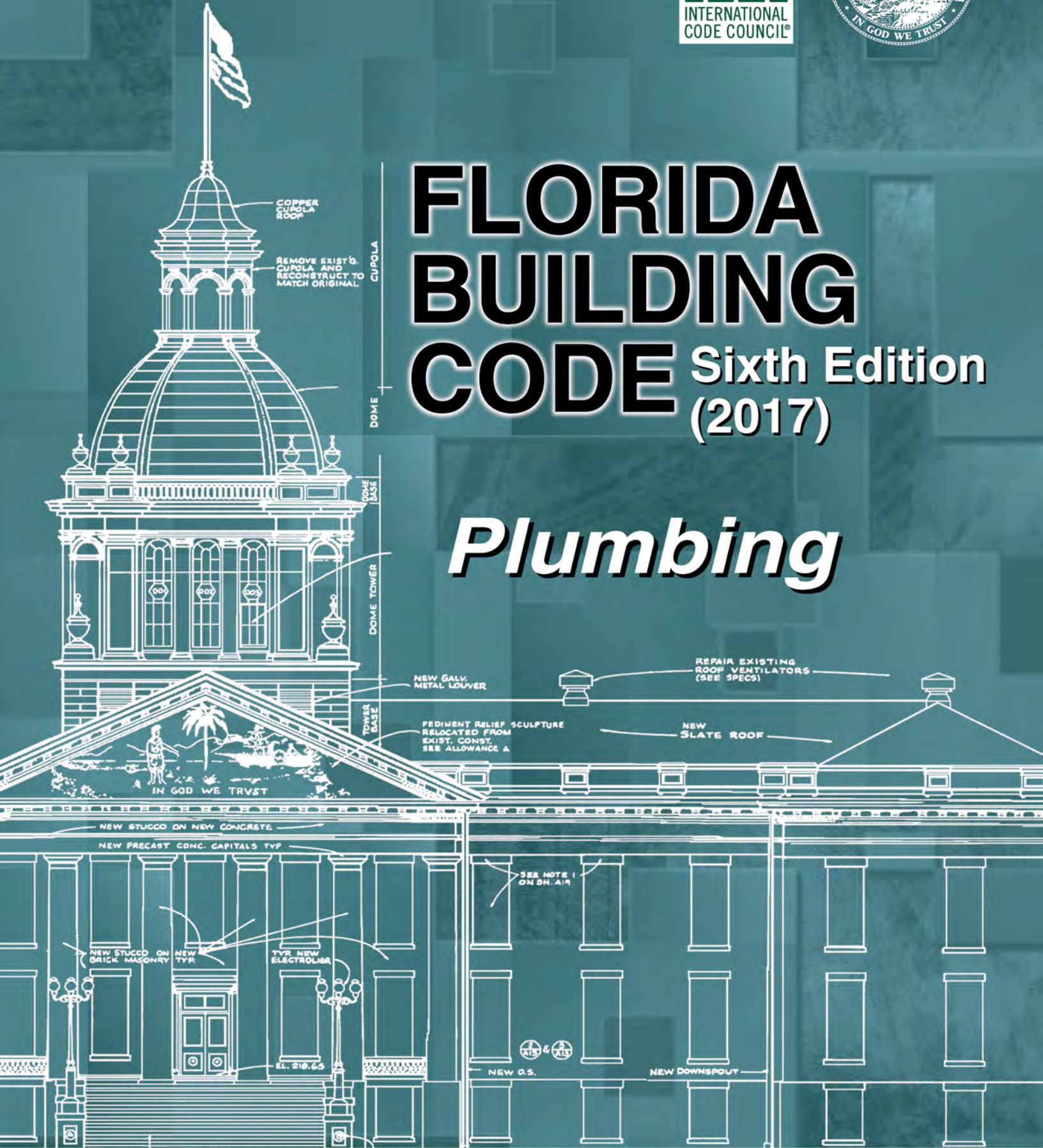




# FLORIDA BUILDING CODE

Sixth Edition  
(2017)

