

INTERACTIONS BETWEEN WOOD AND AIR AT DIFFERENT TEMPERATURES AND RELATIVE HUMIDITIES

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Because of the tutorial nature of this talk, the text and overheads are not reproduced in this proceedings. For the reader interested in this subject there are a number of excellent references readily available, written for both the practitioner and the engineer.

1. Chapter 1 of the Dry Kiln Operator's Manual by William T. Simpson contains a section on wood-moisture relations. It has a psychrometric chart and a table of equilibrium moisture content and relative humidity as functions of dry-bulb and wet-bulb temperatures. This table is especially useful to the kiln operator because wet-bulb temperature is on the table. Other references often list only relative humidity and dry-bulb temperature. Shrinkage values for each species are also given. It is available from the Government Printing Office, 710 N. Capitol Street, Washington, DC 20402-9325.
2. The Kiln Operator's Handbook for Western Canada by J.F.G. Mackay and L.C. Oliveria also contains chapters on wood-moisture relations. This publication is available to Forintek member companies and can be purchased by nonmembers.
3. An excellent source of information on how the atmosphere interacts with wood is Fine Woodworking magazine. They occasionally have articles directed at the furniture maker and home craftsman which are easy to understand. They also have compiled groups of articles together into reprints.
4. For the technically-inclined, the Handbook of Industrial Drying by Arun S. Mujumdar contains mathematical detail about moisture-air relationships and a discussion of equilibrium moisture content for hygroscopic materials. It is published by Marcel Dekker, Inc. in New York.