

**2012 INTERNATIONAL
RESIDENTIAL CODE®
STUDY COMPANION**



2012 International Residential Code

Study Companion

ISBN: 978-1-60983-157-8

| | |
|------------------------------|----------------|
| Cover Design: | Ricky Razo |
| Publications Manager: | Mary Lou Luif |
| Project Editor: | Roger Mensink |
| Illustrator/Interior Design: | Mike Tamai |
| Manager of Development: | Doug Thornburg |

COPYRIGHT 2011



ALL RIGHTS RESERVED. This publication is a copyrighted work owned by the International Code Council. 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 and retrieval system). For information on permission to copy material exceeding fair use, please contact: ICC Publications, 4051 W. Flossmoor Rd, Country Club Hills, IL 60478, Phone 888-ICC-SAFE (422-7233).

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 workbook should not be considered by the user to be 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" and the "ICC" logo are trademarks of International Code Council, Inc.

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

First Printing: September 2011

Printed in the United States of America

37334 - T014829

TABLE OF CONTENTS

Study Session 1:

| | |
|--|----|
| 2012 IRC Chapters 1 and 44—Administration and Referenced Standards | 1 |
| Quiz | 18 |

Study Session 2:

| | |
|---|----|
| 2012 IRC Sections R301 and R302—Building Planning I | 27 |
| Quiz | 48 |

Study Session 3:

| | |
|--|----|
| 2012 IRC Sections R303 through R310—Building Planning II | 57 |
| Quiz | 75 |

Study Session 4:

| | |
|---|-----|
| 2012 IRC Sections R311 through R323—Building Planning III | 83 |
| Quiz | 105 |

Study Session 5:

| | |
|--|-----|
| 2012 IRC Chapter 4—Foundations | 113 |
| Quiz | 131 |

Study Session 6:

| | |
|-------------------------------------|-----|
| 2012 IRC Chapter 5—Floors | 139 |
| Quiz | 159 |

Study Session 7:

| | |
|---|-----|
| 2012 IRC Chapters 6 and 7—Wall Construction and Wall Covering | 167 |
| Quiz | 185 |

Study Session 8:

| | |
|---|-----|
| 2012 IRC Chapters 8 and 9—Roof/Ceiling Construction and Roof Assemblies | 193 |
| Quiz | 212 |

Study Session 9:

| | |
|---|-----|
| 2012 IRC Chapters 10 and 11—Chimneys/Fireplaces and Energy Efficiency | 221 |
| Quiz | 241 |

Study Session 10:

| | |
|--|-----|
| 2012 IRC Chapters 13 and 14—General Mechanical System Requirements and Heating/Cooling Equipment | 249 |
| Quiz | 265 |

Study Session 11:

2012 IRC Chapters 15, 16 and 19 — Exhaust Systems, Duct Systems and Special Fuel-Burning Equipment 273
Quiz 289

Study Session 12:

2012 IRC Chapters 17, 18, 20, 21, 22 and 23—Combustion Air, Chimneys and Vents, Boilers/Water Heaters, Hydronic Piping, Special Piping and Storage Systems, and Solar Systems. 297
Quiz 311

Study Session 13:

2012 IRC Chapter 24—Fuel Gas 319
Quiz 338

Study Session 14:

2012 IRC Chapters 25, 26 and 27—General Plumbing Requirements and Plumbing Fixtures 347
Quiz 364

Study Session 15:

2012 IRC Chapters 28, 29 and 30—Water Heaters, Water Supply and Distribution, and Sanitary Drainage 373
Quiz 391

Study Session 16:

2012 IRC Chapters 31, 32 and 33—Vents, Traps and Storm Drainage 399
Quiz 416

Study Session 17:

2012 IRC Chapters 34, 35, 36 and 37—General Electrical Requirements, Definitions, Services, and Branch Circuits and Feeder Requirements. 425
Quiz 442

Study Session 18:

2012 IRC Chapters 38, 39, 40, 41 and 42—Lighting Distribution, Devices and Lighting Fixtures, Appliance Installation and Swimming Pools 451
Quiz 469

Answer Keys 477

INTRODUCTION

This study companion provides practical learning assignments for independent study of the provisions of the 2012 *International Residential Code (IRC®)*. The independent study format affords a method for the student to complete the program in an unregulated time period. Progressing through the workbook, the learner can measure his or her level of knowledge by using the exercises and quizzes provided for each study session.

The workbook is also valuable for instructor-led programs. In jurisdictional training sessions, community college classes, vocational training programs and other structured educational offerings, the study guide and the IRC can be the basis for classroom instruction.

All study sessions begin with a general learning objective specific to the session, the specific code sections or chapter under consideration and a list of questions summarizing the key points of study. Each session addresses selected topics from the IRC and includes code text, a commentary on the code provisions, illustrations representing the provisions under discussion and multiple choice questions that can be used to evaluate the student's knowledge. Before beginning the quizzes, the student should thoroughly review the IRC, focusing on the key points identified at the beginning of each study session.

The workbook is structured so that after every question the student has an opportunity to record his or her response and the corresponding code reference. The correct answers are found in the back of the workbook in the answer key.

This study companion was developed by Douglas W. Thornburg, AIA, C.B.O., Technical Director of Product Development for the International Code Council. In addition to authoring numerous educational texts and resource materials, he instructs seminars nationally on both the IBC and IRC. Doug has more than 30 years experience in the application and enforcement of building codes.

The information presented in this publication is believed to be accurate; however, it is provided for informational purposes only and is intended for use only as a guide. As there is a limited discussion of selected code provisions, the code itself should always be referenced for more complete information. In addition, the commentary set forth may not necessarily represent the views of any enforcing agency, as such agencies have the sole authority to render interpretations of the IRC.

Questions or comments concerning this study companion are encouraged. Please direct your comments to ICC at studycompanion@iccsafe.org.

About the International Code Council

The International Code Council® (ICC®) is a member-focused association dedicated to helping the building safety community and construction industry provide safe, sustainable and affordable construction through the development of codes and standards used in the design, build and compliance processes. Most U.S. communities and many global markets choose the International Codes®. ICC Evaluation Service (ICC-ES), a subsidiary of the International Code Council, has been the industry leader in performing technical evaluations for code compliance fostering safe and sustainable design and construction.

Headquarters: 500 New Jersey Avenue, NW, 6th Floor, Washington, DC 20001-2070

District offices: Birmingham, AL; Chicago, IL; Los Angeles, CA

1-888-422-7233

www.iccsafe.org