



**IBC<sup>®</sup>**

**2015**

**CODE AND  
COMMENTARY**

VOLUME **2**

The complete IBC with  
commentary after each  
section



**IBC<sup>®</sup>**

**2015**

**CODE AND  
COMMENTARY**

**VOLUME 2**

The complete IBC with  
commentary after each  
section



2015 International Building Code® Commentary

First Printing: March 2015

ISBN: 978-1-60983-282-7 (soft-cover edition)

COPYRIGHT © 2015  
by  
INTERNATIONAL CODE COUNCIL, INC.

ALL RIGHTS RESERVED. This 2015 *International Building 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 Building Code” are trademarks of the International Code Council, Inc.

PRINTED IN THE U.S.A.

# 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 Building 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 Building Code*, we offer a companion document, the *International Building Code Commentary—Volume II*. Volume II covers Chapters 16 through 35 of the 2015 *International Building 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 Building 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 Building Code*. As stated in the preface to the *International Building Code*, the content of sections in the code which begin with a letter designation (i.e., Section [F]307.1) are maintained by another code development committee. 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 Building 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 Building 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:

Brian Black	Kevin Brinkman
John Woestman	Gregory Cahanin
David Cooper	Rebecca Quinn
Dave Collins	Joann Surmar
Vickie Lovell	James Milke
John Valiulis	Richard Walke
Marcelo Hirschler	Dave Frable
Jeff Hugo	Elley Klausbruckner
Dick Bukowski	

### S.I. CONVERSION CHART FOR ENGLISH UNITS

English Unit	Metric Equivalent
1 inch (in.)	25.4 millimeters (mm)
1 foot (ft.)	304.8 millimeters (mm)
1 square inch (in <sup>2</sup> )	645.2 square millimeters (mm <sup>2</sup> )
1 square foot (ft <sup>2</sup> )	0.093 square meters (m <sup>2</sup> )
1 cubic foot (ft <sup>3</sup> )	0.028 cubic meters (m <sup>3</sup> )
1 gallon (gal.)	.00379 cubic meters (m <sup>3</sup> )
1 gallon (gal.)	3.79 liters (L)
1 pound (lb.)	0.454 kilograms (kg)
1 ton (T)	0.907 metric ton
1 ton (T)	907.2 kilograms (kg)
1 pound per square inch (psi)	6.894 kilo- Pascals (kPa)
1 pound per square inch (psi)	.0703 kilogram force per square centimeter
1 pound per square foot (psf)	47.88 Pascals (Pa)
1 pound per square foot (psf)	47.88 Newton per square meter (N/m <sup>2</sup> )
1 foot candle	10.764 lux
1 inch water column	248.84 Pascal
1 degree	0.01745 radian
1 Btu/hr	0.2931 Watt
Temperature degrees Fahrenheit	1.8 x degrees C + 32.

# TABLE OF CONTENTS

CHAPTER 16	STRUCTURAL DESIGN.....	16-1 – 16-90
CHAPTER 17	SPECIAL INSPECTIONS AND TESTS .....	17-1 – 17-28
CHAPTER 18	SOILS AND FOUNDATIONS.....	18-1 – 18-80
CHAPTER 19	CONCRETE .....	19-1 – 19-20
CHAPTER 20	ALUMINUM .....	20-1 – 20-2
CHAPTER 21	MASONRY .....	21-1 – 21-40
CHAPTER 22	STEEL .....	22-1 – 22-10
CHAPTER 23	WOOD .....	23-1 – 23-118
CHAPTER 24	GLASS AND GLAZING .....	24-1 – 24-28
CHAPTER 25	GYPSUM BOARD, GYPSUM PANEL PRODUCTS AND PLASTER .....	25-1 – 25-24
CHAPTER 26	PLASTIC .....	26-1 – 26-32
CHAPTER 27	ELECTRICAL.....	27-1 – 27-4
CHAPTER 28	MECHANICAL SYSTEMS.....	28-1 – 28-2
CHAPTER 29	PLUMBING SYSTEMS.....	29-1 – 29-20
CHAPTER 30	ELEVATORS AND CONVEYING SYSTEMS.....	30-1 – 30-26
CHAPTER 31	SPECIAL CONSTRUCTION .....	31-1 – 31-20
CHAPTER 32	ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY .....	32-1 – 32-6
CHAPTER 33	SAFEGUARDS DURING CONSTRUCTION.....	33-1 – 33-8
CHAPTER 34	RESERVED .....	34-1 – 34-2
CHAPTER 35	REFERENCED STANDARDS .....	35-1 – 35-26
APPENDIX A	EMPLOYEE QUALIFICATIONS .....	A-1 – A-2
APPENDIX B	BOARD OF APPEALS.....	B-1 – B-4
APPENDIX C	GROUP U — AGRICULTURAL BUILDINGS .....	C-1 – C-4

**TABLE OF CONTENTS**

**APPENDIX D FIRE DISTRICTS..... D-1 – D-8**

**APPENDIX E SUPPLEMENTARY ACCESSIBILITY REQUIREMENTS..... E-1 – E-12**

**APPENDIX F RODENTPROOFING .....F-1 – F-2**

**APPENDIX G FLOOD-RESISTANT CONSTRUCTION..... G-1 – G-18**

**APPENDIX H SIGNS..... H-1 – H-10**

**APPENDIX I PATIO COVERS.....I-1 – I-2**

**APPENDIX J GRADING ..... J-1 – J-8**

**APPENDIX K ADMINISTRATIVE PROVISIONS..... K-1 – K-4**

**APPENDIX L EARTHQUAKE RECORDING INSTRUMENTATION..... L-1 – L-2**

**APPENDIX M TSUNAMI-GENERATED FLOOD HAZARD ..... M-1 – M-4**

**INDEX ..... INDEX-1 – INDEX-38**