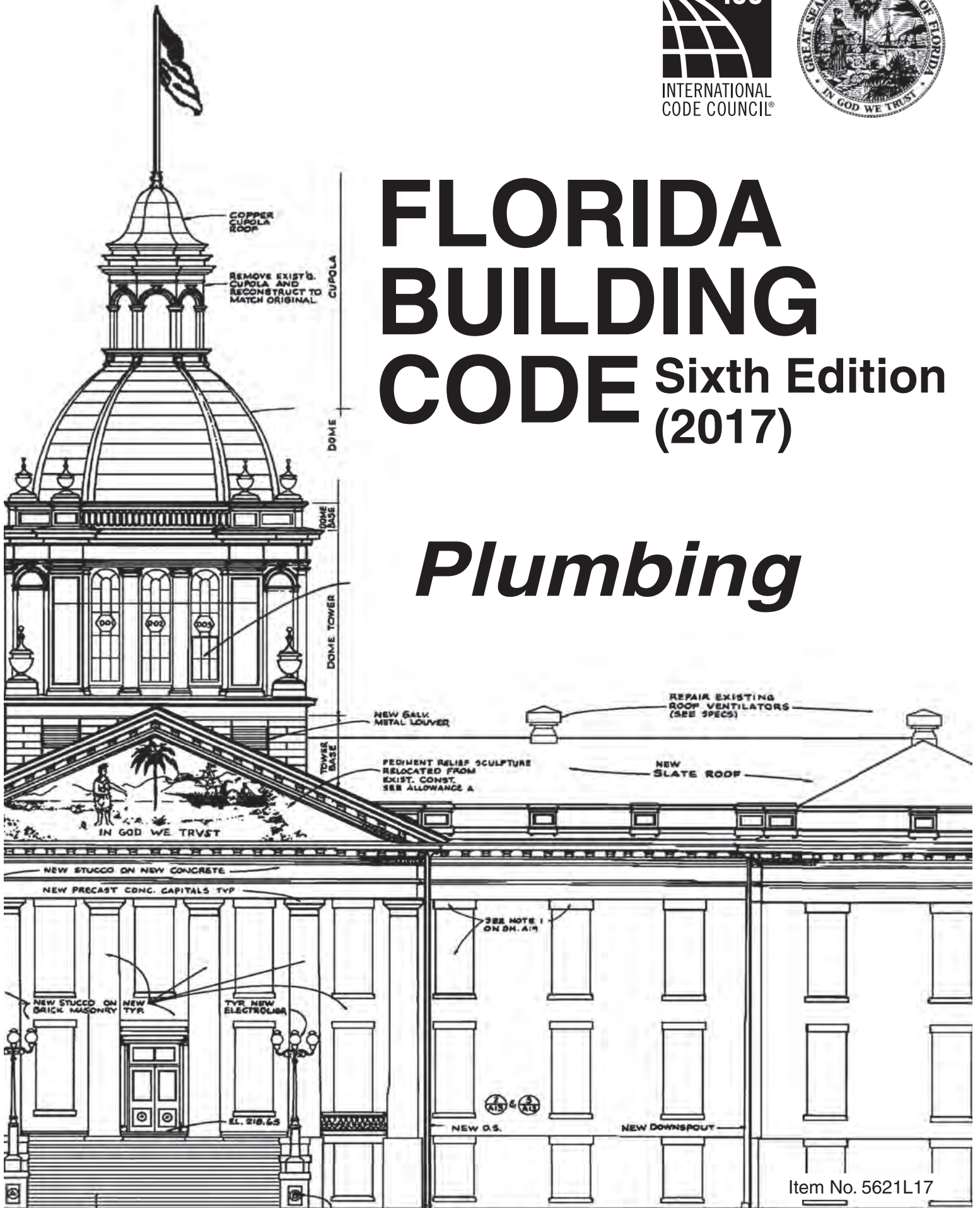
## Plumbing



# FLORIDA BUILDING CODE

Sixth Edition  
(2017)

## *Plumbing*



Florida Building Code, Plumbing, 6th Edition

First Printing: July 2017

ISBN: 978-1-60983-689-4

COPYRIGHT © 2017  
by  
INTERNATIONAL CODE COUNCIL, INC.

