

**Significant Changes to the
International Plumbing Code®
International Mechanical Code®
International Fuel Gas Code®**

2024 Edition

International Code Council Staff:

Executive Vice President of the Content and
Services Group:

Mark A. Johnson

Senior Vice President, Business and Product
Development:

Hamid Naderi

Vice President and Technical Director, Products
and Services:

Doug Thornburg

Marketing Manager:

Joram Suede

Product Development Coordinator and Analyst:

Isabella Monteiro

Project Manager:

Sandra Hyde

Publications Manager:

Anne F. Kerr

Manager of Publications Production:

Jen Fitzsimmons

Editor:

Stephanie Curtiss

Production Technician:

Linda Foegen

Cover Design:

Stephanie Hess

COPYRIGHT © 2024
by INTERNATIONAL CODE COUNCIL, INC.

ALL RIGHTS RESERVED.



ISBN: 978-1-962103-88-6 (soft-cover edition)

ISBN: 978-1-962103-89-3 (PDF download)

This publication is a copyrighted work owned by the International Code Council, Inc. ("ICC"). Without separate written permission from the ICC, no part of this publication 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 and/or retrieval system). For information on use rights and permissions, please contact: ICC Publications, 4051 Flossmoor Road, Country Club Hills, Illinois 60478; 1-888-ICC-SAFE (422-7233); <https://www.iccsafe.org/about/periodicals-and-newsroom/icc-logo-license/>.

The information contained in this document is believed to be accurate; however, it is being provided for informational purposes only and is intended for use only as a guide. Publication of this document by the ICC should not be construed as the ICC engaging in or rendering engineering, legal or other professional services. Use of the information contained in this publication should not be considered by the user as a substitute for the advice of a registered professional engineer, attorney or other professional. If such advice is required, it should be sought through the services of a registered professional engineer, licensed attorney or other professional.

Trademarks: "International Code Council," the "International Code Council" logo, "ICC," the "ICC" logo, "International Plumbing Code," "IPC," "International Mechanical Code," "IMC," "International Fuel Gas Code," "IFGC" and other names and trademarks appearing in this publication are registered trademarks of the International Code Council, Inc., and/or its licensors (as applicable), and may not be used without permission.

Errata on various ICC publications may be available at www.iccsafe.org/errata.

First Printing: July 2024

PRINTED IN THE USA

Contents



PART 1

International Plumbing Code Chapters 1 through 15

■ 104 Code Official Duties	5	■ 403.1.1, 403.1.2 Fixtures in Single-User Rooms	27
■ 202 Definition of Ambulatory Care Facility	10	■ 403.2.1 Separated Single-Use Rooms	29
■ 202 Definition of Copper Alloy	11	■ 403.3.6 Door Locks	30
■ 202 Definitions of Family or Assisted-Use Bathing Rooms and Toilet Facilities	12	■ 403.4 Signage for Toilet Facilities	32
■ 202 Definition of Service Sink	14	■ 407.2 Bathtub Overflows	33
■ 202 Definitions of Single- and Multiple-User Toilet Facilities	15	■ 412.2 Hand-Held Shower Backflow	34
■ 305.8 Plumbing Installation on Expansive Soil	17	■ 412.10 Head Shampoo Sinks	35
■ 306.2.4 Tracer Wire Required	19	■ 412.12 Water Dispensers	36
■ 311.1 Nonsewered Type Toilet Facilities	20	■ 419.6 Soap Dispensers	37
■ 312.4 Vacuum Testing for DWV Piping	21	■ 423.3 Footbaths and Pedicure Baths	38
■ Table 403.1 Fixture Ratios	22	■ 424.2 Urinals	39
		■ 501.9 Water Heaters	40
		■ 504.7 Plastic Water Heater Drip Pans	41

