restrooms appear to the right side of the graphic and you have the vestibule between the kitchen area and the restrooms. You cannot have the restroom open directly into that kitchen or the dining area for the customers. That is why you have the vestibule with doors to provide the separation.

This is a graphic showing the wrong way to do this. You cannot have the restrooms opening directly into the kitchen. →

§403.3.6 Door locking. This is a new section that prohibits locking from the inside where toilet room is for use of multiple occupants. It states not applicable to family or assisted-use toilet rooms. Basically, it says where a toilet room is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet rooms. The provision does not apply for single user rooms where you have a single



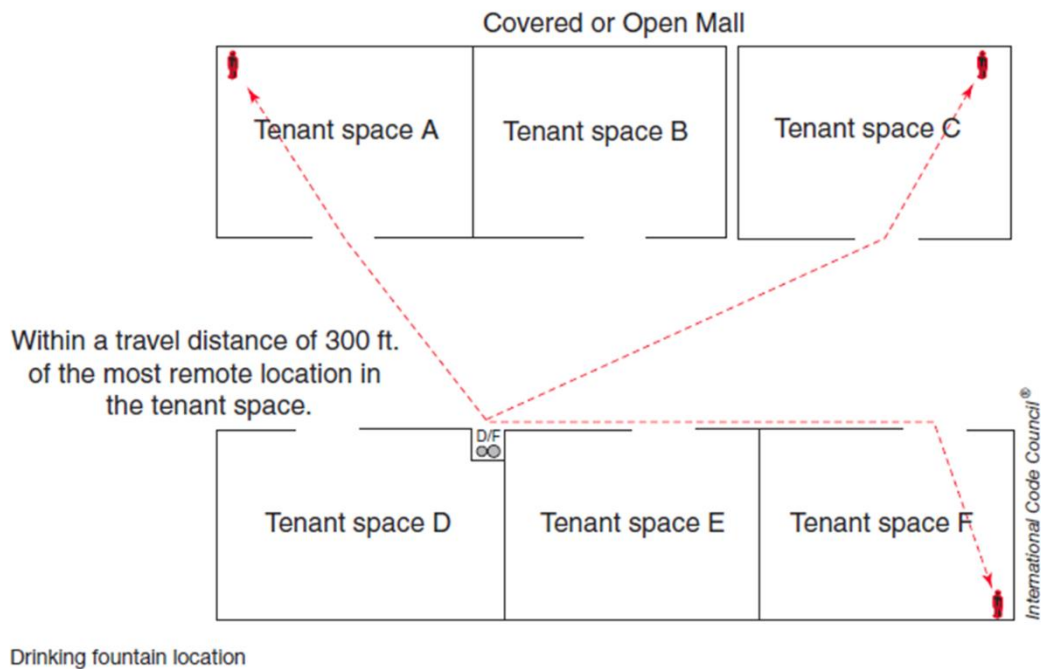
water closet. The provision applies solely to multiple facilities.

§403.5 Drinking fountain location. This is a new Section addressing tenant spaces and covered and open malls.

Drinking fountain is not required to be in tenant space when max travel distance is 500 feet and not more than one story above or below that tenant space.

When tenant space is in covered or open mall, the max travel distance is 300 feet.

This graphic is showing the drinking fountain location. You've got tenant spaces A, C, and D are all served by that one drinking fountain.



§405.3.1 Water closets, urinals, lavatories and bidets.

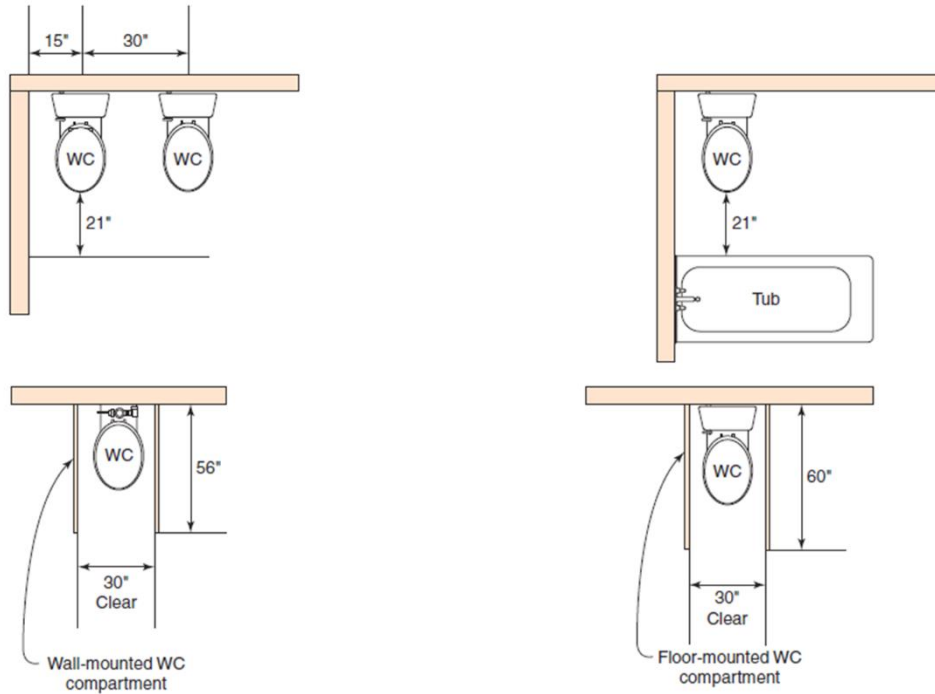
The WC compartment was modified by specifying dimensions for floor mounted WC vs. wall-mounted WC.