ALL RIGHTS RESERVED. This *Florida Building Code, Plumbing, 6th Edition* (2017) contains substantial copyrighted materials from the 2015 *International Plumbing Code*<sup>®</sup>, 3rd printing, which is a copyrighted work owned by the International Code Council, Inc., that is © 2015 International Code Council, Inc. ALL RIGHTS RESERVED. Without advance written permission from the copyright owner, no part of this work may be reproduced, distributed or transmitted in any form or by any means, including, without limitation, electronic, optical or mechanical means (by way of example, and not limitation, photocopying, or recording by or in an information storage retrieval system). For information on use rights and permissions, please contact: Publications, 4051 Flossmoor Road, Country Club Hills, IL 60478. Phone 1-888-ICC-SAFE (422-7233).

The following trademarks: “International Code Council,” the “International Code Council” logo, “ICC,” the “ICC” logo, the “International Plumbing Code,” and the “IPC” are trademarks of the International Code Council, Inc., and may not be used without permission.

PRINTED IN THE U.S.A.

# PREFACE

## History

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

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

## Scope

The *Florida Building Code* is based on national model building codes and national consensus standards which are amended where necessary for Florida’s specific needs. However, code requirements that address snow loads and earthquake protection are pervasive; they are left in place but should not be utilized or enforced because Florida has no snow load or earthquake threat. The code incorporates all building construction-related regulations for public and private buildings in the State of Florida other than those specifically exempted by Section 553.73, *Florida Statutes*. It has been harmonized with the *Florida Fire Prevention Code*, which is developed and maintained by the Department of Financial Services, Office of the State Fire Marshal, to establish unified and consistent standards.

The base codes for the Sixth edition (2017) of the *Florida Building Code* include: the *International Building Code*®, 2015 edition; the *International Plumbing Code*®, 2015 edition; the *International Mechanical Code*®, 2015 edition; the *International Fuel Gas Code*®, 2015 edition; the *International Residential Code*®, 2012 edition; the *International Existing Building Code*®, 2015 edition; the *International Energy Conservation Code*®, 2015; the *National Electrical Code*, 2014 edition; substantive criteria from ASHRAE Standard 90.1-2013. State and local codes adopted and incorporated into the code include the *Florida Building Code, Accessibility*, and special hurricane protection standards for the High-Velocity Hurricane Zone.

The code is composed of nine main volumes: the *Florida Building Code, Building*, which also includes state regulations for licensed facilities; the *Florida Building Code, Plumbing*; the *Florida Building Code, Mechanical*; the *Florida Building Code, Fuel Gas*; the *Florida Building Code, Existing Building*; the *Florida Building Code, Residential*; the *Florida Building Code, Energy Conservation*; the *Florida Building Code, Accessibility* and the *Florida Building Code, Test Protocols for High-Velocity Hurricane Zones*. Chapter 27 of the *Florida Building Code, Building*, adopts the *National Electrical Code*, NFPA 70, by reference.

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

## Adoption and Maintenance

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

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

The Commission may only issue official code clarifications using procedures of Chapter 120, *Florida Statutes*. To obtain such a clarification, a request for a Declaratory Statement (DEC) must be made to the Florida Building Commission in a manner that establishes a clear set of facts and circumstances and identifies the section of the code in question. Requests are analyzed by staff, reviewed by the appropriate Technical Advisory Committee, and sent to the Florida Building Commission for action. These interpretations establish precedents for situations having similar facts and circumstances and are typically incorporated into the code in the next code amendment cycle. Non-binding opinions are available from the Building Officials Association of Florida's web site ([www.BOAF.net](http://www.BOAF.net)) and a Binding Opinion process is available online at [www.floridabuilding.org](http://www.floridabuilding.org).

## Code Development Committee Responsibilities (Letter Designations in Front of Section Numbers)

In each code development cycle, proposed changes to the code are considered at the Committee Action Hearings by the International Plumbing Code Development Committee, whose action constitutes a recommendation to the voting membership for final action on the proposed change. Proposed changes to a code section that has a number beginning with a letter in brackets are considered by a different code development committee. For example, proposed changes to code sections that have [BS] in front of them (e.g., [BS] 309.2) are considered by the IBC – Structural Code Development Committee at the code development hearings.

