



Controlling Moisture: A Primer

Controlling Moisture in Homes by the National Association of Homebuilders, 15th and M Streets NW, Washington, DC 20005; 1987, 51-page booklet, \$9/members, \$11.75/non-members.

Years ago I heard of a builder in New Hampshire who installed polyethylene vapor barriers in houses and then cut them with a razor knife so "the house could breathe." Foolish and self-defeating as that may seem, misconceptions about moisture movement in structures and the damage that moisture can cause still abound. If after reading countless articles and attending numerous workshops you still aren't sure about the difference between vapor pressure and relative humidity, or you pay careful attention to stopping diffusion but don't plug up cracks, *Controlling Moisture in Homes* is what you need. It's probably the best little primer on the subject I've seen, although somewhat overpriced for its size.

In 36 pithy pages you'll learn how moisture moves, what problems it causes, how to control it in both cold and warm climates, and how to correct a sampling of problems encountered in existing buildings. The final pages explain the use of psychrometric charts for predicting dewpoints.

Did you know that condensation can form at 50°F if the air temperature is 60°F and relative humidity is 70%? Or that ice may turn directly back into vapor without becoming a liquid? Or that the "perm" rating of bead-board can be as much as 5.8 (less than 1.0 is considered a vapor retarder)? Would you install a ceiling vapor barrier below a vented attic where design temperatures are higher than 0°F? How much attic venting is "enough"? Will foam insulation used as sheathing cause condensation or prevent it? Do you put a vapor retarder on the inside or outside of a wall in a warm humid climate? Or would you use a permeable housewrap product instead? These and many other questions are answered, accompanied by background information to help you understand why various control measures are recommended.

As with most good things, this one has a few flaws though. Symptoms of common moisture problems are described but not illustrated. No details are shown on exactly how to seal around penetrations in vapor barriers, although cracks and gaps may pass 100 times more vapor per square inch than diffuses through surfaces. And the authors tell you to determine if attic moisture is caused by leaks or condensation, but offer no diagnostic tests to enable you to do so. Nonetheless, you'd be hard pressed to find a better introduction to the arcane knowledge of moisture and buildings.

Craftmen's Perspectives Enliven

Fine Woodworking on Hand Tools, by the editors of *Fine Woodworking*, Taunton Press, 63 South Main St., P.O. Box 5506, Newton, CT 06470-5506; 1986, 103 pages, \$7.95, 8 1/2 x 11 paperback.

Recently, I decided to read through a copy of *Fine Woodworking on Hand Tools*, even though I expected it would be more interesting to a cabinetmaker than a house builder. And when I looked at the table of contents, it seemed my suspicions would be confirmed. But then I began reading, and my interest quickly perked up—even in articles for which I had no practical use.

Fine Woodworking on Hand Tools is a collection of 38 features selected from the first ten years of the magazine *Fine Woodworking*. All the authors are craftsmen, and they appear to be very knowledgeable in their fields. A few of my favorite chapters include, "A Blacksmith's Bleak View of Modern Tools" by Anders Richardson. In this article, Richardson expresses his belief that after the advent of drop forging, "companies that produced barely tolerable tools at the lowest cost survived the competition." In my rather cynical world view, this sounded all too true. (An inspiring article within Richardson's piece tells about Alexander Weygers—an 83-year-old "woodworker's blacksmith," born in Java, who trained as a marine engineer in Holland. He continued to teach his skills after undergoing open-heart surgery.)

Before continuing, allow me a brief aside. This morning, I watched a movie with my nine-year-old son, entitled "Land of Far-Away" in which a boy hero vanquishes an evil prince with a magical sword that pierces his heart, which is literally made of stone. This is the kind of blade that Richardson longs for, one that is all too hard to find, with the possible exception of the World War II Japanese swords which could reportedly cut through a machine-gun barrel.

Another article, "Testing Wood Chisels," by Bill Stankus, lays out in technological terms why Japanese blades may still be the best you can get. I learned that my trusty old Sears Craftsman chisels contained a "barely hardenable" amount of carbon and were too soft to hold an edge. Photomicrographs revealed why they fragment badly as they dull. Japanese, and some of the European brands, fared much better in all tests. Buy American? Maybe not, although a second opinion on the subject points out that the variation in quality does not merit the fourfold price difference between domestic and foreign brands.

I found more information on Japanese tools in "Japanese Measuring & Marking Tools" by Toshio Odate, who reminded me of the traditional craftsman's custom of cleaning and honoring his tools on New Year's Day. Robert Ghelerter's piece on the types, grades, uses, and care of Japanese saws brought to mind the same sense of honor for tools.

Western tools too get their due, from Robert Sutter's article on what to look for when buying antique braces, saws, adzes, and the like. He

also covers how to test various brands of doweling jigs, and he gives practical instructions on sharpening saws, screwdrivers, and auger bits. He even covers hewing logs, woodcarving and scrollsaw techniques, and using spokeshaves and drawknives. Theoretical issues are also covered in discussions of shop math and ingenious methods for drawing ellipses. In short, this book is stimulating reading, even if you don't know a ryoba from a filigree.

—Paul Hanke

Free & Cheap

Heat Transfer Primer: Written in non-technical language, *Energy Design Principles in Buildings* from the International Energy Agency, defines and explains fundamental heat transfer concepts needed to apply solar heating and cooling design strategies in homes. Much of this 60-page booklet, the first in a series of eight Design Information Booklets, discusses actual heating and cooling strategies for passive and hybrid solar buildings. To order, send \$3.25 to Dept. 36-CW, Superintendent of Documents, Washington, DC 20402-9325; 202/783-3238.

Whole-House Benefits: Whole-house ventilation is explained in *Home Ventilating Guide* available free from the Home Ventilating Institute. The 19-page guide details how whole-house ventilation can result in health and comfort benefits, and savings in home energy and maintenance costs. Ventilation of the attic, kitchen, bathroom, and other rooms is covered. Types of fans, how to install them, and how to determine minimum fan capacity for proper ventilation are all described. To obtain a copy, write: HVI, 30 W. University Drive, Arlington Heights, IL 60004; 708/394-0150.

Installing Radiant Floors: A free, 16-page *Floor Installation Guide* is available from the Wirso Company. The guide provides step-by-step instructions for installing a hydronic radiant floor system—from unpacking the components through assembly, lay out, and testing the system. Information is provided on tubing layouts, manifold locations and connections, electrical controls, and system balancing. The guide also contains drawings, technical charts, and an illustrated list of all Wirso system components, fittings, and tools. To order, write Wirso Co., 59525 148th Street West, Apple Valley, MI 55124; 612/891-2000.

Exhaustive Air Info: Covering some of the same ground as the above, but written specifically for builders, is *Indoor Air Quality* from the Canada Mortgage and Housing Corporation. This 35-page booklet offers air-quality guidelines for new construction, sources of indoor air pollution, related problems and symptoms, and instructions to solve air-quality problems in existing homes. Basic types of testing for indoor air pollution are also explained.

Available in the same Builder's Series from the Canada Mortgage and Housing Corporation is the 11-page *Guide to Residential Exhaust Systems*. The basic requirements of a good exhaust system configuration are covered, as well as how to select and install effective residential exhaust systems for kitchen range hoods and bathrooms to remove air contaminants and control humidity. Both booklets are available for \$1 each from CMHC Publications, Canada Mortgage and Housing Corporation, 682 Montreal Road, Ottawa, ON J1A 0P7; 613/748-2000.

—Lauren Chapman