30" w x 60" depth for floor-mounted WC.

30" w x 56" depth for wall-hung WC.

They deleted Fig. 405.3.1 which showed Fixture Clearance.

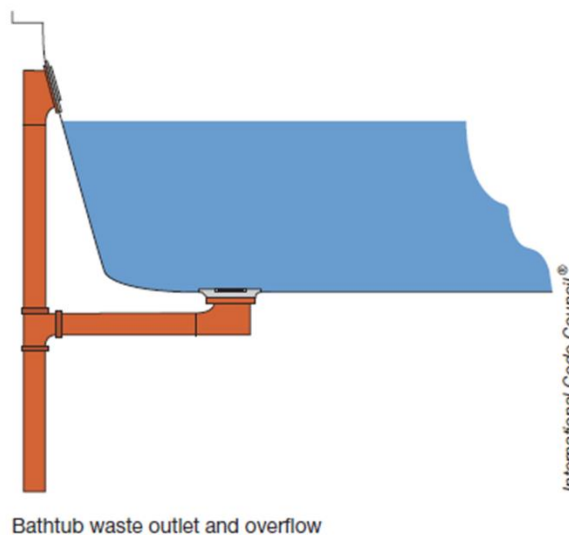
This is a graphic showing the dimensions of the compartment. On the left you have a wall mounted water compartments. We are looking at a depth of 56 inches for the compartment. On the right you have a floor mounted water compartment. There we are looking at a depth of 60 inches. Obviously you have to take into account that there is less space required for the wall mounted water closet.



Bathtubs

407.2 Bathtub waste outlets and overflows. This is a new section. There has not been a requirement previously to have an overflow. We have them for the lavatory but not for the bathtub. We now have a requirement for bathtubs.

This is a graphic showing a bathtub waste outlet and overflow.



Drinking Fountains

Section 410 has been rewritten/modified. We have a new section - §410.2 Minimum number. Basically there is a minimum of two drinking fountains required:

One for wheelchair users.

One for standing persons.

You can have a single fountain that serves both instead of having a separate one for each.

This is an example of a single fountain that satisfies both requirements: one for persons in a wheelchair and one for the standing person.



§410.3 Substitution. The code has changed provisions related to the exception for drinking fountains in restaurants by stating the water must be provided free of charge. If the only water available is for a charge, they still have to provide a drinking fountain. Water coolers or bottled water dispensers may substitute for not more than 50-percent of required drinking fountains.

Showers

Showers

§417.5.2.6 Liquid Type, Trowel Applied, Load Bearing, Bonded Waterproof Materials. We have a new liquid type lining material that is now allowed for showers.

Shower Liner

These are graphics of shower liners that are permitted. This is one type.

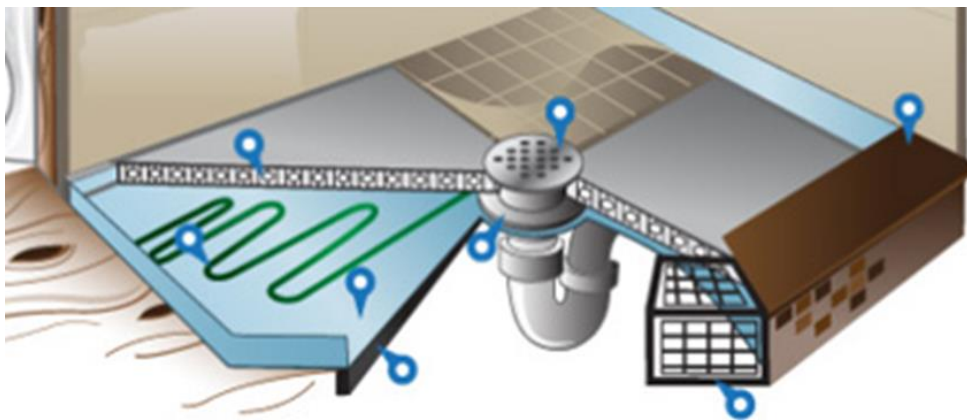




This is another picture of a shower liner and how you apply it.



