





A photograph of a hallway with a polished wood floor. The walls are a light beige color with dark wood trim. Large windows with black frames are set into the wall, providing a view of greenery outside. Sunlight streams in from the windows, creating long, warm shadows on the floor. A red fire extinguisher is visible on the left side of the hallway.

# MAINTAINING THE BEAUTY OF WOOD FLOORS

by Grete Heimerdinger

With their warmth and charm, wood floors continue to be in high demand for use in many spaces, from dorms to offices, cafeterias to gymnasiums. Though many new types of flooring materials have been introduced in recent years, wood's elasticity, durability, and natural beauty really are hard to match.



Innovations in wood flooring have kept pace with innovations in other materials. Current offerings in engineered woods resist warping, hold up well to high levels of foot traffic, and can be floated on top of concrete. These newer wood flooring types can mirror the aesthetic of the room in which they are installed, and they can stand up well to many years of service.

Yet to keep a wood floor healthy, the floor needs to be cared for properly after installation. In addition to performing other kinds of routine floor maintenance and upkeep, people who care for wood floors must monitor the moisture levels of the floors as well as the humidity of the air surrounding them. Moisture meters can be essential tools for assessing moisture and preventing damage. Excessive moisture—or lack of moisture—in a wood floor can change the dimensions of the floor planks, leading to changes such as cupping, cracking, and other very visible defects. These defects are not only aesthetically displeasing, they can pose trip/ fall hazards in public spaces. The first step to preventing such damage—and the accompa-

nying challenges—is detecting the moisture and humidity which could cause issues.

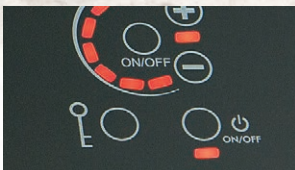
To keep tabs on moisture and humidity levels, professional flooring installers and inspectors use two types of meters to assess moisture and humidity: pin meters and pinless meters. Pin moisture meters run electrical current through small pins placed in the wood; the pins can leave holes in the wood even when used correctly. By contrast, pinless meters work by using electromagnetic signals. Pinless meters do not make holes in the wood, so they can be a better choice for high-quality wood floors. Maintenance crews for wood floors on campus—including gymnasium floors—can best detect moisture using pinless meters with included thermo-hygrometers. The pinless meter will measure moisture in the wood, while the thermo-hygrometer measures temperature and humidity in the surrounding air. This tool will allow maintenance teams to keep an eye on the moisture in the floor by taking moisture measurements in the same areas with the same moisture meter at regular time intervals, whether once per week or per

month. Moisture and humidity levels should be assessed after extended periods of rain, as well. These measurements should not vary a lot if the floor is stable.

Dual-depth pinless moisture meters offer additional useful information to use for wood floor maintenance. These devices measure moisture close to the surface as well as deeper down, to assess the entire floor plank. If these measurements are recorded over time, maintenance teams can compare current and previous measurements to gain an indication of whether or not the floor is stable. If the moisture measurements indicate that changes are taking place, precautions need to be taken to prohibit further absorption or loss of moisture. Either issue—excess or minimal moisture—will become visible in cupping, shrinking, or other types of warping. In addition to keeping ongoing records of pinless meter measurements, best practices for wood floor care include taking photos to correlate with the areas where the measurements were taken. This photographic evidence can facilitate record-keeping of the accumulated



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measurements to use for comparison from the same spots at different times. Repeated measurements of the same areas will show if the floor is stable or if potential moisture defects exist.

When maintenance crews use pinless meters with thermos-hygrometers to regularly assess the moisture in wood flooring, they can ensure that the relative humidity in the vicinity is wood-friendly. Records of every moisture measurement can be paired with the correlating relative humidity and temperature. Relative humidity levels up to 51% are still acceptable, but if those levels rise much higher, the wood flooring may begin to show moisture defects. In cases of extreme air humidity, the floor will buckle. However, all hand-held thermo-hygrometers only indicate momentary conditions. They provide no history; all records must be continuously retained by maintenance personnel. Outside of flooding damage, moisture changes in wood floors only occur when the relative humidity has been high or low over an extended period of time.

To better record ongoing air moisture levels, maintenance crews can install a data-logger such as Lignomat's Memochip BL2, which will record moisture changes for weeks, months and years. A high and low limit can be set to trigger an audible or visible alarm if the humidity levels drop too low or climb too high. These instruments independently monitor the climate in the room and can be used for long-term monitoring; they rely on lithium batteries, which can last for years.

Air humidity levels can vary widely throughout the year. For one example, in some locations in the cold winter months—due to the dry cold air outside—the relative humidity may drop as far down as 20%; this dip in moisture can mean that the wood could lose moisture to a low point of 4.5%. On the other hand, in the wet summer months, the relative humidity may increase up to a high of 70% or more; in these cases, the moisture in the floor could potentially increase to a level of 13%. These moisture extremes will almost certainly lead to unacceptable changes in the appearance and performance of the wood

flooring. If those extreme climate variations are prevented, the wood floor will be stable and defect-free throughout its usable life.

Wood flooring can serve in a wide variety of capacities and offer multiple design choices and styles. Adding moisture meters to the ongoing maintenance routine can extend the useful life of wood flooring and protect your investment in this dependable flooring choice.



**ABOUT THE AUTHOR:** Grete Heimerdinger

has been the technical adviser for the moisture meter division for Lignomat. She graduated from the technical university in Stuttgart and started Lignomat with her husband in 1982. Lignomat now offers a full line of pin, pinless and RH meters as well as wireless monitoring devices for buildings. For more information on moisture meters and data loggers contact Lignomat at 800-227-2105 or go to [www.lignomat.com](http://www.lignomat.com).



