



This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional service. If legal advice or other expert assistance is required, the services of a competent professional person should be sought.

President: Roy Lipner
Publisher and Director of Distance Learning: Evan M. Butterfield
Senior Development Editor: Laurie McGuire
Content Consultant: Alan Carson
Production Coordinator: Daniel Frey
Creative Director: Lucy Jenkins

© 2003
Carson Dunlop & Associates Limited. All rights reserved.

Published by Dearborn™ Real Estate Education
a Division of Dearborn Financial Publishing, Inc.®
a Kaplan Professional Company®
30 South Wacker Drive
Chicago, IL 60606-7481
www.dearbornRE.com

All rights reserved. The text of this publication, or any part thereof, may not be reproduced in any manner whatsoever without written permission in writing from the publisher.

Printed in the United States of America.

03 04 05 10 9 8 7 6 5 4 3 2 1

CONTENTS

INTRODUCTION 1

Features of This Book 1

CHAPTER 1

OVERVIEW OF CHIMNEYS 3

- 1.1 Functions of Chimneys and Vents 4
- 1.2 Definitions 4
- 1.3 Not All Homes Have Chimneys 6
- 1.4 Chimneys Are not Supporting Structures 6
- 1.5 Materials 6
- 1.6 Fuels 6
- 1.7 Draft 8
- 1.8 Number of Flues and Flue Size 11
- Chapter Review Questions 12
- Key Terms 12

CHAPTER 2

MASONRY CHIMNEYS 13

- 2.1 Components 14
- 2.2 Condensation 22
- 2.3 Abandoned Chimneys 23
- 2.4 Annual Inspection and Cleaning 23
- 2.5 Conditions 24
- Chapter Review Questions 51
- Key Terms 52

CHAPTER 3

METAL CHIMNEYS OR VENTS 53

- 3.1 Function 54
- 3.2 Types 54
- 3.3 Multiple Appliances 58
- 3.4 Connections of Vent Pieces 58
- 3.5 Conditions 58
- Chapter Review Questions 69
- Key Terms 69

CHAPTER 4**OVERVIEW OF WOOD HEATING 70**

- 4.1** Types of Wood Heating 71
- 4.2** Efficiency Ranking 72
- 4.3** Components and By-Products of Wood Fire 73
- 4.4** Comparing Wood to Gas and Oil 73
 - Chapter Review Questions 76
 - Key Terms 76

CHAPTER 5**WOOD FURNACES AND BOILERS 77**

- 5.1** Components Overview 78
- 5.2** Cabinet 79
- 5.3** Combustion Air Supply 80
- 5.4** Combustion Air Control 82
- 5.5** Combustion Chamber 86
- 5.6** Heat Exchanger 90
- 5.7** Barometric Damper 91
- 5.8** Vent Connectors 92
- 5.9** Thermostat 95
- 5.10** House Air Fan (Blower) 96
- 5.11** Fan Control 96
- 5.12** High-Temperature Limit Switch 97
- 5.13** Duct System 98
- 5.14** Add-On Furnaces 100
- 5.15** Dual Fuel Furnaces 103
- 5.16** Boilers 105
- 5.17** Summary 106
 - Chapter Review Questions 106
 - Key Terms 107

CHAPTER 6**WOOD STOVES 108**

- 6.1** Function 109
- 6.2** Components 109
- 6.3** Materials 111
- 6.4** Location 111
- 6.5** Heat Distribution Methods 112
- 6.6** Installation Authorities 113
- 6.7** Efficiency 113
- 6.8** Various Approaches 114

- 6.9 Improved Efficiency 114
- 6.10 Wood Stove Safety Issues 117
- 6.11 Conditions 123
- 6.12 Summary 135
- Chapter Review Questions 136
- Key Terms 137

CHAPTER 7

WOOD-BURNING FIREPLACES 138

- 7.1 Overview 139
- 7.2 Function, Components, and Accessories 140
- 7.3 Combustible Clearances 140
- 7.4 Fire Safety 142
- 7.5 Quality of Draft 142
- 7.6 Life Expectancy 145
- 7.7 Footings and Foundations 145
- 7.8 Hearth 149
- 7.9 Firebox 155
- 7.10 Damper 162
- 7.11 Throat, Smoke Shelf, and Smoke Chamber 166
- 7.12 Face or Breast 170
- 7.13 Ashpit 174
- 7.14 Outdoor Combustion Air 176
- 7.15 Glass Doors 181
- 7.16 Heat Circulators 183
- 7.17 Gas Igniters 185
- Chapter Review Questions 187
- Key Terms 190

APPENDIX A

STANDARDS OF PRACTICE 191

- The ASHI Standards of Practice 191
- Notes on the Standards 197

APPENDIX B

INSPECTION TOOLS 200

APPENDIX C

INSPECTION CHECKLISTS 202

vi Principles of Home Inspection: Chimneys and Wood Heating

APPENDIX D

INSPECTION PROCEDURE 207

APPENDIX E

ANSWERS TO CHAPTER REVIEW QUESTIONS 211

INDEX 224