This is another shower liner type.



This is showing the liquid water-proofing membrane that is now permitted.

Installation Cautions 51-55

Installation cautions: when talking about shower liners:

Famous words:

Permits! I don't need no stinkin' permits!!! This is how we've always done it!!!



And the result of “I don't need no stinking permits” can be seen in this cozy arrangement of urinals. They are definitely not within the special separation requirements.

And this is the “half rolls only, please” water closet, which demonstrates reading what the code contains – a minimum separation distance, because if you don't, this is the type of thing you might see in the field.



We are not really sure how private this would be, but again, this is part of the reason we have the code, part of the reason we have permits, and part of the reason we have inspections.

Chapter 5

Water Heaters

This is a very important change in the Plumbing code. We have these changes in the Building Code as well. Also, in the residential code we now have requirements for the elevation and protection of water heaters that are fuel fired.

In the previous edition, this provision was reserved. I have shown this in the Florida Building Code – Plumbing. I have shown it in the Florida Building Code – Residential as well. We now have sections where the elevation is protected from impact. It is now required in the code. In the previous edition they were reserved. So you need to be taking that into consideration when you place water heaters and other appliances in garage spaces.

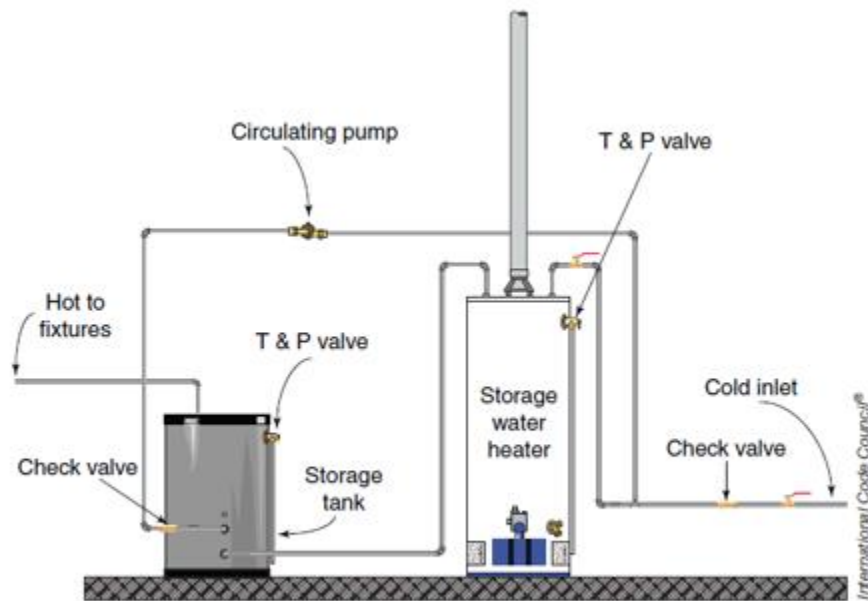
Safety Devices

Safety Devices

§504.4.1 Installation.

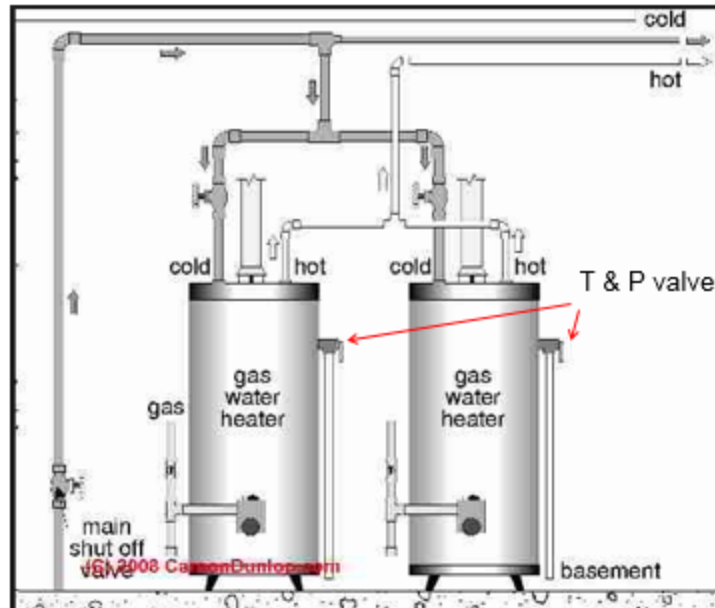
This section was modified to clarify that temperature and pressure protection is required on both tanks for a storage water heater and where you have a separate storage tank.

