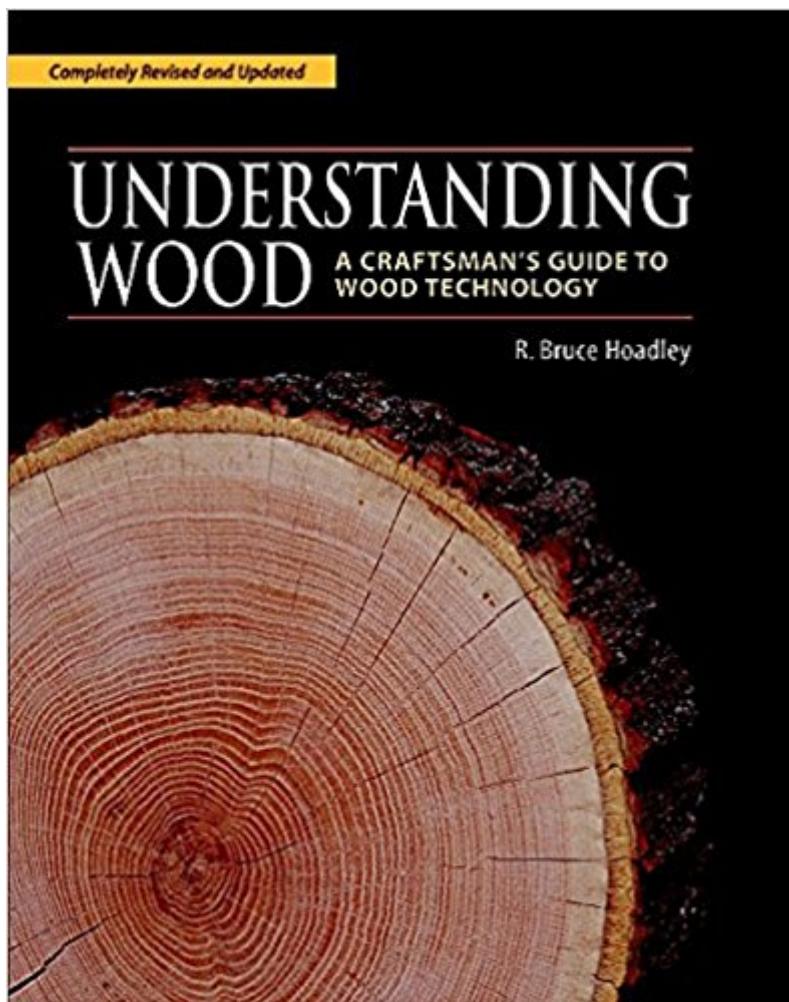


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Understanding Wood: A Craftsman's Guide To Wood Technology



Synopsis

The first edition of Understanding Wood was published in 1980 and has since sold more than 130,000 copies. It is widely held as a definitive reference work and the cornerstone of every woodworker's library. Now, Bruce Hoadley's comprehensive guide to wood technology has been revised and updated in this 20th-anniversary edition of a classic. New information on composite materials, adhesives, and finishes brings this book into the 21st century, while more than 300 photographs bring important visual information to life. This edition covers the nature of wood and its properties, the basics of wood technology, and the woodworker's raw materials. Understanding Wood was written for woodworkers by a scientist with a love of woodworking. It will be sought after by craftsmen and collectors alike.

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Customer Reviews

Wood is a complex, dynamic material that can only be used successfully if the craftsperson understands it. It reacts to changes in humidity, and the various species have widely different working and structural properties (in addition to their many colors and textures). Both Hoadley and Peters do a good job of helping readers understand the factors that must be considered when using wood and products such as plywood. A frequent writer on home improvement topics, Peters offers a colorful book geared toward hobbyist woodworkers. He covers the process of making lumber from start to finish, including how trees grow, their structure, common ways of milling and drying lumber, grading, and possible defects found in wood. One section shows wood samples (both finished and

