

# 2015 COMMENTA

## **COMMENTARY**

VOLUME 2

The complete IFC with commentary after each section



#### 2015 International Fire Code® Commentary

First Printing: July 2015

ISBN: 978-1-60983-286-5 (soft-cover edition)

 $\begin{array}{c} \text{COPYRIGHT} © 2015 \\ \text{by} \\ \text{INTERNATIONAL CODE COUNCIL, INC.} \end{array}$ 

ALL RIGHTS RESERVED. This 2015 *International Fire Code® Commentary—Volume II* is a copyrighted work owned by the International Code Council, Inc. Without advance written permission from the copyright owner, no part of this book 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 permission to copy material exceeding fair use, please contact: Publications, 4051 Flossmoor Road, Country Club Hills, IL 60478. Phone 1-888-ICC-SAFE (422-7233).

Trademarks: "International Code Council," the "International Code Council" logo and the "International Fire Code" are trademarks of the International Code Council, Inc.

#### **PREFACE**

The principal purpose of the Commentary is to provide a basic volume of knowledge and facts relating to building construction as it pertains to the regulations set forth in the 2015 *International Fire Code*. The person who is serious about effectively designing, constructing and regulating buildings and structures will find the Commentary to be a reliable data source and reference to almost all components of the built environment.

As a follow-up to the *International Fire Code*, we offer a companion document, the *International Fire Code Commentary—Volume II*. Volume II covers Chapters 20 through 80 and Appendices A through M of the 2015 *International Fire Code*. The basic appeal of the Commentary is thus: it provides in a small package and at reasonable cost thorough coverage of many issues likely to be dealt with when using the *International Fire Code*— and then supplements that coverage with historical and technical background. Reference lists, information sources and bibliographies are also included.

Throughout all of this, effort has been made to keep the vast quantity of material accessible and its method of presentation useful. With a comprehensive yet concise summary of each section, the Commentary provides a convenient reference for regulations applicable to the construction of buildings and structures. In the chapters that follow, discussions focus on the full meaning and implications of the code text. Guidelines suggest the most effective method of application, and the consequences of not adhering to the code text. Illustrations are provided to aid understanding; they do not necessarily illustrate the only methods of achieving code compliance.

The format of the Commentary includes the full text of each section, table and figure in the code, followed immediately by the commentary applicable to that text. At the time of printing, the Commentary reflects the most up-to-date text of the 2015 *International Fire Code*. Each section's narrative includes a statement of its objective and intent, and usually includes a discussion about why the requirement commands the conditions set forth. Code text and commentary text are easily distinguished from each other. All code text is shown as it appears in the *International Fire Code*, and all commentary is indented below the code text and begins with the symbol .

Readers should note that the Commentary is to be used in conjunction with the *International Fire Code* and not as a substitute for the code. The Commentary is advisory only; the code official alone possesses the authority and responsibility for interpreting the code.

Comments and recommendations are encouraged, for through your input, we can improve future editions. Please direct your comments to the Codes and Standards Development Department at the Chicago District Office.

The International Code Council would like to extend its thanks to the following individuals for their contributions to the technical content of this commentary:

Jeff Hugo Elley Klausbruckner

#### Arrangement and Format of the 2015 IFC

Before applying the requirements of the IFC it is beneficial to understand its arrangement and format. The IFC, like other codes published by the International Code Council, is arranged and organized to follow sequential steps that generally occur during a plan review or inspection. The 2015 IFC is organized into seven Parts as illustrated in the tables below. Each Part represents a broad subject matter and includes the chapters that logically fit under the subject matter of each Part. It is also foreseeable that additional chapters will need to be added in the future as regulations for new processes or operations are developed. Accordingly, the reorganization was designed to accommodate such future chapters by providing reserved (unused) chapters in several of the Parts. This will allow the subject matter parts to be conveniently and logically expanded without requiring a major renumbering of the IFC chapters.

2015 ORGANIZATION OF THE IFC		
Parts and Chapters	Subject Matter	
Part I – Chapters 1 and 2	Administrative and definitions	
Part II – Chapters 3 and 4	General safety provisions	
Part III – Chapters 5 through 11	Building and equipment design features	
Part III – Chapters 12 through 19	Reserved for future use	
Part IV – Chapters 20 through 37	Special occupancies and operations	
Part IV – Chapters 38 through 49	Reserved for future use	
Part V – Chapters 50 through 67	Hazardous materials	
Part V – Chapters 68 through 79	Reserved for future use	
Part VI – Chapter 80	Referenced standards	
Part VII – Appendices A through M	Adoptable and informational appendices	

The IFC requirements for fire-resistive construction, interior finish, fire protection systems, means of egress and construction safeguards are directly correlated to the chapters containing parallel requirements in the IBC, as follows:

IFC Chapter	Subject
7	Fire and smoke protection features
8	Interior finish, decorative materials and furnishings
9	Fire protection systems
10	Means of egress
33	Fire safety during construction and demolition