This is a graphic to explain that. On the right you see the storage water heater, which is heating the water as well as storing it. On the left you see a storage tank that is hooked to the system. It only holds the hot water. It doesn't actually do any heating in that tank. Both tanks are required to have pressure and temperature relief valves.



Water heater and storage tank installation

This is another graphic demonstrating that. You have both temperature and pressure relief valves on both tanks.



Water Heater Safety Devices §504.7 Required pan.

I have been around the codes for a long time, and this – required pan for water heaters – seems to be constantly undergoing change. I don't really understand why it should be so complicated, but we have some modifications here again for section 504.7.

Pans required where storage tank-type water heaters or hot water storage tanks are installed where leakage from the tank will cause damage.

That should be fairly self-evident, but we have some modifications to clarify it with the storage tank-types and for hot water heaters. Any place you have water and a tank that could leak, and the leak could cause damage, you are required to have a pan.

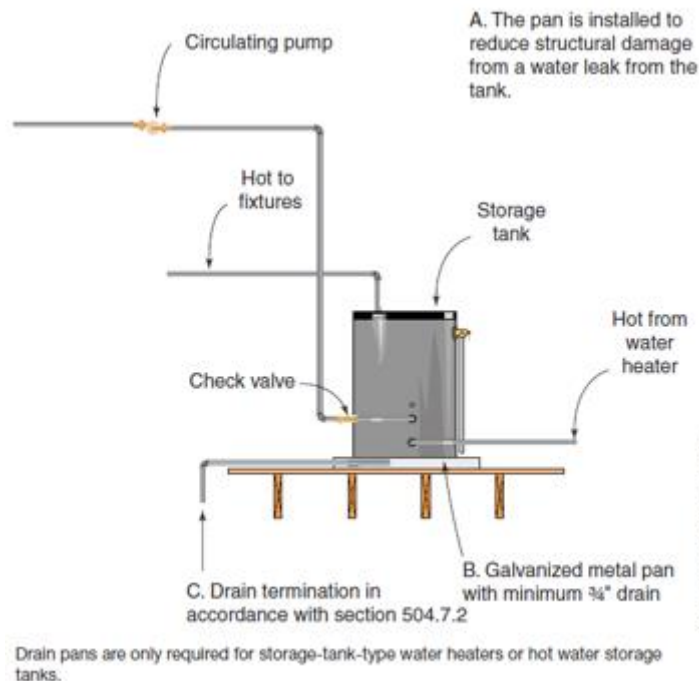
These are examples of some of the water heater drain pans you see out there. You can see there are drainage provisions from the pan. What you are trying to do is put the pan in to prevent leaking and causing damage.



Water Heater Drain Pans

If you look at this pan on the bottom, you will see that the drainage is just a fitting coming down the side. That would indicate it is probably in an area like a garage, where you are not really going to damage something, but any overflow there would be readily apparent.

The illustration states “structural damage from a water leak” – you see that up there in Item A. – “to reduce structural damage from a water leak” -The code does not address structural damage. The code simply says “could cause damage”.



Chapter 6

Water Supply & Distribution

Chapter 6 – Water Supply & Distribution

Materials, Joints & Connections 65-68

Materials, Joints, & Connections

§605.2.1 We have a Florida specific amendment that addresses the lead content of in drinking water pipe and fittings and the elements providing water for drinking or cooking purposes will have to comply with National Sanitation Foundation standard NSF 372. The weighted average of lead content 0.25-percent or less in any of your drinking water pipe and fittings.

Materials, Joints, & Connections

We have added Polyethylene of Raised-Temperature (PE-RT) Plastic Tubing. This has been added to allowable materials, joints and connections. The requirements for those can be located at §605.25.

And provisions were added to Table 308.5 Hanger Spacing, Table 605.3 Water Service Pipe, Table 605.4 Water Distribution Pipe, and Table 605.5 Pipe Fittings.

This is a table excerpt from these tables showing you where polyethylene of raised temperature (PE-RT) has been added and what the requirements are and the standard is ASTM F 2769.

