

# Steel Framing Guides

by Dave Holbrook

I've held residential steel framing at arms' length ever since I first heard about it. Let someone else be out there on the bleeding edge of home-building technology. However, I'm beginning to believe that this system is sufficiently developed to overcome most of its drawbacks.

Reasons cited for making the switch from wood to steel include price stability, and the uniform reliability of the materials. Or maybe you're an unwilling convert of your architect or engineer. Whatever the reason, the basic issue is this: Unlike wood-framing with its widespread familiarity, steel-framing demands that you rely on a standard reference.

Accordingly, I went looking for a practical guidebook to steel framing that provides solutions to the on-site situations you're likely to encounter. Unfortunately, the field is seriously undercrowded and a little disappointing. Authors wanted.

## General Overview

The *Residential Steel Framing Handbook* (Robert Scharff and the Editors of Walls & Ceilings Magazine; 1996; \$49.95 from McGraw-Hill, New York, NY; 800/722-4726; www.mcgraw-hill.com), is a start, but I didn't find it to be sufficiently focused on hands-on technology. This book seems to raise as many questions as it answers. For example, Chapter 1 points out that "the (steel) framer must be able to recognize defects in the steel." "Defects in steel — aha!" I exclaim, and head for the index: "deflection, doors, dormers, drive pins, drywall" — hey, it's not here. That's annoying; it sounds like we're in trouble from the get-go. How about header

sizing? Nope. There's plenty of general information, but the nitty-gritty, if it's here, is too hard to find. For the money, I want details.

## Picture Guide

The *Residential Steel Framing Construction Guide* (E. N. Lorre, author; Technical Publications, 3020 Builders Avenue, Las Vegas, NV 89101; 702/598-1711; 1993; \$40 ) cuts right to

the chase. It's the all-graphics guide to steel framing; the most text you'll find in one place is in the table of contents. Divided into specific framing systems, the book begins with a floor framing schematic, breaks it down into detail, progresses to a wall framing schematic, breaks it down, and so on. Subsequent sections cover roof rafters, roof trusses, exterior wall details, and miscellaneous blocking, bridging, etc. Tables of recommended fasteners and fastener schedules complete the coverage. What's missing? Assembly narrative,

tools and techniques, header calculations, span tables; all kinds of stuff that would bring you up to speed on your first foray. But, it's a great pictorial assembly reference, and confirms that a steel frame looks a lot like its wooden counterpart, which should give a wood framer confidence.

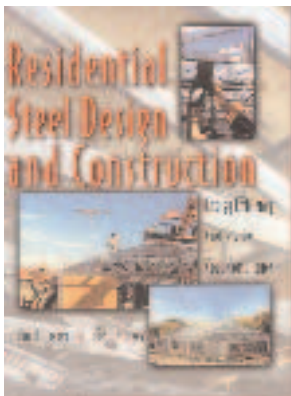
## Reigning Standard

If you talk to a steel framer, it won't take long before you hear about *The Prescriptive Method for Residential Cold-Formed Steel Framing* (\$20; American Iron and Steel Institute, 1101 17th Street NW, Ste. 1300, Washington, DC 20036; Second Edition, 1997) Co-sponsored by HUD and NAHB, this book was developed to provide a standard for one- and two-family residential framing, and to make engineering unnecessary in most applications. Definitions and materials, tables and schedules are all described in somewhat friendly, usable-but-dull specification language, intended to be compatible with building codes. Joist and rafter spans, header sizing, cutting and notching, are all addressed here. This is a solid, reliable, no-frills book, and one you should have if you're going to frame with steel. With reservations, my "Cheapest and Best" award.

## Big Fat Book

Because of the conversational tone, I felt a spark of hope as I leafed through *Residential Steel Design and Construction* (\$40; McGraw-Hill, New York, NY; 800/722-4726; www.mcgraw-hill.com; copyright 1998), thinking that I'd found my on-site steel guru. But I retired the first nine chapters, dedicated to general, not-necessarily-steel-design considerations, without hitting paydirt. In Chapter 10, we finally bite into the title topic, but it's over almost before we start. More than (the second) half of the book is Appendix. Reproduced here, along with the MECcheck and





*EZFrame* software user's manuals is the complete *Prescriptive Method for Residential Cold-Formed Steel Framing* (which I'm quite happy to mention again), and its companion commentary volume. The two software manuals seem to have little to do with steel in specific; I guess they're there to fill the jacket. A puzzling compilation.

## Other Books

Here are several references that may be worth having: *The Steel Joist Institute 60-Year Manual — 1928-1988* — is “A Compilation of Specifications and Load Tables” for many types of steel joists and girders (1992, The Steel Joist Institute, Suite A, 1205 48th Avenue North, Myrtle Beach, SC 29577; 843/626-1995; [www.steeljoist.org](http://www.steeljoist.org); \$59); *Steel Framing For Houses* from Energy Design Update (1997; Cutter Information Corp., 37 Broadway, Suite 1, Arlington, MA 02174;

800/964-5118; [www.cutter.com](http://www.cutter.com); \$40) compiles articles published over several years, and addresses thermal performance issues related to steel framing. A worthwhile (albeit pricey) read of the problems and the proposed solutions. *Design Issues with Steel-stud-framed Wall Systems* (1999; The Pennsylvania Housing Research Center, 219 Sackett Building, University Park, PA 16802; 814/865-2341; [www.engr.psu.edu/phrc](http://www.engr.psu.edu/phrc); \$25) addresses thermal and moisture issues, provides some pros and cons, reaches some conclusions, and makes a few recommendations about steel-framed wall systems.



## Hotline

The Steel Hotline at the NAHB Research Center (800/79-STEEL; or e-mail: [steelhotline@his.com](mailto:steelhotline@his.com)) provides help and information to builders considering steel, or to those in need of answers during construction.