The content of sections in this code that begin with a letter designation is maintained by another code development committee in accordance with the following:

- [A] = Administrative Code Development Committee;
- [BE] = IBC – Means of Egress Code Development Committee;
- [BG] = IBC – General Code Development Committee;
- [BS] = IBC – Structural Code Development Committee;
- [E] = International Energy Conservation Code Development Committee;
- [F] = International Fire Code Development Committee; and
- [M] = International Mechanical Code Development Committee.

## Marginal Markings

Solid vertical lines in the margins within the body of the code indicate a technical change from the requirements of the 2012 edition. Deletion indicators in the form of an arrow (➡) 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 a table has been deleted.

A single asterisk [\*] placed in the margin indicates that text or a table has been relocated within the code. A double asterisk [\*\*] placed in the margin indicates that the text or table immediately following it has been relocated there from elsewhere in the code.

Dotted vertical lines in the margins within the body of the code indicate a change from the requirements of the base codes to the *Florida Building Code, Plumbing*, 6th Edition (2017) effective December 31, 2017.

Sections deleted from the base code are designated “Reserved” in order to maintain the structure of the base code.

## Italicized Terms

Selected terms set forth in Chapter 2, Definitions, are italicized where they appear in code text. Such terms are not italicized where the definition set forth in Chapter 2 does not impart the intended meaning in the use of the term. The terms selected have definitions that the user should read carefully to facilitate better understanding of the code.

## Acknowledgments

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



# TABLE OF CONTENTS

<p><b>CHAPTER 1 SCOPE AND ADMINISTRATION . . . 1</b></p> <p><b>PART 1—SCOPE AND APPLICATION . . . . . 1</b></p> <p>Section</p> <p>101 General . . . . . 1</p> <p>102 Applicability (Reserved) . . . . . 1</p> <p><b>PART 2—ADMINISTRATION AND ENFORCEMENT . . . . . 1</b></p> <p>Section</p> <p>103 Department of Plumbing Inspection (Reserved) . . . . . 1</p> <p>104 Duties and Powers of the Code Official (Reserved) . . . . . 1</p> <p>105 Approval (Reserved) . . . . . 1</p> <p>106 Permits (Reserved) . . . . . 1</p> <p>107 Inspections and Testing (Reserved) . . . . . 1</p> <p>108 Violations (Reserved) . . . . . 1</p> <p>109 Means of Appeal (Reserved) . . . . . 1</p> <p>110 Temporary Equipment, Systems and Uses (Reserved) . . . . . 1</p> <p><b>CHAPTER 2 DEFINITIONS . . . . . 3</b></p> <p>Section</p> <p>201 General . . . . . 3</p> <p>202 General Definitions . . . . . 3</p> <p><b>CHAPTER 3 GENERAL REGULATIONS . . . . . 11</b></p> <p>Section</p> <p>301 General . . . . . 11</p> <p>302 Exclusion of Materials Detrimental to the Sewer System . . . . . 11</p> <p>303 Materials . . . . . 11</p> <p>304 Rodentproofing . . . . . 12</p> <p>305 Protection of Pipes and Plumbing System Components . . . . . 12</p> <p>306 Trenching, Excavation and Backfill . . . . . 12</p> <p>307 Structural Safety . . . . . 13</p> <p>308 Piping Support . . . . . 13</p> <p>309 Flood Hazard Resistance . . . . . 14</p> <p>310 Washroom and Toilet Room Requirements . . . . . 15</p> <p>311 Toilet Facilities for Workers . . . . . 15</p>	<p>312 Tests and Inspections . . . . . 15</p> <p>313 Equipment Efficiencies . . . . . 16</p> <p>314 Condensate Disposal . . . . . 16</p> <p>315 Penetrations . . . . . 17</p> <p>316 Alternative Engineered Design . . . . . 17</p> <p>317 Public Food Service Establishments and Food Establishments . . . . . 18</p> <p>318 Irrigation . . . . . 18</p> <p><b>CHAPTER 4 FIXTURES, FAUCETS AND FIXTURE FITTINGS . . . . . 19</b></p> <p>Section</p> <p>401 General . . . . . 19</p> <p>402 Fixture Materials . . . . . 19</p> <p>403 Minimum Plumbing Facilities . . . . . 19</p> <p>404 Accessible Plumbing Facilities . . . . . 24</p> <p>405 Installation of Fixtures . . . . . 24</p> <p>406 Automatic Clothes Washers . . . . . 25</p> <p>407 Bathtubs . . . . . 25</p> <p>408 Bidets . . . . . 25</p> <p>409 Dishwashing Machines . . . . . 25</p> <p>410 Drinking Fountains . . . . . 25</p> <p>411 Emergency Showers and Eyewash Stations . . . . . 26</p> <p>412 Floor and Trench Drains . . . . . 26</p> <p>413 Food Waste Disposer Units . . . . . 26</p> <p>414 Garbage Can Washers . . . . . 26</p> <p>415 Laundry Trays . . . . . 26</p> <p>416 Lavatories . . . . . 26</p> <p>417 Showers . . . . . 27</p> <p>418 Sinks . . . . . 28</p> <p>419 Urinals . . . . . 28</p> <p>420 Water Closets . . . . . 28</p> <p>421 Whirlpool Bathtubs . . . . . 28</p> <p>422 Health Care Fixtures and Equipment . . . . . 29</p> <p>423 Specialty Plumbing Fixtures . . . . . 29</p> <p>424 Faucets and Other Fixture Fittings . . . . . 29</p> <p>425 Flushing Devices for Water Closets and Urinals . . . . . 30</p> <p>426 Manual Food and Beverage Dispensing Equipment . . . . . 31</p> <p>427 Floor Sinks . . . . . 31</p>
---	--