TABLE 308.5 Hanger Spacing

Piping Material	Maximum Horizontal Spacing (Feet)	Maximum Vertical Spacing (Feet)
<u>Polyethylene of Raised Temperature (PE-RT) pipe</u>	<u>2.67 (32 inches)</u>	<u>10^b</u>

TABLE 605.3 Water Service Pipe

Material	Standard
<u>Polyethylene of raised temperature (PE-RT) plastic tubing</u>	<u>ASTM F 2769</u>

PE-RT requirements at §605.25

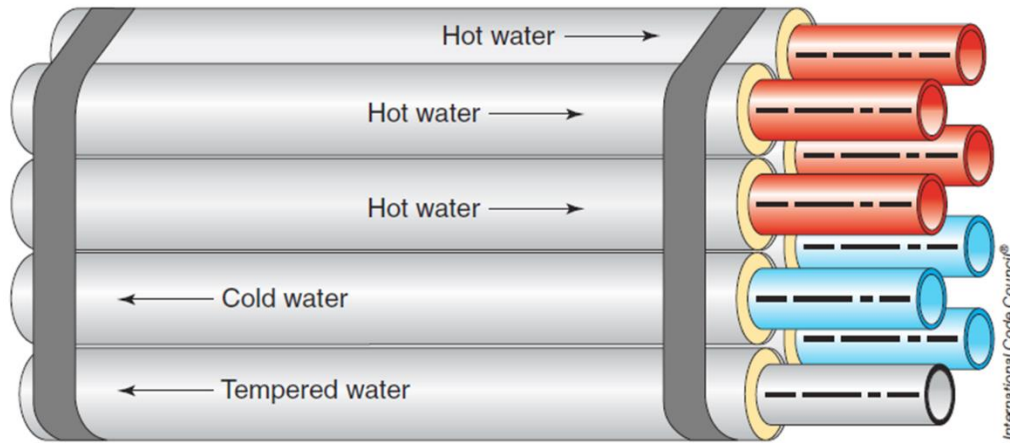
And for the standard for Water Distribution pipe – ASTM F 2769 and table 605.5 listed various standards for fittings in polyethylene of raised temperature (PE-RT) plastic tubing. They have added some standards for addressing that new material.

Installation of the Building Water Distribution System 69-71

Installation of the building water distribution system. Section 606.7. Labeling of water distribution pipes in bundles. We have already discussed this. In this section it tells you where they are bundled, each pipe has to be identified.

Identification to indicate pipe contents and direction of flow.

The identification markings have to occur every 25 feet and not less than 1 identification label on each pipe in each room, space, or story. If you don't meet that 25 feet, if you only have a 12 foot section through a room, you still have to label that section for each room, space, or story.



Pipe labeling requirements for bundles

This graphic is indicating that you are now permitted to bundle piping regardless of whether it is carrying hot, tempered or cold water. When it is bundled, all piping has to be insulated against heat transfer. You have to identify what is in that pipe (hot/tempered/cold), and the direction of flow. It must be marked every 25 feet, or each room, space, or story.

Hot Water Supply System

Hot water supply system - §607.1 Where required – we have stricken “occupied structures” and added “residential occupancies.”

Hot water shall be supplied to plumbing fixtures and equipment utilized for bathing, washing, culinary purposes, cleansing, laundry or building maintenance.

In nonresidential occupancies, hot water shall be supplied for culinary purposes, cleansing, laundry or building maintenance purposes. In nonresidential occupancies, hot water or tempered water shall be supplied for bathing and washing purposes.

§607.1.1 Temperature limiting means.

New provisions prohibit use of a thermostat to satisfy requirements for maximum allowable hot or tempered water temperature at fixture. We have to have some kind of valve or some other kind of controlling mechanism.



This is a typical water heater thermostat. It is not permitted to serve the temperature limiting means. The purpose of the thermostat is to set the equipment up the way the user wants to use it. The thermostat is not intended to be your temperature limiting means.

Typical water heater thermostat (Courtesy of Bradford White Corporation)

Hot Water Supply System

§607.1.2 Tempered water temperature control.

Water temperature limiting device required.

Maximum temperature of 110°F.

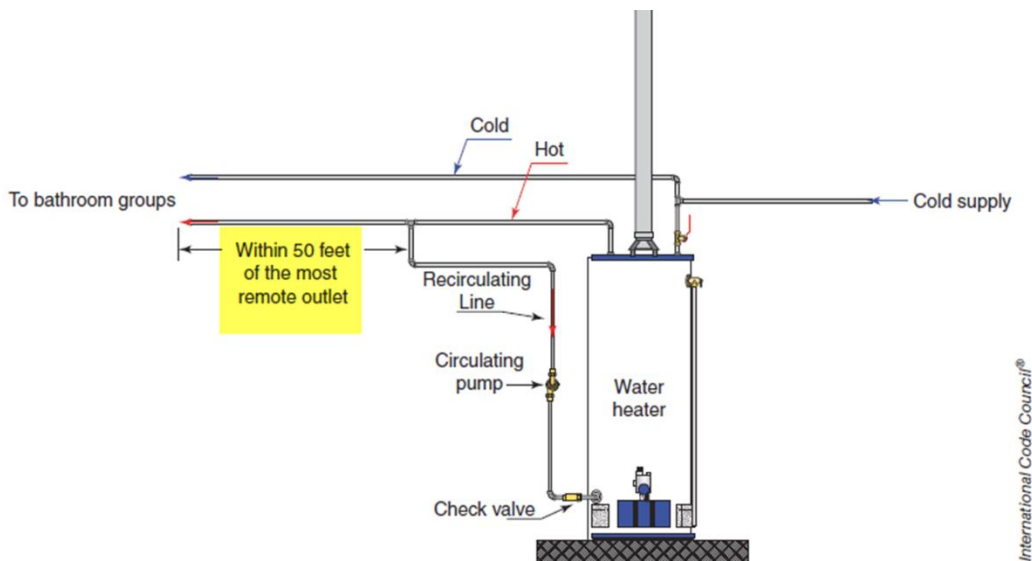
Does not supersede requirements for protective shower valves §424.3

This is a new requirement for a water temperature limiting device on hot water systems.

§607.2 Hot or tempered water supply to fixtures.

This change reduces the maximum distance between hot water supply source and all fixtures served from 100 feet to 50 feet.

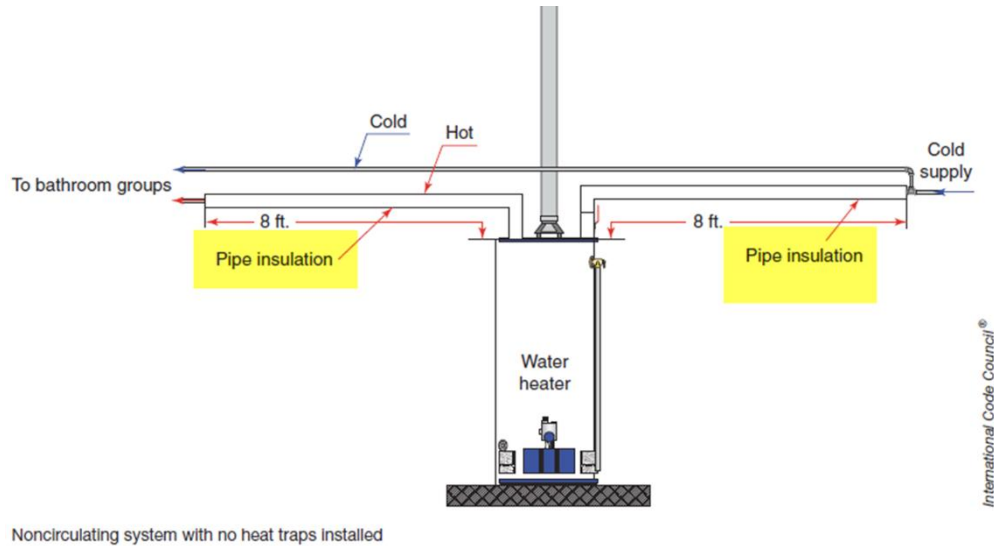
The graphic indicates the change of the maximum distance from the hot water source to fixtures from 100 feet to 50 feet



Hot or tempered water supply to fixtures

§607.5 Pipe insulation.

This is a new section repeating the pipe insulation requirements of the Florida Building Code - Energy Conservation. What it says is hot water piping in automatic temperature maintenance systems shall be insulated with 1 inch (25 mm) of insulation having a conductivity not exceeding 0.27 Btu per inch/h ft² °F. The first 8 feet (2438 mm) of hot water piping from a hot water source that does not have heat traps shall be insulated with 0.5 inch (12.7 mm) of material having a conductivity not exceeding 0.27 Btu per inch/h ft² °F. These are new requirements for Hot Water Piping Insulation.



This graphic indicating the piping insulation – the first 8 ft should be ½ inch. After the initial eight feet, 1 inch insulation is required on the hot water piping.

Protection of Potable Water Supply

Protection of Potable Water Supply

§608.8 Identification of nonpotable water.

The Section is modified to apply to all nonpotable water systems whether inside or outside a building.



This graphic shows nonpotable water piping is required to be identified and show the direction of water flow.