### **TABLE OF CONTENTS**

Part IV—Specia	d Occupancies and Operations
CHAPTER 20	AVIATION FACILITIES
CHAPTER 21	DRY CLEANING
CHAPTER 22	COMBUSTIBLE DUST-PRODUCING OPERATIONS
CHAPTER 23	MOTOR FUEL-DISPENSING FACILITIES AND REPAIR GARAGES
CHAPTER 24	FLAMMABLE FINISHES
CHAPTER 25	FRUIT AND CROP RIPENING
CHAPTER 26	FUMIGATION AND INSECTICIDAL FOGGING
CHAPTER 27	SEMICONDUCTOR FABRICATION FACILITIES
CHAPTER 28	LUMBER YARDS AND AGRO-INDUSTRIAL, SOLID BIOMASS AND WOODWORKING FACILITIES
CHAPTER 29	MANUFACTURE OF ORGANIC COATINGS
CHAPTER 30	INDUSTRIAL OVENS
CHAPTER 31	TENTS AND OTHER MEMBRANE STRUCTURES
CHAPTER 32	HIGH-PILED COMBUSTIBLE STORAGE 32-1 – 32-30
CHAPTER 33	FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION
CHAPTER 34	TIRE REBUILDING AND TIRE STORAGE
CHAPTER 35	WELDING AND OTHER HOT WORK
CHAPTER 36	MARINAS
CHAPTER 37	COMBUSTIBLE FIBERS
CHAPTERS 38	- 49 RESERVED
Part V—Hazard	ous Materials50-1
CHAPTER 50	HAZARDOUS MATERIALS—GENERAL PROVISIONS

CHAPTER 51	AEROSOLS	51-1 – 51-16
CHAPTER 52	RESERVED	
CHAPTER 53	COMPRESSED GASES	53-1 – 53-18
CHAPTER 54	CORROSIVE MATERIALS	54-1 – 54-4
CHAPTER 55	CRYOGENIC FLUIDS	55-1 – 55-12
CHAPTER 56	EXPLOSIVES AND FIREWORKS	56-1 – 56-34
CHAPTER 57	FLAMMABLE AND COMBUSTIBLE LIQUIDS	57-1 – 57-86
CHAPTER 58	FLAMMABLE GASES AND FLAMMABLE CRYOGENIC FLUIDS	58-1 – 58-14
CHAPTER 59	FLAMMABLE SOLIDS	59-1 – 59-8
CHAPTER 60	HIGHLY TOXIC AND TOXIC MATERIALS	60-1 – 60-20
CHAPTER 61	LIQUEFIED PETROLEUM GASES	61-1 – 61-18
CHAPTER 62	ORGANIC PEROXIDES	62-1 – 62-8
CHAPTER 63	OXIDIZERS, OXIDIZING GASES AND OXIDIZING CRYOGENIC FLUIDS	63-1 – 63-12
CHAPTER 64	PYROPHORIC MATERIALS	64-1 – 64-6
CHAPTER 65	PYROXYLIN (CELLULOSE NITRATE) PLASTICS	65-1 – 65-4
CHAPTER 66	UNSTABLE (REACTIVE) MATERIALS	66-1 – 66-6
CHAPTER 67	WATER-REACTIVE SOLIDS AND LIQUIDS	67-1 – 67-6
CHAPTERS 68	3 – 79 RESERVED	
Part VI—Refere	enced Standards	80-1
CHAPTER 80	REFERENCED STANDARDS	80-1 – 80-14
Part VII—Appe	ndices	A-1
APPENDIX A	BOARD OF APPEALS	A-1 – A-4
APPENDIX B	FIRE-FLOW REQUIREMENTS FOR BUILDINGS	B-1 – B-8
APPENDIX C	FIRE HYDRANT LOCATIONS AND DISTRIBUTION	C-1 – C-6
APPENDIX D	FIRE APPARATUS ACCESS ROADS	D-1 – D-6

APPENDIX E	HAZARD CATEGORIES. E-1 – E-	-14
APPENDIX F	HAZARD RANKINGF-1 – F	F-4
APPENDIX G	CRYOGENIC FLUIDS—WEIGHT AND VOLUME EQUIVALENTS	3-4
APPENDIX H	HAZARDOUS MATERIALS MANAGEMENT PLAN (HMMP) AND HAZARDOUS MATERIALS INVENTORY STATEMENT (HMIS) INSTRUCTIONS	-10
APPENDIX I	FIRE PROTECTION SYSTEMS—NONCOMPLIANT CONDITIONS	I-4
APPENDIX J	BUILDING INFORMATION SIGNS	J-4
APPENDIX K	CONSTRUCTION REQUIREMENTS FOR EXISTING AMBULATORY CARE FACILITIES	ζ-6
APPENDIX L	REQUIREMENTS FOR FIRE FIGHTER AIR REPLENISHMENT SYSTEMS L-1 - I	∟-6
APPENDIX M	HIGH-RISE BUILDINGS— RETROACTIVE AUTOMATIC SPRINKLER REQUIREMENT	1-2
INDEX .		-32