**TABLE OF CONTENTS**

**CHAPTER 5 WATER HEATERS ..... 33**

Section

501 General ..... 33

502 Installation ..... 33

503 Connections ..... 33

504 Safety Devices ..... 34

505 Insulation ..... 34

**CHAPTER 6 WATER SUPPLY AND DISTRIBUTION ..... 35**

Section

601 General ..... 35

602 Water Required ..... 35

603 Water Service ..... 36

604 Design of Building Water Distribution System ..... 36

605 Materials, Joints and Connections ..... 38

606 Installation of the Building Water Distribution System ..... 44

607 Hot Water Supply System ..... 45

608 Protection of Potable Water Supply ..... 46

609 Health Care Plumbing ..... 51

610 Disinfection of Potable Water System ..... 52

611 Water Treatment Units ..... 52

612 Solar Systems ..... 52

613 Temperature Control Devices and Valves ..... 52

614 Well Pumps and Tanks Used for Private Potable Water Systems ..... 53

**CHAPTER 7 SANITARY DRAINAGE ..... 55**

Section

701 General ..... 55

702 Materials ..... 55

703 Building Sewer ..... 57

704 Drainage Piping Installation ..... 57

705 Joints ..... 57

706 Connections between Drainage Piping and Fittings ..... 60

707 Prohibited Joints and Connections ..... 61

708 Cleanouts ..... 61

709 Fixture Units ..... 62

710 Drainage System Sizing ..... 62

711 Offsets in Drainage Piping in Buildings of Five Stories or More ..... 64

712 Sumps and Ejectors ..... 64

713 Health Care Plumbing ..... 65

714 Computerized Drainage Design ..... 67

715 Backwater Valves ..... 67

716 Vacuum Drainage Systems ..... 67

717 Replacement of Underground Sewers by Pipe-bursting Methods ..... 68

**CHAPTER 8 INDIRECT/SPECIAL WASTE ..... 69**

Section

801 General ..... 69

802 Indirect Wastes ..... 69

803 Special Wastes ..... 70

804 Materials, Joints and Connections ..... 70

**CHAPTER 9 VENTS ..... 71**

Section

901 General ..... 71

902 Materials ..... 71

903 Vent Terminals ..... 71

904 Outdoor Vent Extensions ..... 71

905 Vent Connections and Grades ..... 72

906 Vent Pipe Sizing ..... 72

907 Vents for Stack Offsets ..... 72

908 Relief Vents—Stacks of More Than 10 Branch Intervals ..... 74

909 Fixture Vents ..... 74

910 Individual Vent ..... 74

911 Common Vent ..... 74

912 Wet Venting ..... 75

913 Waste Stack Vent ..... 75

914 Circuit Venting ..... 76

915 Combination Waste and Vent System ..... 76

916 Island Fixture Venting ..... 76

917 Single Stack Vent System ..... 77

918 Air Admittance Valves ..... 78