■ Table 604.4 Showerheads	43	■ 504.10 Commercial Clothes Dryers	76
■ 605.14.2, 605.15.2 Solvent Cement	45	■ 505.3 Exhaust Ducts	78
■ 607.2.1 Piping Length	47	■ 505.7, 505.8 Group I-1, I-2 Occupancies	80
■ 702.6, 901.3, 902.1.1 Chemical Waste Piping	48	■ 506.3.2.5 Grease Duct Test	83
■ 705.2.4, 705.10.5 Plastic DWV Piping	50	■ 506.3.2.5.1 Light Test	85
		■ 506.3.2.5.2 Water Spray Test	86
		■ 507.1 Commercial Kitchen Hoods	87
		■ 507.1.3 Fuel-Burning Appliances	90
		■ 601.5 Return Air Openings	92
		■ 604.3 Duct Covers and Linings	94
		■ 607.6.1 Through Penetrations	96
		■ 931 Steam Bath Equipment	98
		■ 1001.1 Pressure Vessels	99
		■ 1101.1.1 Refrigerants Other Than Ammonia	101
		■ 1101.1.2 Ammonia Refrigerant	103
		■ 1101.2.1 Group A2L, A2, A3 and B1 Refrigerants	104
		■ 1101.7, Table 1103.1 Changing Refrigerant	105
		■ 1102.2.1 Mixing Refrigerants	107
		■ 1104.3.1 Air Conditioning	109
		■ 1104.3.2, Table 1103.1 Group A2, A3, B2 and B3 Refrigerants	111
PART 2 International Mechanical Code Chapters 1 through 15	53		
■ 104 Code Official Duties	56		
■ 202 Definition of Ambulatory Care Facility	57		
■ 202 Definition of Draftstop	58		
■ 202 Definition of Grease Duct	59		
■ 306.5 Equipment and Appliances on Roofs or Elevated Structures	60		
■ 401.4 Intake Opening Location	62		
■ 403.3 Group R-2, R-3 and R-4 Occupancies	63		
■ Table 403.3.1.1 Minimum Ventilation Rates—Toilet Rooms	65		
■ Table 403.3.1.1 Minimum Ventilation Rates—Animal Facilities	67		
■ Table 403.3.1.1 Minimum Ventilation Rates—Outpatient Healthcare Facilities	69		
■ Table 403.3.1.1 Minimum Ventilation Rates—Workrooms	72		
■ 501.6 Common Ducts	74		

■ 1106.4	Group A2L and B2L Refrigerants	113		
■ 1109.2.3	Prohibited Locations	116		
■ 1109.2.6	Exposed Piping Surface Temperature	117		
■ 1109.2.7	Pipe Identification	118		
■ 1109.3	Installation of Refrigerants	119		
■ 1209.6	Radiant Tubing	122		
■ 1209.7	Snow- & Ice-Melt Tubing	124		
			PART 3	
			<i>International Fuel Gas Code</i>	
			Chapters 1 through 8	129
			■ 104	
			Code Official Duties	131
			■ 403.11.3	
			Piping Materials	132
			■ 406.5.1	
			Leak Detection	133
			■ 406.7.3.1	
			Inspection, Testing and Purgings	134
			■ 407.2	
			Piping Support	135
			PART 4	
			Code Changes	137

Preface

The purpose of *Significant Changes to the International Plumbing Code*[®], *International Mechanical Code*[®], *International Fuel Gas Code*[®] 2024 Edition is to familiarize plumbing and mechanical officials, building officials, fire officials, plans examiners, inspectors, design professionals, contractors and others in the building construction industry with many of the important changes to these codes. This publication is designed to assist code users in identifying the specific code changes that have occurred and, more importantly, in understanding the reasons behind the changes. It is also a valuable resource for jurisdictions in their code-adoption process.

Only portions of the total number of code changes to the *International Plumbing Code*, *International Mechanical Code* and *International Fuel Gas Code* are discussed in this book. The changes selected were identified for a number of reasons, including their frequency of application, special significance or change in application. However, the importance of the changes not included is not to be diminished. Further information on all code changes can be found in the *Revision History to the 2024 I-Codes: Successful Changes and Public Comments*, available from the International Code Council[®] (ICC[®]) online store, <http://shop.iccsafe.org>. This resource collection provides the published documentation for each successful code change contained in the 2024 I-Codes.

This *Significant Changes* book presents first the 2024 plumbing changes, then the 2024 mechanical changes followed by the 2024 fuel gas changes. Throughout this *Significant Changes* book, each change is accompanied by a photograph or an illustration to assist and enhance the reader's understanding of the specific change. A summary and a discussion of the significance of the change are also provided. Each code change is identified by type, be it an addition, modification, clarification or deletion.

The code change itself is presented in a legislative format similar to the style utilized for code-change proposals. Deleted code language is shown with a strike-through, and new code text is indicated by underlining. As a result, the actual 2024 code language is provided as well as a comparison with the 2021 language, so the user can easily determine changes to the specific code text.

As with any code-change text, *Significant Changes to the International Plumbing Code*, *International Mechanical Code*, *International Fuel Gas Code*

2024 Edition is best used as a companion to the 2024 IPC, 2024 IMC and 2024 IFGC. Because only a limited discussion of each change is provided, the reader should reference the code itself to gain a more comprehensive understanding of the code change and its application.

The commentary and opinions set forth in this text are those of the authors and do not necessarily represent the official position of ICC. In addition, they may not represent the views of any enforcing agency, as such agencies have the sole authority to render interpretations of the IPC, IMC and IFGC. In many cases, the explanatory material is derived from the reasoning expressed by code-change proponents.

Comments concerning this publication are encouraged and may be directed to ICC at significantchanges@iccsafe.org.