plain) and describes their basic working characteristics. This particularly attractive book is filled with colorful photographs and illustrations and includes both a glossary and an excellent appendix showing the hazards posed by the sawdust of specific wood species. Hoadley, a professor of wood science and technology, has revised his classic title for its 20th anniversary. While the original is still great, the new title incorporates the latest technologies in adhesives, finishes, and wood products. Color photographs are a welcome addition as the original edition's photos were drab and unappealing. Hoadley covers much of the material that Peters does but in far greater depth. While this complexity may intimidate beginners, it is just what advanced users and professionals need. For example, Hoadley's wood identification section consists of macrophotographs of wood samples magnified ten times so that the correct species can be determined from the pattern of wood cells. This title also includes an in-depth glossary, bibliography, and index. Hoadley's work is an improvement of a classic while Peters's is good enough that it will likely stand the test of time as well. The difference is in complexity, not quality. General public library collections will get more use from Peters's title, while in-depth public and academic libraries will want Hoadley. Jonathan Hershey, Akron-Summit Cty. P.L., OH Copyright 2000 Reed Business Information, Inc.

R. Bruce Hoadley has a degree in forestry from the University of Connecticut and a doctorate in wood technology from Yale. He is a former professor of wood science and technology at the University of Massachusetts at Amherst. He frequently consults for museums and acts as an expert witness at trials. He is also the author of *Understanding Wood* (The Taunton Press, 1980, 2000) and *Identifying Wood* (The Taunton Press, 1990).

I have both volumes of this series and find them to be superior to any other books on wood structure I have seen. I have recommended this book to a number of wood working friend and have received very positive "thank yous" from each of them. This book does what many others do not, and that is discuss the structure of wood from an anatomical point of view (pictures of wood cross sections are excellent) and an understanding of the botanical aspects of tree growth. It was a pleasure to sit down and read through both volumes like a novel and come away with a real appreciation for the (mostly) unseen world of wood structure - flaws and all. Highly recommend this if you are interested as a scientist or an amateur. This book can change the way you see trees and that is a good thing.

This book is a great reference for learning about the ins and outs of wood, from how it behaves as it dries, to the differing characters of different species. Great read. It's amazing to learn how much I

really didn't know about wood.

This book may appear overwhelming to the person who is new to woodworking, and just wants to make a simple project. As you grow deeper in your skills, this book is a must read. It is fascinating for all levels. Hoadley starts off with looking at wood on a cellular level. The different types of wood, have different cell characteristics. If you look at it scientifically, reducing a substance to its cellular level gives you a cross comparative basis, in which to make relational references. Seeming too technically specific for the person, more interested in router techniques, than a science class. But that is just the beginning. He soon goes into the figure in wood, wood identification, water in wood, coping with wood movement, strength of wood, and other properties. He also covers machining wood, joining wood, and finishing wood. Finishing up with modifying wood, the woodworkers raw materials, and Forests past and future. I would advise someone who is interested in woodworking, to use this book in addition to the others they may have pertaining to woodworking technique. When you get into the building of projects, and see wood "behavior" then this book will all the more make sense. The relationship of how it was sawn and cured, and in what section of the tree it came from, and be relational to why the wood did what it did. It is the easiest to learn that way. I found it to be a fascinating read. It is like fine art. At first you say, wow that is great. Then as you see it more and more, you come to appreciate the layers of laws that apply to the medium, and gain all the more from it over time. For example you may marvel at being able to make a perfect fitting mortise and tenon joint, but do you know what the best possible orientation of growth rings in that form of joinery. One way it is apt to split, another way, it will last 100 years. It may not be as much fun as whether Bosch or Makita makes the best router, but inevitably it will result in a long lasting product. It is a fascinating read. Something that should be put on the shelf as a reference source. Read it ahead of time, and read it afterwards to explain, why this thing did that. Is this the science of wood? Sure it is, but it is done in such a way that, if you don't mind digging through learning the terminology, so you can understand the higher laws of wood joinery and the like, resulting in knowing what may have taken an old master a lifetime to learn. Parts of it are an easy read. Everyone will glean valuable experience from it. It is not so simple that you can have a beginner explain every sentence, but the learning curve is rewarding. I find Hoadley to be a technician, as opposed to a salesman. Technicians are interested in purely the scientific understanding of the fundamentals, and the relationship of behaviors to bring about the desired result. A salesman is interested in the excitement and appeal of the project, but not the depth from which Hoadley covers the subject. I must admit, that at times it is a dry read. It can best be described by taking a small amount of text