919 Engineered Vent Systems ..... 78

920 Computerized Vent Design ..... 79

**CHAPTER 10 TRAPS, INTERCEPTORS AND SEPARATORS ..... 81**

Section

1001 General ..... 81

1002 Trap Requirements ..... 81

1003 Interceptors and Separators ..... 82

1004 Materials, Joints and Connections ..... 84

<b>CHAPTER 11 STORM DRAINAGE . . . . . 85</b>	<b>APPENDIX B RATES OF RAINFALL FOR VARIOUS CITIES. . . . . 123</b>
Section	
1101 General . . . . . 85	
1102 Materials . . . . . 85	
1103 Traps . . . . . 86	
1104 Conductors and Connections . . . . . 86	
1105 Roof Drains . . . . . 86	
1106 Size of Conductors, Leaders and Storm Drains . . . . . 86	
1107 Siphonic Roof Drainage Systems . . . . . 92	
1108 Secondary (Emergency) Roof Drains . . . . . 92	
1109 Combined Sanitary and Storm Public Sewer . . . . . 93	
1110 Controlled Flow Roof Drain Systems . . . . . 93	
1111 Subsoil Drains . . . . . 93	
1112 Building Subdrains . . . . . 94	
1113 Sumps and Pumping Systems . . . . . 94	
<b>CHAPTER 12 SPECIAL PIPING AND STORAGE SYSTEMS . . . . . 95</b>	
Section	
1201 General . . . . . 95	
1202 Medical Gases . . . . . 95	
1203 Oxygen Systems . . . . . 95	
<b>CHAPTER 13 NONPOTABLE WATER SYSTEMS. . . . . 97</b>	
Section	
1301 General . . . . . 97	
1302 On-site Nonpotable Water Reuse Systems . . . . . 99	
1303 Nonpotable Rainwater Collection and Distribution Systems . . . . . 101	
1304 Reclaimed Water Systems . . . . . 103	
<b>CHAPTER 14 SUBSURFACE LANDSCAPE IRRIGATION SYSTEMS. . . . . 105</b>	
Section	
1401 General . . . . . 105	
1402 System Design and Sizing . . . . . 105	
1403 Installation . . . . . 106	
<b>CHAPTER 15 REFERENCED STANDARDS. . . . . 109</b>	
<b>APPENDIX A PLUMBING PERMIT FEE SCHEDULE. . . . . 121</b>	
Permit Issuance . . . . . 121	
Unit Fee Schedule . . . . . 121	
Other Inspections and Fees . . . . . 121	
	<b>APPENDIX C STRUCTURAL SAFETY. . . . . 125</b>
	Section
	C101 Cutting, Notching and Boring in Wood Members . . . . . 125
	<b>APPENDIX D DEGREE DAY AND DESIGN TEMPERATURES . . . . . 127</b>
	<b>APPENDIX E SIZING OF WATER PIPING SYSTEM. . . . . 133</b>
	Section
	E101 General . . . . . 133
	E102 Information Required. . . . . 133
	E103 Selection of Pipe Size . . . . . 133
	E201 Selection of Pipe Size . . . . . 150
	E202 Determination of Pipe Volumes. . . . . 150
	<b>APPENDIX F PROPOSED CONSTRUCTION BUILDING CODES FOR TURF AND LANDSCAPE IRRIGATION SYSTEMS . . . . . 155</b>
	<b>INDEX. . . . . 167</b>