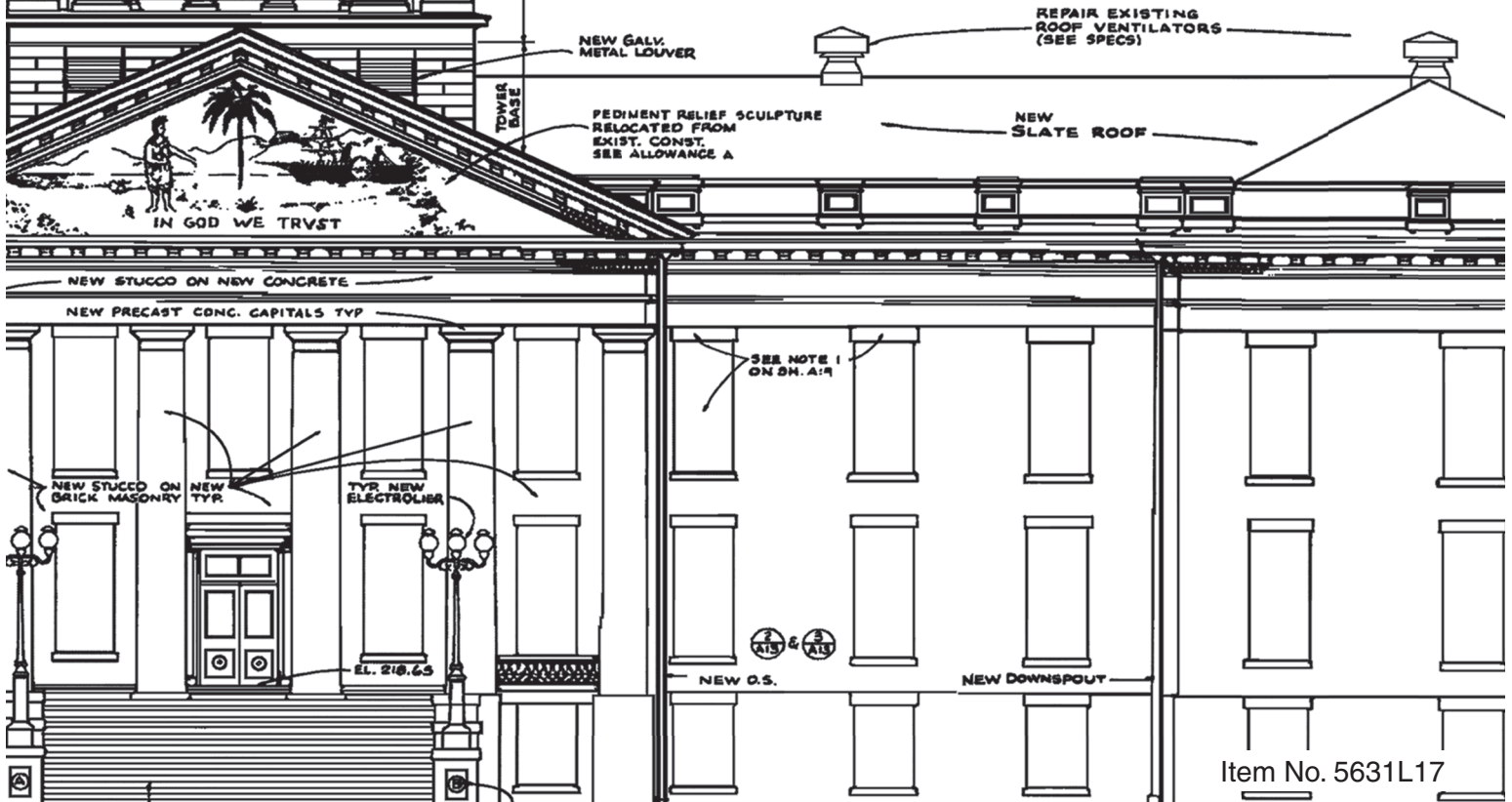


FLORIDA BUILDING CODE

Sixth Edition (2017)

Mechanical



Florida Building Code, Mechanical, 6th Edition (2017)

First Printing: July 2017

ISBN: 978-1-60983-690-0

COPYRIGHT © 2017
by
INTERNATIONAL CODE COUNCIL, INC.

ALL RIGHTS RESERVED. This *Florida Building Code, Mechanical, 6th Edition (2017)* contains substantial copyrighted materials from the 2015 *International Mechanical Code*[®], 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 Mechanical Code,” and the “IMC” 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. 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*®, 2015 edition; the *International Existing Building Code*®, 2015 edition; the *International Energy Conservation Code*®, 2015; the *National Electrical Code*, 2014 edition; substantive criteria from the 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 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) and a Binding Opinion process is available online at www.floridabuilding.org.

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

In each code development cycle, proposed changes to this code are considered at the Committee Action Hearing by the International Mechanical 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 [BG] in front of them (e.g., [BG] 309.1) are considered by the IBC — General Code Development Committee at the Committee Action Hearing.

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;
- [BF] = IBC — Fire Safety Code Development Committee;
- [BS] = IBC — Structural Code Development Committee;
- [BG] = IBC — General Code Development Committee;
- [E] = International Energy Conservation Code Development Committee;
- [F] = International Fire Code Development Committee; and
- [FG] = International Fuel Gas 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, Mechanical*, 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>CHAPTER 1 SCOPE AND ADMINISTRATION 1</p> <p>PART 1—SCOPE AND APPLICATION. 1</p> <p>Section</p> <p>101 General 1</p> <p>102 Applicability (Reserved) 1</p> <p>PART 2—ADMINISTRATION AND ENFORCEMENT. 1</p> <p>103 Department of Mechanical 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>CHAPTER 2 DEFINITIONS 3</p> <p>Section</p> <p>201 General 3</p> <p>202 General Definitions 3</p> <p>CHAPTER 3 GENERAL REGULATIONS 15</p> <p>Section</p> <p>301 General 15</p> <p>302 Protection of Structure 16</p> <p>303 Equipment and Appliance Location. 17</p> <p>304 Installation 17</p> <p>305 Piping Support 19</p> <p>306 Access and Service Space 19</p> <p>307 Condensate Disposal 21</p> <p>308 Clearance Reduction. 22</p> <p>309 Temperature Control 23</p> <p>310 Explosion Control. 24</p> <p>311 Smoke and Heat Vents 24</p> <p>312 Heating and Cooling Load Calculations 24</p>	<p>CHAPTER 4 VENTILATION 25</p> <p>Section</p> <p>401 General. 25</p> <p>402 Natural Ventilation. 25</p> <p>403 Mechanical Ventilation 26</p> <p>404 Enclosed Parking Garages 29</p> <p>405 Systems Control 29</p> <p>406 Ventilation of Uninhabited Spaces 29</p> <p>407 Ambulatory Care Facilities and Group I-2 Occupancies. 29</p> <p>CHAPTER 5 EXHAUST SYSTEMS. 35</p> <p>Section</p> <p>501 General. 35</p> <p>502 Required Systems. 36</p> <p>503 Motors and Fans. 43</p> <p>504 Clothes Dryer Exhaust. 43</p> <p>505 Domestic Kitchen Exhaust Equipment 45</p> <p>506 Commercial Kitchen Hood Ventilation System Ducts and Exhaust Equipment 45</p> <p>507 Commercial Kitchen Hoods. 50</p> <p>508 Commercial Kitchen Makeup Air 53</p> <p>509 Fire Suppression Systems 53</p> <p>510 Hazardous Exhaust Systems 53</p> <p>511 Dust, Stock and Refuse Conveying Systems. 56</p> <p>512 Subslab Soil Exhaust Systems. 56</p> <p>513 Smoke Control Systems. 57</p> <p>514 Energy Recovery Ventilation Systems 61</p> <p>515 Mausoleum Relief Vent. 61</p> <p>516 Carbon Monoxide Control Systems. 62</p> <p>CHAPTER 6 DUCT SYSTEMS. 63</p> <p>Section</p> <p>601 General. 63</p> <p>602 Plenums 64</p> <p>603 Duct Construction and Installation 66</p> <p>604 Insulation 68</p> <p>605 Air Filters. 69</p> <p>606 Smoke Detection Systems Control 69</p> <p>607 Duct and Transfer Openings 70</p>
--	--

TABLE OF CONTENTS

CHAPTER 7 COMBUSTION AIR 75

Section

701 General 75

CHAPTER 8 CHIMNEYS AND VENTS..... 77

Section

801 General 77

802 Vents. 78

803 Connectors 79

804 Direct-vent, Integral Vent and Mechanical
Draft Systems 80

805 Factory-built Chimneys 81

806 Metal Chimneys 82

**CHAPTER 9 SPECIFIC APPLIANCES,
FIREPLACES AND SOLID FUEL-
BURNING EQUIPMENT 83**

Section

901 General 83

902 Masonry Fireplaces 83

903 Factory-built Fireplaces 83

904 Pellet Fuel-burning Appliances 83

905 Fireplace Stoves and Room Heaters. 83

906 Factory-built Barbecue Appliances 83

907 Incinerators and Crematories 83

908 Cooling Towers, Evaporative
Condensers and Fluid Coolers 84

909 Vented Wall Furnaces 84

910 Floor Furnaces 84

911 Duct Furnaces. 85

912 Infrared Radiant Heaters 85

913 Clothes Dryers 85

914 Sauna Heaters. 85

915 Engine and Gas Turbine-powered
Equipment and Appliances. 85

916 Pool and Spa Heaters 85

917 Cooking Appliances 86

918 Forced-air Warm-air Furnaces 86

919 Conversion Burners 86

920 Unit Heaters 86

921 Vented Room Heaters 86

922 Kerosene and Oil-fired Stoves 86

923 Small Ceramic Kilns 86

924 Stationary Fuel Cell Power Systems 86

925 Masonry Heaters. 86

926 Gaseous Hydrogen Systems 87

927 Radiant Heating Systems 87

928 Evaporative Cooling Equipment 87

**CHAPTER 10 BOILERS, WATER HEATERS
AND PRESSURE VESSELS..... 89**

Section

1001 General 89

1002 Water Heaters 89

1003 Pressure Vessels 89

1004 Boilers 90

1005 Boiler Connections 91

1006 Safety and Pressure Relief Valves
and Controls 91

1007 Boiler Low-water Cutoff 91

1008 Bottom Blowoff Valve 91

1009 Hot Water Boiler Expansion Tank 92

1010 Gauges 92

1011 Tests 92

CHAPTER 11 REFRIGERATION 93

Section

1101 General 93

1102 System Requirements 93

1103 Refrigeration System Classification 94

1104 System Application Requirements 99

1105 Machinery Room, General Requirements. 100

1106 Machinery Room, Special Requirements 101

1107 Refrigerant Piping 102

1108 Field Test 103

1109 Periodic Testing 103

CHAPTER 12 HYDRONIC PIPING..... 105

Section

1201 General 105

1202 Material 105

1203 Joints and Connections 106

1204 Pipe Insulation 107

1205 Valves 108

1206 Piping Installation 108

1207 Transfer Fluid 108

1208 Tests 108

1209 Embedded Piping 109

1210 Plastic Pipe Ground-source Heat Pump
Loop Systems 109

**CHAPTER 13 FUEL OIL PIPING
AND STORAGE 113**

Section

1301 General 113

1302 Material 113

1303 Joints and Connections 113

1304 Piping Support..... 114

1305 Fuel Oil System Installation 114

1306 Oil Gauging..... 114

1307 Fuel Oil Valves 115

1308 Testing..... 115

CHAPTER 14 SOLAR SYSTEMS 117

Section

1401 General 117

1402 Installation..... 117

1403 Heat Transfer Fluids 118

1404 Materials 118

CHAPTER 15 REFERENCED STANDARDS 119

**APPENDIX A CHIMNEY CONNECTOR
PASS-THROUGHS..... 129**

**APPENDIX B RECOMMENDED PERMIT
FEE SCHEDULE 131**

INDEX 133