



Mold in Houses Resources for Assistance and Information

General References and Resources on Mold

Fighting Mold...Canada Mortgage and Housing Corporation (CMHC), Ottawa, Ontario. Website: www.cmhc-schl.gc.ca/en/index.cfm (Search for "Mold"; other resources available) CMHC documents cover various aspects of mold prevention and remediation. Specific documents are available for condominium owners and Indian tribes.

"Fixes for Damp, Moldy Houses"...Fred Lugano, *Fine Homebuilding*, Nov./Dec. 1999, no. 125, pp. 74-49. Illustrates several examples of moisture and mold problems and strategies for preventing and remedying them. Includes illustration of the various ways that moisture can enter and create problems in a home.

"Mold, A Poltergeist"...Philip Wemhoff, *Home Energy Magazine*, Jan./Feb. 2001, v. 18, no. 1, pp. 19 – 23. Describes mold detection and remediation work on a brick veneer home in Florida. Gives details on waterproofing brick veneer walls.

"Mold Biology" and "Mold Diagnostic Chart"...McGregor Pearce, Mold Sampling and Diagnostic Service, St. Paul, MN. *Home Performance Strategies, The Main Event, Selected Readings*, May 2001. Available from Affordable Comfort, Inc. or email: pearc010@tc.umn.edu.

Mold Control in the House...Johns Hopkins University Asthma and Allergy Center, Baltimore, MD. Website: www.hopkins-allergy.org/rhinitis/therapeutics-house.html Features an interactive model of a home, illustrating common sources of mold and moisture. Includes links to health topics, such as triggers for mold response and therapies.

"Mold in Buildings: What It Is and How to Keep It Out"...Alex Wilson, *Environmental Building News*, June 2001, v. 10, no. 6, pp. 1, 9 – 14. Overview of key mold topics, including detailed description of mold varieties and their health effects. Includes two-page checklist on ways to minimize moisture problems.

Mold in Homes...Minnesota Dept. of Health, St. Paul, MN, 2001. Website: www.health.state.mn.us/divs/eh/indoorair/mold/index.html Good source of health information for consumers who want to know what to do about mold and moisture problems.

Molds in the Environment... CDC, National Center for Environmental Health, Atlanta, GA. Website: www.cdc.gov/nceh/airpollution/mold/ Covers the CDC's perspective on health aspects of mold. Includes section on Stachybotrys and links to other sites.

Mold in Residential Buildings...National Association of Homebuilders (NAHB) ToolBase, 2001. Website: www.toolbase.org/ (Search for Mold) Provides a primer on mold and moisture control for homeowners and builders. Includes list of documents and links to other resources.

Mold Prevention and Detection: A Guide for Housing Authorities in Indian Country...Steven Winter Associates, Inc., Washington, DC and Building Research Council, Urbana-Champaign, IL, Sept. 2001. Prepared for U. S. Dept. of Housing and Urban Development, Office of Native American Programs. Website: www.codetalk.fed.us/MoldDetection.pdf Comprehensive guide on mold and moisture conditions for tribal housing agencies and residents.

Mold Resources...U. S. Environmental Protection Agency, Washington, D. C. Website: www.epa.gov/iaq/pubs/moldresources.html. Provides a summary of the key issues and extensive links to health-related groups and indoor air quality topics.

Operations and Maintenance (O&M) Plan for Mold and Moisture Control... National Multi Housing Council (NMHC) and the National Apartment Association (NAA), Identifies "best practices" apartment owners and managers can use to manage mold growth and moisture problems on their properties. Websites: www.nmhc.org/ and www.naahq.org/moldReq.htm

"Public Housing Breaks the Mold, Part I"...John Snell and Betsy Pettit, *Home Energy Magazine*, Sept./Oct. 2001, v. 18, no. 5, pp. 24 – 25. "Part II: Veterans Era Housing", Nov./Dec. 2001, v. 18, no. 6, pp. 33-37. Case studies of mold and moisture problems in mid-rise and Veterans Era (low-rise) public housing.

What You Need to Know About Mold...Nathan Yost, Joseph Lstiburek, Terry Brennan, Building Science Corp., Westford, MA. Website: www.buildingscience.com Covers the essentials of what consumers should know about mold and ways to prevent moisture problems, in a reasoned. Other documents include: *Mold Remediation in Occupied Homes* and *Mold Causes, Health Effects and Clean-Up*.

Moisture Control and Building Envelope Guidelines

Before You Start Renovating Your Basement...CMHC, 2000, CE28c. Website: www.cmhc-schl.gc.ca/en/index.cfm (Search for specific topics) Covers moisture and mold issues to consider when renovating a basement as living space.

Builders Guides (for 4 climate areas), Joseph Lstiburek, Building Science Corporation, Westford, MA. Website: www.buildingscience.com Comprehensive series of guidebooks on moisture control, energy efficiency and good ventilation for residential construction. Other related publications are available or listed on the site. The Builder Guides are available from Energy and Environmental Building Association (EEBA), 10740 Lyndale Avenue South, Suite 10W, Bloomington, MN 55420-5615, Phone: 952-881-1098, Website: www.eeba.org

"Details for a Dry Basement"...William B. Rose, *Fine Homebuilding*, August/September 199, No. 115, pp. 99 – 103. Provides step-by-step procedures for waterproofing a foundation and constructing a perimeter drainage system.

"EIFS Industry Looks Forward to Brighter Days"...*Energy Design Update*, September 2001, v. 21, no. 9, pp. 1 – 3. Also see *Exterior Insulation and Finish Systems*...N. Nisson and D. Best, November 1999, available from Cutter Information Corp., Arlington, MA. Discussion on moisture problems with EIFS cladding and ways the industry was trying to resolve the problem.

Home Energy Magazine is a good resource for information on Moisture Control and Building Envelopes. Website: www.homenergy.org 2124 Kittredge St., Berkeley, CA 94704, Phone: 510-524-5405.

"Keeping a Basement Dry"...Larry Janesky, *Fine Homebuilding*, June/July 200, No. 140, pp. 64 – 69. Provides more details on installing a foundation drainage system and ways to keep water out of basements.

Model Quality Plan for Use of Drainage-Type EIFS in One-and Two-Family Dwellings ...NAHB Toolbase, 2001. Website: www.toolbase.org/ (Search for EIFS) Protocol for how to construct EIFS walls to prevent moisture penetration.

Moisture Audit of Residential Structures...Environmental Health Watch, Cleveland, OH. Website: www.ehw.org/Healthy_House/HH_Moist_Audit.htm Comprehensive guide for conducting a moisture audit of a home.

Moisture Diagnostics: Measuring Humidity In Your Home... CMHC. Website: www.cmhc-schl.gc.ca/en/index.cfm Provides an easy to follow discussion of indoor humidity levels and describes basic tools and techniques for measuring humidity, including how to calibrate them.

“Profiles of Airborne Fungi in Buildings and Outdoor Environments in the United States”...Brian G. Shelton, et al. *Applied and Environmental Microbiology*, April 2002, v. 68, no. 4, pp. 1743-1753. Reports on the analysis of 12,026 fungal air samples (9,619 indoor samples and 2,407 outdoor samples) collected from 1,717 buildings located across the United States

Mold Abatement Procedures and Protocols

Guidelines on Assessment and Remediation in Indoor Environments... New York City Dept. of Health. Website: www.nyc.gov/html/doh/html/epi/moldrpt1.html A comprehensive set of guidelines for how to approach the investigation and cleanup of mold in buildings.

Mold in My Home: What Do I Do?... California Dept. of Health Services, Oakland, CA, July 2001. Website: www.cal-iaq.org/mold9803.htm Also: www.dhs.cahwnet.gov/org/ Provides guidelines for people who have experienced water damage in their home, including health concerns, mold detection and clean-up procedures.

Mold Remediation in Schools and Commercial Buildings... U. S. Environmental Protection Agency (EPA), Washington, DC, March 2001, EPA 402-K-01-001. Website: www.epa.gov/iaq/molds/index.html While geared to schools and commercial buildings, this guide has good information for all contractors and building professionals.

Standard and Reference Guide for Professional Water Damage Restoration, S500-99... Institute of Inspection, Cleaning and Restoration Certification (IICRC), Vancouver, WA. Website: www.iicrc.org/ One of the basic guides for dealing with extensive moisture damage.

Also see the Minnesota “Mold in Houses” information (See above.) Other states have established specific guidelines regarding mold remediation. Check with the Health Department of your state.

Medical Findings

Is Indoor Mold Contamination a Threat to Health?... Harriet M. Ammann, Washington State Department of Health, Olympia, Washington. Website: www.doh.wa.gov/ehp/oehas/mold.html Extensive review of mold types and their health effects.

“Mycotoxins: Of Molds & Maladies”...Julia R. Barrett. *Environmental Health Perspectives*, January 2000, v. 108, no. 1. Provides a historical overview and details on the food-borne dangers of mold.

“Reduction of Pulmonary Toxicity of *Stachybotrys chartarum* Spores by Methanol Extraction of Mycotoxins”...Carol Y. Rao, Joseph D. Brain, and Harriet A. Burge. *Applied And Environmental Microbiology*, July 2000, v. 66, no. 7, pp. 2817–2821. Results of study from Harvard School of Public Health on the toxicity of *Stachybotrys* in rats.

“Stachylysin May Be a Cause of Hemorrhaging in Humans Exposed to *Stachybotrys chartarum*.”...Stephen J. Vesper and Mary Jo Vesper. *Infection and Immunity*, April 2002, v. 70, no. 4, pp. 2065-2069. Reports on a recent attempt to identify the toxic agent that could have caused the infant deaths in Cleveland.

“Study of Toxin Production by Isolates of *Stachybotrys chartarum* and *Memnoniella echinata* Isolated during a Study of Pulmonary Hemosiderosis in Infants.”...B. Jarvis, D. Dearborn, et al. *Applied and Environmental Microbiology*, October 1998, v. 64, no. 10, pp. 3620-3625. Results of a study to test the toxicity of *Stachybotrys*.

“Toxic Effects of Indoor Molds” (RE9736)...American Academy of Pediatrics, Committee on Environmental Health, Washington, DC. *Pediatrics*, 1998, v. 101, no. 4, pp. 712- 714. www.aap.org/policy/re9736.html Describes molds, their toxic properties, and their potential for causing toxic respiratory problems in infants. Guidelines for pediatricians are given to help reduce exposures to mold in homes of infants.

The National Academy of Science (NAS), Institute of Medicine has just launched an extensive review of the medical findings on “Damp Indoor Space and Health”. For a description of the project and list of the review panel, check the website: www.nas.edu/ Search under “Mold”.

Note: This is a small sampling of the medical literature. Look for other materials at the NAS site or on Medline: medline.cos.com/

Other Indoor Air Quality and Building Envelope Resources

Healthy Indoor Air for America’s Homes: Training Manual...Montana State University Extension Service, Bozeman, MT, in cooperation with EPA and other Extension Programs, 1999. Includes Bugs, Mold and Rot unit. Website: www.montana.edu/wwwcxair/ Provides various modules for training extension agents and anyone interested in indoor air quality.

American Lung Association, Washington, DC: www.lungusa.org/ Provides easy to understand information on health aspects of mold and other air quality topics.

U. S. Environmental Protection Agency, Washington, DC: www.epa.gov/iaq/homes.html Covers a wide range of indoor air quality topics. Includes extensive links to other sites.

U. S. Dept. of Housing and Urban Development, Healthy House Programs, Washington, DC: www.hud.gov/offices/lead/ Geared primarily to lead remediation, but does have links to other indoor air quality topics.

Insurance and Legal Concerns

Insurance Implications of Toxic Mold Claims... Independent Insurance Agents of America, Inc., Alexandria, VA, Website: vu.iaa.net/default.htm Provides insight into how the insurance industry is approaching the mold issue.

Mealey’s Litigation Report: Mold... Mealey Publications, King of Prussia, PA, Website: www.mealeys.com/specialreports.html Provides an extensive list of insurance claims and lawsuits that have been filed related to mold.

“Mold in Buildings: New Frontiers in Construction Defect Litigation”...C. Tapia and C. Parten, *Insurance Journal*, Website: www.insurancejrn.com/ (Search for Mold in Buildings) Another overview of the insurance perspective.

“Mold & Mildew: A Creeping Catastrophe”...*Claims Magazine*, August 2000. Website: www.claimsmag.com/Issues/aug00/mold.asp

Texas Insurance Commission: News Releases and Other Documents Related to Texas Mold Cases, Website: www.tdi.state.tx.us/commish/ Covers how the Commission has sought to deal with the extensive number of mold insurance claims and industries plans to limit coverage and raise rates.

Conference Proceedings

Bioaerosols, Fungi and Mycotoxins: Health Effects, Assessment, Prevention and Control... Eastern New York Occupational and Environmental Health Center. Johanning, E., editor. Albany, NY. 1999. (Proceedings of the Third International Conference on Fungi, Mycotoxins and Bioaerosols: Health Effects, Assessment, Prevention and Control. September 23-25, 1998.)

Bugs, Mold and Rot, II, Conference Proceedings... William Rose and Anton TenWolde, eds., Building Envelope and Thermal Envelope Council (BETEC), Washington, DC., 1994. Website: www.nibs.org/betecpubs.html. Volume III – Not released. Presents papers from two good conferences on mold and other indoor contaminants.

Other Resources Cited

Accreditation for Testing Laboratories...American Industrial Hygiene Association, Fairfax, VA. Website: www.aiha.org Has series of articles on mold posted on website.

Manual J – Residential Load Calculations... Air Conditioning Contractors of America, Arlington, VA. Website: www.acca.org Industry guide for sizing air conditioning and heating equipment.

April 2002