Chapter 7

Sanitary Drainage

Drainage Piping Installation

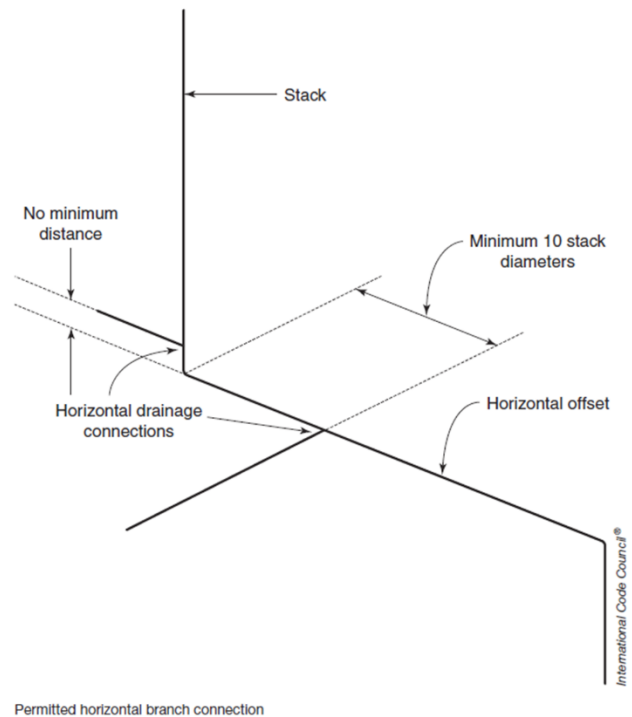
§704.3 Connections to offsets and bases of stacks.

This has been modified to delete reference to §711.2.

That deletion permits horizontal branches to connect at any point in a stack above or below a horizontal offset. Previously we had a prohibition of that at §711.2.

§704.3 Connections to offsets and bases of stacks.

Horizontal branches are now permitted to connect at any point in a stack above or below a horizontal offset. Horizontal branches are now allowed to connect to base of stacks at point not less than 10 times the diameter of drainage stack downstream from stack.



This is a graphic demonstrating this; no minimum distance here. Horizontal drainage connections. You have a minimum of 10 stack diameters.

Fixture Units

Table 709.1 Drainage Fixture Units for Fixtures and Groups.

Note f is modified to include all bathroom groups.

The change to the note requires the dfu value of additional fixtures added to a bathroom group to be added to the group fixture count.

This graphic is showing the modification. Previously it was for a dwelling unit bathroom group only. Now the term dwelling unit is stricken making the provision apply to all bathroom groups.

TABLE 709.1 Drainage Fixture Units for Fixtures and Groups

Fixture Type	Drainage Fixture Unit Value as Load Factors	Minimum Size of Trap (inches)
Bathroom group as defined in Section 202 (1.6 gpf water closet) ^f	5	—
Bathroom group as defined in Section 202 (water closet flushing greater than 1.6 gpf) ^f	6	—

f. For fixtures added to a ~~dwelling unit~~ bathroom group, add the dfu value of those additional fixtures to the ~~bathroom group~~ fixture count.

Table 709.1 Drainage Fixture Units

Table 709.1 accounts for multiple head showers, which are becoming more and more popular.

The table was modified to show the different gpm values.

Fixture Type	Drainage Fixture Unit Value as Load Factors	Minimum Size of Trap (inches)
Shower (based on the total flow rate through showerheads and body sprays)		
Flow rate:		
5.7 gpm or less	2	1½
Greater than 5.7 gpm to 12.3 gpm	3	2
Greater than 12.3 gpm to 25.8 gpm	5	3
Greater than 25.8 gpm to 55.6 gpm	6	4

This is a graphic for multi-head showers and body sprays. Again, they are gaining in popularity. Obviously, you are going to need a lot more water with all of these heads.

Sumps and Ejectors

Sanitary Drainage – Sumps and Ejectors

§712.3.3 Discharge piping and fittings.

This section was modified to clarify section relates to sumps and ejectors. Again, we have to be cautious when we look at these clarifications and changes. Sometimes they do change the entire meaning. Reference is added to two new sections, §712.3.3.1 and §712.3.3.2 covering materials and ratings for discharge piping and fittings.

Sumps and Ejectors – 712.3.3.2 Ratings.

It added requirements for sumps and ejectors to be rated for maximum operating pressure and temperature.

The fitting materials required to be compatible with pipe materials.

Where buried in the earth, materials are required to be suitable for burial.

These are all things that were generally acceptable requirements, but they were not specifically required in the code. They are now.

This is a graphic showing pvc, which is an approved material for sump pump discharge piping. You can see all of the approvals and testing data are stenciled right on the piping itself.

Chapter 8

Indirect/Special Waste 94-99

Indirect Wastes

§802.1.8 Food utensils, dishes, pots and pans sinks.

This requires indirect discharge through air gap or air break.

It deletes direct connection from sink to drainage system in 5th Edition. I believe it was modified in the Florida Building code 2010 to allow direct connection. Now we are coming back in the 5th edition and removing that allowance.