About the *International Plumbing Code, International Mechanical Code and International Fuel Gas Code*

Code officials, design professionals, contractors and others involved in the building construction industry recognize the need for modern, up-to-date codes addressing the design and installation of plumbing, mechanical and fuel gas systems through both prescriptive and performance requirements. The 2024 editions of the *International Plumbing Code* (IPC®), *International Mechanical Code* (IMC®) and *International Fuel Gas Code* (IFGC®) are intended to meet these needs through model code regulations that safeguard the public health and safety in all communities, large and small. The IPC, IMC and IFGC are kept up to date through ICC's open code-development process. The provisions of the 2021 editions, along with those code changes approved through 2022, make up the 2024 editions.

The IPC, IMC and IFGC are three codes in a family of International Codes® published by ICC. These comprehensive codes establish minimum regulations for plumbing, mechanical and fuel gas systems by means of prescriptive and performance-related provisions, and are founded on broad-based principles that make possible the use of new materials and new system designs. The IPC, IMC and IFGC are available for adoption and use by jurisdictions internationally. Their use within a governmental jurisdiction is intended to be accomplished through adoption by reference, in accordance with proceedings establishing the jurisdiction's laws.

Acknowledgments

Significant Changes to the International Plumbing Code, International Mechanical Code, International Fuel Gas Code, 2024 Edition, is the result of a collaborative effort, and the authors are grateful for the assistance and contributions by the following talented staff of ICC Product Development: Sandra Hyde, PE, Managing Director and Jessie Sorensen, Technical Staff and ICC's Publications group: Stephanie Curtiss, Editor and Linda Foegen, Production Technician.

About the Authors

Fred Grable, P.E.

International Code Council

Senior Staff Engineer, Technical Services

Fred Grable, ICC Senior Staff Engineer and former master plumber, brings extensive experience as both a plumbing contractor and engineer. He has nearly two decades of experience as an engineer for an industrial pressure piping manufacturer and in wastewater treatment equipment field services. He also founded his own plumbing company and managed new construction, remodeling, and repair of residential and commercial plumbing and gas systems. Fred is a registered professional engineer in two states. He has worked for the ICC for over ten years in the Codes and Standards Department and is the Secretariat for the *International Plumbing Code* (IPC) and the plumbing portion of the *International Residential Code*® (IRC®), the *International Private Sewage Disposal Code*® (IPSDC®), the *International Swimming Pool and Spa Code*® (ISPSC®) and the residential provisions of the *International Energy Conservation Code*® (IECC®).

George Williams, MCP

West Coast Code Consultants

Senior Plans Examiner

George Williams is an ICC Master Code Professional since 2009 and specializes in mechanical, plumbing, electrical and energy plan reviews and inspections with West Coast Code Consultants. George has a Master's Degree in Construction Management from Brigham Young University and continues to be involved in various research projects related to the construction industry. He was first certified in 2005 at the age of 23 years old, and has been fascinated with codes, standards and regulations ever since. George also regularly teaches code seminars for ICC chapter meetings, design professionals, and through online platforms.

Jason Toves

International Code Council

Senior Technical Staff

Jason Toves, ICC Senior Technical Staff, has worked with ICC Technical Services for over a decade. He provides technical opinions for members with a focus on the IECC, IgCC, IMC, IFGC and IPC. He has been responsible for building, mechanical, plumbing, fuel gas and energy code plan reviews for ICC. Other duties that he has performed for ICC are technical training, software review and commentary production. He is the Secretariat for the *International Fuel Gas Code* (IFGC) and the mechanical portion of the *International Residential Code* (IRC) and assisted with the code development of the *International Energy Conservation Code* (IECC). He has over twenty years of design experience with mechanical, fuel gas and plumbing systems for residential, commercial, industrial and medical facilities and buildings.

About the International Code Council®

The International Code Council is the leading global source of model codes and standards and building safety solutions that include product evaluation, accreditation, technology, codification, consulting, training and certification. The International Code Council’s codes, standards and solutions are used to ensure safe, affordable and sustainable communities and buildings worldwide.

The International Code Council family of solutions includes the ICC Evaluation Service (ICC ES), S. K. Ghosh Associates, the International Accreditation Service (IAS), General Code, ICC NTA, ICC Community Development Solutions, Alliance for National & Community Resilience (ANCR) and American Legal Publishing.

Headquarters

200 Massachusetts Avenue, NW, Suite 250
Washington, DC 20001
888-ICC-SAFE (888-422-7233)
www.iccsafe.org

Eastern Regional Office

900 Montclair Road
Birmingham, AL 35213

Central Regional Office

4051 Flossmoor Road
Country Club Hills, IL 60478

Western Regional Office

3060 Saturn Street, Suite 100
Brea, CA 92821

MENA Regional Office

Dubai Association Centre Offices, One Central
Building 2, Office 8, Dubai World Trade Centre Complex
PO Box 9292, Dubai, UAE

OCEANIA Regional Office

Level 9, Nishi Building
2 Philips Law Street
Canberra ACT 2601 Australia

Family of Solutions:

