

**Residential Code Essentials:
Based on the 2024 International
Residential Code®**

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Preface

Construction of residential buildings routinely consists of conventional practices, those tried-and-true methods that have performed well over the years and have long been recognized by the building code. With the introduction of new technology, materials, and methods, improved understanding of safe and healthy living environments, and innovation in dwelling designs, residential construction and the codes that regulate it have become increasingly complex. Such complexity is necessary to afford flexibility in design and construction and to meet the expectations of society and modern homeowners. Reference publications intending to explain the provisions regulating residential construction may overwhelm the reader with a broad range of topics and alternatives, may provide superficial coverage of all requirements, or may focus on the details of a limited number of provisions.

Residential Code Essentials: Based on the 2024 International Residential Code® was developed to address the need for an illustrated text explaining the basics of the residential code—those provisions essential to understanding the application of the code to the most commonly encountered building practices. The text is presented and organized in a user-friendly manner with an emphasis on technical accuracy and clear noncode language.

Residential Code Essentials features full-color illustrations to assist the reader in visualizing the application of the code requirements. Practical examples, simplified tables and highlights of particularly useful information also aid in understanding the provisions and determining code compliance. References to the applicable sections of the 2024 edition of the IRC are helpful in locating the corresponding code language and related topics in the code. Select definitions from Chapter 2 of the IRC are provided in a glossary of terms that clarifies the application and intent of the technical provisions.

Anyone involved in the design, construction or inspection of residential buildings will benefit from this book. Beginning and experienced inspectors, contractors, home builders, architects, designers, home inspectors and students of construction technology and design will gain a fundamental understanding and practical application of the frequently used provisions of the 2024 edition of the IRC.

The content of *Residential Code Essentials* is organized to correspond to the order of construction, beginning with sitework and foundations through completion of a safe, healthy and energy-effective dwelling. Mechanical, fuel-gas, plumbing and electrical provisions are placed in separate chapters. The advantage of this format to the reader is that it pulls related information together from various sections of the IRC into one convenient location and provides a familiar frame of reference to those with construction experience. The book explains the difference between “prescriptive” and “performance” requirements. Prescriptive structural design requirements to resist the forces of wind, earthquake and snow are described and illustrated in an easy-to-understand way. Structural topics include conventional footings and foundations (including the fundamentals of soil capacity), conventional wood floor, wall and roof framing, engineered wood products and seismic reinforcing of masonry chimneys. Fire- and life-safety concerns are addressed with topics including means of egress, emergency escape, stairways, fall protection, smoke alarms, fire sprinklers and fire-resistant construction. *Residential Code Essentials* covers the minimum interior environmental conditions for a healthy living environment, weather protection and energy conservation measures. The appendices of the 2024 IRC provide a variety of alternative methods of construction, including requirements for tiny houses, which will be briefly covered in this book.

Correct and reasonable application of the code provisions is enhanced by a basic understanding of the code development pro-

cess, the scope, intent and correlation of the family of International Codes, and the proper administration of those codes. This fundamental information is provided in the opening chapters of this publication. The book also explains the interaction of a building code with other local and state regulations and includes discussion of common hazards of the built environment that may be regulated by state or federal agencies.

This book does not intend to cover all provisions of the IRC or all of the accepted materials and methods of construction of residential buildings. Focusing in some detail on the most common conventional construction provisions affords an opportunity to fully understand the most important concepts without exploring every variable and alternative. This is not to say that information not covered is any less important or valid. This book is best used as a companion to the IRC, which should be referenced for more complete information.

ABOUT THE INTERNATIONAL RESIDENTIAL CODE

The IRC is a comprehensive, stand-alone residential code that establishes minimum regulations for the construction of one- and two-family dwellings and townhouses up to three stories in height, including provisions for fire and life safety, structural design, energy conservation and mechanical, fuel-gas, plumbing and electrical systems. The IRC incorporates prescriptive provisions for conventional construction as well as performance criteria that allow the use of new materials and new building designs.

The IRC is one of the codes in the family of International Codes (I-Codes) published by the International Code Council (ICC). All are maintained and updated through an open code development process and are available internationally for adoption by the governing authority to provide consistent enforceable regulations for the built environment.

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Glenn Mathewson is an independent building code educator and consultant. He is the creator of BuildingCodeCollege.com where he offers on-demand courses and other educational resources. He writes the "Know the Code" column in *Fine Homebuilding Magazine*. He created and authors the ICC deck construction book and is a new author for the Code Check publications. Glenn teaches codes to professionals across the country at conferences and trade shows and is known for his passionate and high energy approach to teaching, even in webinar formats. He entered the construction industry as a 19-year-old laborer and spent almost a decade in the trades before becoming a building inspector in 2005. He began writing and presenting code education in 2007 after earning his MCP certification. In 2018, he left the inspector position for full-time teaching and was later recognized with the 2021 ICC Educator of the Year Award. He assists governments in amending and adopting updated codes and creating local and state education. He has been an active participant in the IRC code development hearings since the 2015 edition, with significant support in the creation of the modern deck codes. Glenn is a code historian and collector with over 700 titles from before the ICC was formed. He enjoys researching the history and sharing about it in all of his classes.

ABOUT THE INTERNATIONAL CODE COUNCIL®

The International Code Council is the leading global source of model codes and standards and building safety solutions that include prod-

uct evaluation, accreditation, technology, codification, consulting, training and certification. The International Code Council's codes, standards and solutions are used to ensure safe, affordable and sustainable communities and buildings worldwide.

The International Code Council family of solutions includes the ICC Evaluation Service (ICC ES), S. K. Ghosh Associates, the International Accreditation Service (IAS), General Code, ICC NTA, ICC Community Development Solutions, Alliance for National & Community Resilience (ANCR) and American Legal Publishing.

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