This graphic shows and air gap. The basic requirement is for it to be indirectly connected to the drain – no direct connection.

§802.2 Installation.

It increases developed length where traps are required:

It increases from 2 feet to 30 inches horizontally.

From 4 feet to 54 inches total developed length.

It adds Exception for receptor receiving only clear water waste. For example, showcases, standup coolers, etc.

This is a graphic for traps for indirect waste pipes.

This is a food prep sink. The graphic depicts the relationship between the total developed length of 54 inches, and the horizontal length of 30 inches at which traps are required.

A new Exception for waste receptors receiving only clear water was added.

Chapter 9

Vents 100

Vent Terminals 101, 102

The section is renumbered from 904.5 to 903.5. Location of vent terminal.

The open vent terminal may not be directly beneath a door, openable window or other air intake opening. The height above openings as related to the horizontal separation from an opening is modified from 2 to 3 feet to be consistent with FBC-M. A vent terminal has to be at least 10 feet horizontally from any opening unless the vent is at least 3 feet above the opening.

This graphic demonstrates the approved location of vent terminals. Three feet above outside air (OSA) intake when the vent is within 10 feet horizontally. There is a rooftop HVAC unit shown here. The outside air inlet with a 10 foot minimum from this plumbing vent.

Combination Waste & Vent System 103, 104

The term combination drain and vent changed to waste and vent throughout the Chapter. We no longer have Combination Drain and Vent. It will now be called Waste and Vent throughout. Section 915.2.2 is the new section for vent size and length. Again, this is part of the reformatting of some sections. The code now specifically permits unlimited horizontal length. Previously horizontal length was not addressed at all. Now it is unlimited.

This is a graphic depicting the horizontal length and you see along the bottom is unlimited. You can connect to it all along the length.

Single Stack System 105, 106

This is a new section adding requirements for a single-stack system. Single stack system complying with Section 917 is considered an acceptable venting system. Previously we did not address single stack systems in the code.

This is a graphic showing a single stack system for a 6 story building.

Chapter 10

Traps, Interceptors and Separators 107

Trap Requirements 108, 109

§1002.1 Fixture traps.

We have added an exception to individual traps for floor drains in multilevel parking garages. Exceptions for trap requirements requires connection to a main trap per §1103.1.

Basically, 1002.1 says that each plumbing fixture shall be separately trapped by a liquid-seal trap, except as otherwise permitted by this code.

And we have added an exception there for individual traps for floor drains in multilevel parking garages

This graphic shows the depiction of the exemption for floor drain traps in parking garages.

Interceptors and Separators 110, 111

§1003.3.1 Grease Interceptors and Automatic Grease Removal Devices Required.

This adds a provision allowing one or more interceptors on or above the floor and upstream of existing interceptor when insufficient space or cost for putting more interceptors in is prohibitive.

Combinations of grease interceptors are now allowed to be provided for renovation projects involving existing buildings where there is insufficient space or it is cost prohibitive to install a large enough in-ground interceptor (usually a gravity type) to meet local sewer ordinance requirements. This is trying to deal with existing facilities.

This is a grease interceptor. Of course, they are in the ground. Here we show hydromechanical grease interceptors.

Chapter 11

Storm Drainage 112

Chapter 11 – Storm Drainage

Siphonic Roof Drainage Systems 113, 114

§1107.1 General.

This is a new section recognizing new technology.

They require siphonic roof drains and drainage systems to be designed per ASME A112.6.9 and ASPE 45. Again, this is a new system, but is now recognized and permitted in the code.

These are pictures of two typical systems. They actually set up a siphoning action in the drain to pull the drain.

Chapter 12

Special Piping & Storage Systems 115

Chapter 12 – Special Piping and Storage Systems.
There are no significant changes.

Chapter 13

Gray Water Recycling Systems 116, 117

Chapter 13 – Gray Water Recycling Systems

This adopts a new chapter for gray water recycling systems by relocating former Appendix C. This was all in Appendix C previously. Again, appendices are not adopted unless specifically adopted by the local jurisdiction and the local ordinance.

The provisions of the Appendix were heavily modified by FSA. The Subsurface landscape irrigation provisions were deleted by Florida specific amendment and most sections of the Appendix are marked Reserved. There are health department rules that govern gray water use.

Conclusion

Summary 117

In summary, there are numerous changes in the new edition of the Florida Building Code, including the Florida Building Code, Plumbing. The course highlighted some of the significant changes to the Florida Building Code – Plumbing, 5th Edition 2014, which went into effect June 30, 2015. The course also included some of the Florida specific amendments to the base code. Changes occur across the entire breadth of the code and careful analysis by practitioners is necessary to make certain designs are code compliant.

Author Biography

Author Name

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