

Wood Basics

Understanding Wood by R. Bruce Hoadley; Taunton Press, Newtown, Conn.; 1980; 250 pages; \$21.95, hardcover.

Wood Engineering Handbook by the USDA Forest Products Laboratory; Prentice-Hall, Englewood Cliffs, N.J.; 1974; \$49.95, loose-leaf 3-ring binder.



Written primarily for woodworkers, *Understanding Wood* by Bruce Hoadley is among the best all-around references on the nature of wood and how to work it for any carpenter or wood-butcher who cares about what he does. Hoadley's opening remarks concerning his early interest sent me into nostalgic reminiscences about my grandfather's basement workshop and the woodchip smell at my uncle's chainsaw exhibition at the Wisconsin State Fair. This rather poetic perspective on wood surfaced again when Hoadley addressed the subjective properties we appreciate in wood—things such as aroma and color, emotional connections with nature, and our reactions to real and imitation wood. Most of the book, however, concentrates on the technical and scientific aspects of wood technology.

Hoadley is well qualified to present this perspective—holding a degree in forestry from the Univ. of Conn. and a doctorate in wood technology from Yale. His writings appear frequently in *Fine Woodworking*, and he teaches at the Univ. of Mass.. He also has hands-on experience as a woodworker to supplement his book-learning.

The first two chapters include an introduction to technical terminology such as *angiosperms* (hardwoods) and *gymnosperms* (softwoods) and an argument for the use of scientific names. He also analyzes how transverse, radial and cross-sectional sawing and cell structure affect grain pattern. Here too you learn about wood defects and how misuse of defective wood can even be fatal—for example, using *reaction wood* for ladder rungs.

Chapter 3 covers wood identification, focusing primarily on magnified photos of thin slices, called *macrographs*. Black-and-white photos provide examples of the cellular structure of various species. No color photos are provided, and there are better books available for those who choose what Hoadley calls the "looks-like" identification method.

Chapters 4 and 5 tackle moisture content (wood can actually have a 200 percent moisture content), and shrinkage (there may be almost three feet of stacked framing members in a two-story house subject to shrinkage across the grain). It also covers techniques for coping with seasonal variations—including detailed advice on the proper drying of your own lumber.

Hoadley's treatment of the complex subject of wood strength is one of the best you'll find anywhere—especially his illustrated description of beam mechanics. Later chapters discuss machining, joining, and finishing, in Hoadley's thorough and technical, but clear, manner.

The drawings and photos are sharp, to the point, and rival the text for

clarifying the points under discussion. A very fine technical book and an asset to anyone's reference library.

Wood Engineering Handbook is a 1974 reprint of the earlier USDA *Wood Handbook* in 3-ring format. (A new edition is due out this year.) Broader in scope than Hoadley's book, it covers all types of fastening (nails, staples, bolts), plywood and stress-skins, wood preservation, thermal insulation, and particle- and fiber boards in addition to all the basic lumber info in *Understanding Wood*. Sometimes the USDA gives shorter coverage to a given subject, such as the four paragraphs on moisture content versus several pages in Hoadley. At other points, the USDA is much more exhaustive—for example, it includes many tables listing the mechanical properties of lumber species. Thumbnail descriptions of common woods plus a verbal chart of grain characteristics (no photos!) compare unfavorably to Hoadley's technical presentation of the same material. Writing in the *Handbook* is clear, as are the illustrations, but the latter don't hold a candle to Hoadley's graphics. Absent is any consideration of the actual process of working wood.

The two references are good complements—if you can afford both of them.

-Paul Hanke

Free & Cheap

Proper Nailing: The causes of and cures for nail-pop control are described in a four-page brochure from the United States Gypsum Company. The brochure also discusses the effects of lumber shrinkage, proper fastener selection, and a checklist of good practices. For a free copy of brochure CS-17, contact United States Gypsum Company, Dept 122-ZZ, 101 S. Wacker Dr., Chicago, IL 60606; 312/606-4523.

Protective Eyewear: Four data sheets describe Sightgard Industrial Spectacles and Single Lens Goggles. For free copies call 800/MSA-2222 or write to Mine Safety Appliances Company, P.O. Box 426, Pittsburgh, PA 15230. Request data sheets numbered 03-00-06, 03-01-06, 03-00-02, and 03-00-03.

Preservation Package: The National Park Services Historic Buildings *Preservation Briefs* are now available as a complete packaged set of 14 for \$5. Priced individually at \$1 per copy, the short essays help owners, architects, and developers of historic buildings recognize and resolve common preservation problems. The brochures include advice on cleaning, conserving energy, roofing, siding, window repair, painting, and additions. When ordering, specify the quantity desired, GPO stock number 024-005-0102602, and total price. Write to Superintendent of Documents, Government Printing Office, Washington, D.C. 20402; 202/783-3238.

Healthy House Reference: The *Bluebook* contains over 50 pages of articles and printed speeches from the "Blueprint for a Healthy House Conference" (Oct. 15-16, 1987, Cleveland, Ohio). Topics include radon, lead, asbestos, chlordane, moisture, formaldehyde, fiberglass, combustion venting failure, legal issues, and testing and assessment. A packet of the literature distributed at the conference is included. Send \$15 plus \$1 postage and handling for each book (up to \$5) to Housing Resource Center, 1820 West 48th St., Cleveland, OH 44102; 216/281-4663.

Plywood Advice: Several product and design and design/construction guides have been released by the American Plywood Association including *APA Product Guide: Performance-Rated Panels*. The 12-page booklet includes performance standards for various panel types, exposure classifications, span ratings, panel size and spacing data and other information. When ordering, request form F405G. Also available is *APA Design/Construction Guide: Fire-Rated Systems* (Form W305N), an 18-page booklet including information on safety criteria, protection methods, building code requirements, and insurance provisions; *APA Product Guide: Grades and Specifications* (Form J20), a 28-page booklet including information on APA trademarked structural wood panels, architectural specifications and panel installation recommendations; and *APA Design/Construction Guide: Diaphragm* (Form L350), a 28-page booklet covering diaphragm construction for single- and multi-story buildings, as well as advice on building to resist the lateral loads of high winds and earthquakes. For a free copy of any of these publications, write to the American Plywood Association, P.O. Box 11700, Tacoma, WA 98411; 206/565-6600. Specify form numbers when ordering.

More Wood Advice: Single-page *Technical Information Sheets* are available from Western Wood Products Association. Topics covered include the grade stamp symbols and facsimiles for various lumber products (Form TG-6), chemical preservative treatments (Form A-6), and application, priming, nailing, and pattern selection for wood sidings (Form A-8). The first 25 copies are free; quantity orders are \$7.50 per 100. Also available is a 12-page *Standard Patterns Pamphlet* (Form G-16) detailing Association patterns with actual dimensions and scale drawings. The first 25 copies are free. For larger orders, 15 cents each. Write to Western Wood Products Association, Yeon Building, 522 SW Fifth Ave., Portland, OR 97204. Specify form numbers when ordering.