SIRC NCODE AND COMMENTARY Volume 2



2012 International Residential Code[®] Commentary

First Printing: December 2011

ISBN: 978-1-60983-065-6 (soft-cover edition)

 $\begin{array}{c} \text{COPYRIGHT} © 2011 \\ \text{by} \\ \text{INTERNATIONAL CODE COUNCIL, INC.} \end{array}$

ALL RIGHTS RESERVED. This 2012 *International Residential 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 West Flossmoor Road, Country Club Hills, IL 60478-5795. Phone 1-888-ICC-SAFE (422-7233).

Trademarks: "International Code Council," the "International Code Council" logo and the "International Residential 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 2012 *International Residential 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 Residential Code*, we offer a companion document, the *International Residential Code-Code and Commentary—Volume II*. Volume II covers Chapters 12 through Appendix Q of the 2012 *International Residential Code*. The basic appeal of the Commentary is that it provides in a small package and at reasonable cost thorough coverage of many issues likely to be dealt with when using the *International Residential Code* — and then supplements that coverage with historical and technical background. Reference lists, information sources and bibliographies are also included.

Throughout all of this, strenuous 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 2012 *International Residential 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 Residential Code*, and all commentary is indented below the code text and begins with the symbol v. All code figures and tables are reproduced as they appear in the IRC. Commentary figures and tables are identified in the text by the word "Commentary" (as in "see Commentary Figure 704.3"), and each has a full border.

Readers should note that the Commentary is to be used in conjunction with the *International Residential 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.

TABLE OF CONTENTS

Part V—Mechanical			
CHAPTER 12	MECHANICAL ADMINISTRATION		
CHAPTER 13	GENERAL MECHANICAL SYSTEM REQUIREMENTS		
CHAPTER 14	HEATING AND COOLING EQUIPMENT AND APPLIANCES		
CHAPTER 15	EXHAUST SYSTEMS		
CHAPTER 16	DUCT SYSTEMS		
CHAPTER 17	COMBUSTION AIR		
CHAPTER 18	CHIMNEYS AND VENTS		
CHAPTER 19	SPECIAL APPLIANCES, EQUIPMENT AND SYSTEMS		
CHAPTER 20	BOILERS AND WATER HEATERS 20-1 – 20-8		
CHAPTER 21	HYDRONIC PIPING		
CHAPTER 22	SPECIAL PIPING AND STORAGE SYSTEMS		
CHAPTER 23	SOLAR ENERGY SYSTEMS		
Part VI—Fuel Gas			
CHAPTER 24	FUEL GAS		
Part VII—Plumbing			
CHAPTER 25	PLUMBING ADMINISTRATION		
CHAPTER 26	GENERAL PLUMBING REQUIREMENTS 26-1 – 26-24		
CHAPTER 27	PLUMBING FIXTURES		
CHAPTER 28	WATER HEATERS		
CHAPTER 29	WATER SUPPLY AND DISTRIBUTION		
CHAPTER 30	SANITARY DRAINAGE		
CHAPTER 31	VENTS		

TABLE OF CONTENTS

CHAPTER 32	TRAPS
CHAPTER 33	STORM DRAINAGE
Part VIII—Ele	ctrical
CHAPTER 34	GENERAL REQUIREMENTS
CHAPTER 35	ELECTRICAL DEFINITIONS
CHAPTER 36	SERVICES
CHAPTER 37	BRANCH CIRCUIT AND FEEDER REQUIREMENTS
CHAPTER 38	WIRING METHODS
CHAPTER 39	POWER AND LIGHTING DISTRIBUTION
CHAPTER 40	DEVICES AND LUMINAIRES
CHAPTER 41	APPLIANCE INSTALLATION
CHAPTER 42	SWIMMING POOLS
CHAPTER 43	CLASS 2 REMOTE-CONTROL, SIGNALING AND POWER-LIMITED CIRCUITS
Part IX—Refer	renced Standards
CHAPTER 44	REFERENCED STANDARDS
APPENDIX A	SIZING AND CAPACITIES OF GAS PIPING
APPENDIX B	SIZING OF VENTING SYSTEMS SERVING APPLIANCES EQUIPPED WITH DRAFT HOODS, CATEGORY I APPLIANCES, AND APPLIANCES LISTED FOR USE WITH TYPE B VENTS
APPENDIX C	EXIT TERMINALS OF MECHANICAL DRAFT AND DIRECT-VENT VENTING SYSTEMS
APPENDIX D	RECOMMENDED PROCEDURE FOR SAFETY INSPECTION OF AN EXISTING APPLIANCE INSTALLATION
APPENDIX E	MANUFACTURED HOUSING USED AS DWELLINGS E-1 – E-14
APPENDIX F	RADON CONTROL METHODS
APPENDIX G	SWIMMING POOLS, SPAS AND HOT TUBS

APPENDIX H	PATIO COVERS	H-1 – H-4
APPENDIX I	PRIVATE SEWAGE DISPOSAL	I-1 – I-2
APPENDIX J	EXISTING BUILDINGS AND STRUCTURES	J-1 – J-10
APPENDIX K	SOUND TRANSMISSION	K-1 – K-2
APPENDIX L	PERMIT FEES	L-1 – L-2
APPENDIX M	HOME DAY CARE—R-3 OCCUPANCY	M-1 – M-2
APPENDIX N	VENTING METHODS	N-1 – N-6
APPENDIX O	AUTOMATIC VEHICULAR GATES	
APPENDIX P	SIZING OF WATER PIPING SYSTEM	P-1 – P-20
APPENDIX Q	ICC INTERNATIONAL RESIDENTIAL CODE ELECTRICAL PROVISIONS/NATIONAL ELECTRICAL CODE CROSS-REFERENCE	Q1 – Q-16
INDEX		INDEX-1 – INDEX-14