from the book. Here is two sections on mortise and tenon joinery. He starts out with this: "Fastening of end grain to side grain joints can be accomplished with a high level of success using mortise and tenon joinery" Later in the same subject he states, "The improvement in mechanical advantage obtained by increasing height is offset by increased dimensional conflict between longitudinal and transverse grain orientation." There you have it. If we knew the terminology that he uses, we could better understand the meaning of the second sentence. What it means is that if you increase the height of the joint, you create a wider surface area, and that creates a stronger joint, but that is offset by the additional expansion and contraction movement in a wider piece of wood. Since the boards in a mortise and tenon joint are typically joined together with grains running against one another, this is a major consideration. We knew that! :-) I had to read that sentence and ponder it before I knew what he meant. At times it reminds me of learning the computer. At times it is frustration, but with understanding, which is a breakthrough, come elation. This book will take you to higher levels and levels. I guess I am getting wordy. I am excited about this book. As Woodenboat states it on the back cover, "Clearly the best book available on the subject." I highly recommend you to buy this book. It is an easy read, and it is a complex read, all wrapped up in one book. Each time you reference it, you will derive more and more information from it. It is like fine art. A lifetime of knowledge isn't gained in a single sitting. No matter how many years you spend in woodworking, this book will be right there with you, ever unfolding the true relationship of the product we have come to love; Wood!

I can see why this book is so recommended by experts. It lets you understand the structure of wood, how it reacts to moisture, how it absorbs finish, and a wealth of other useful knowledge. I consider myself expert level woodworker and I got a lot more than I expected from this book. It takes complex science of wood and makes it simple to understand. From novice to expert, something is here for everyone.

This book takes you from qualitative to quantitative understanding by means of accurate, readable explanations and a minimum of fuss. For instance, after explaining why a house settles, Hoadley shows us clearly how to estimate how much it will settle and what a knowledgeable builder could do about it. Or take this simple woodworking situation: you are building a towel rack from two side pieces of white pine drilled to accept a maple dowel. Exactly how much wider should the hole be than the dowel so that expansion and contraction due to moisture changes in the bathroom won't split the sides? A little time spent with this book will give you the ability to answer questions like

these, quickly, exactly, and with authority. No more guessing about the effects of moisture, temperature, finish, and loads on wood: just look up the data in the clear and handy tables and graphs Hoadley provides and do the simple calculations (it's multiplication and division, folks, with nothing harder than an occasional exponent). Almost every chapter contains revelations for the newcomer to woodworking. Early on we learn not only that wood changes size with moisture, but by how much (according to species), in which directions, how this affects its shape, and what are the common and best techniques to compensate for or design for these changes when building anything with wood. Later we learn how to relate these moisture changes to humidity--there's a clear and handy chart, as well as an easily memorized rule of thumb--and how to build and calibrate a simple shop hygrometer. In another chapter Hoadley applies this information to a discussion culminating in valuable information on sanding and finishing wood. The many applications to an understanding of all things wooden make this book stand out for the casual reader, while the detailed, systematic explanations of the whys and hows make it ongoingly useful for anyone who crafts quality things from wood. It is the ideal supplement to an entire library on the how-to's of woodworking, because with the information given here, you will be equipped to make intelligent choices of how to select, cut, assemble, and finish a project of any size and complexity. The only nit I have to pick has to do with the presentation of mathematical formulas: it's miserable. For instance, in one place the expression "D/O" stands for a single quantity rather than a value "D" divided by a value "O". Potentially confusing, yes; but what compensates for it is the clear descriptions and examples in the text: these are so good, you can totally ignore the formulas and not miss a thing. Overall, Hoadley's long, thoughtful experience with all aspects of wood, from the engineering through the creative, shine through consistently. That's why I give this one five stars and I'm buying more copies for friends.

Great book!! Tough read but very educational. Like going to school. Packed with info.

More than you ever need to know

An informative book. A nice read, good photos.

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