



# HUMIDIFICATION FOR WOODWORKING

Improving product quality and profits  
with humidity control

## APPLICATIONS

Whether your facility stores lumber, produces wood products or manufacturers trusses, cabinets, flooring or furniture, ensuring consistent humidity control is essential to your operation.

Key applications of humidity control in the woodworking industry:

- Lumber drying
- Molding, framing and trusses
- Furniture and flooring
- Cabinets and storage
- Musical instruments
- Caskets

## GLOBAL EXPERTISE, LOCAL SOLUTIONS

Condair Group, founded in 1948, is the global leader in humidification, dehumidification and evaporative cooling. Supported by science, we engineer individual, holistic solutions that customers can trust through the entire lifecycle. With optimal humidity, we increase productivity and create healthier built environments. Condair Group has production sites in North America, Europe, and China, its own sales and service organizations in 22 countries, and representatives in 50 locations worldwide.

With a comprehensive suite of humidification products including isothermal, adiabatic and evaporative cooling solutions, Condair is able to design a the perfect solution for your application to create the optimal production environment. Our team of humidification experts offer installation, commissioning and maintenance support to ensure improved production efficiencies continue to return on the intial investment for many years.

# PROCESS

## OPTIMAL HUMIDITY FOR WOODWORKING

The optimal relative humidity for ensuring the best-quality results ranges from 40% to 60% percent, depending on the application. For example, maintaining sufficient moisture in kiln-dried wood requires a more humid environment; 55% to 60% RH. This is because drier atmospheric conditions draw moisture from the wood, making it brittle and more susceptible to damage and shrinkage.

## MAINTAIN EQUILIBRIUM MOISTURE CONTENT

Equilibrium Moisture Content (EMC) describes the point at which the wood has the exact same moisture content as its surrounding environment so that it neither releases nor absorbs additional moisture.

EMC is a state of complete balance between the wood and its environment. If the relative humidity rises, the wood will absorb the additional moisture from the air. If it lowers, moisture will be drawn out of the wood and lost into the air.

## WHY IS EMC IMPORTANT?

Since wood is a hygroscopic material (moisture-interactive), changes in the wood's moisture content (MC) will cause corresponding changes to its physical dimensions. When wood absorbs moisture, the wood cells expand, and when it releases moisture, it will shrink.

If these changes occur to wood after the project is completed or installed, they may lead to a host of problematic symptoms like cupping, crowning, splitting, gapping and more.

## ON THE PRODUCTION LINE

It is likely to see reduced machine speeds, increased stops, machine settings issues and problems with production quality when humidity is not maintained. This leads to predictable drops in production efficiency, increased machine and tool wear, and a higher number of part rejects. As well, static electricity in a woodworking environment increases when dry air causes surfaces to become charged. This poses a variety of serious problems, including dust fires and static explosions. In some cases, static electricity can also affect the way paints and finishes adhere to the wood.

## PROTECTING YOUR WORKERS

Employees are your most precious asset! A successful business needs a workforce that is not just motivated and efficient, but also healthy.

Survival time and transmission of viruses, and the immune defence of our mucous membranes both are crucially influenced by air humidity. Studies have shown that the transmission of airborne viruses, such as influenza and COVID-19, are greater at a low humidity level. Maintaining optimum humidity levels within your work space will reduce airborne transmissions and therefore reduce absenteeism.



Other less recognizable effects that can have a huge impact on the performance of employees include a dry throat that can affect the voice, dry itchy skin, contact lenses prematurely drying out and causing discomfort, sore eyes and an increase in dehydration. When buildings are consistently humidified for balanced RH conditions, people are less susceptible to health risks and discomfort, reducing absenteeism, and increasing productivity. With optimal humidity, we increase productivity and create healthier built environments.

# PRESERVATION



Do you manage a concert hall or museum, oversee production at a hardwood flooring manufacturer, or build custom wooden furniture for clients? If so, you'll know the impact that indoor relative humidity can have on wood. If levels aren't tightly controlled, there can be plenty of ill effects no matter what your operating application is. These issues can include warping, shrinkage, cracking, splitting, checking, cupping and other dimensional problems with painting, finishing and gluing.

## OUR WOODWORKING CLIENTS INCLUDE:

- Ashley Furniture Industries
- Batesville Casket Company
- Crown Point Cabinetry
- Kitchen Craft Cabinets
- Nemschoff Inc.
- Woodcraft Industries
- MasterBrand Cabinets

From instruments to picture frames, wooden objects are highly reactive to relative humidity fluctuations. These fluctuations cause dimensional changes, making it extremely hard to preserve and object's external surface and functionality. Keep musical instruments in tune, prevent picture frames from warping, and keep historic wooden details in tact by stabilizing the relative humidity in your institution of arts and preservation.

### Preserve and Protect:

- Historic wooden artifacts
- Historic wooden architecture
- Musical Instruments

## THE BENEFITS OF HUMIDIFICATION FOR WOODWORKING BUSINESSES

Controlling air humidity is an indispensable measure in many aspects of life. While optimal humidity ranges may vary from one industry to another, creating stable humidity environments is invaluable when preserving product value, improving equipment and employee productivity, and establishing comfortable and healthy environments for building occupants, all of which have an impact on your business's bottom-line profitability.



- Reduce waste and product defects
- Optimize application and drying of glues and lamination
- Reduce issues with woodworking machinery
- Reduce dimensional changes of wood
- Improve product quality and consistency
- Limit airborne dust and particle suspension
- Reduces risk of dust fires
- Reduce employee absenteeism

# PRODUCTS

TRY OUR PRODUCT  
SELECTOR TOOL



## Electrode steam humidifiers

Clean steam technology with a reliable design and touch screen controller.



## Evaporative media humidifiers

Economic to use and effortless to maintain. Unique evaporative cassettes offer high performance and efficiency.



## Resistive steam humidifiers

Accurate, clean atmosphere steam with scale management.



## Direct room humidifiers

High-pressure module provides energy-saving humidity control and evaporative cooling directly to the room.



## Gas-fired steam humidifiers

Pure, clean atmospheric steam with energy efficient operation.



## High-pressure nozzles

Advanced atomization nozzles ensure complete evaporation and cost-efficiency.

Our range of available systems comes in various load capacities, making them ideal for everything from small businesses to large-scale industrial manufacturing and warehousing complexes. You can find reliable, dependable, and easy-to-maintain Condair systems all over the globe, a testament to their quality, cost-effectiveness for clients, and reputation for optimal performance.

To learn more about Condair and our indoor humidity control solutions, contact us today. We're happy to help!



Visit [humidity.com](http://humidity.com) - Live chat available 24/7  
Chat with us today and request your free humidity assessment.

## FREE CONDAIR HYGROMETER

It's always a good idea to have a working hygrometer on site to ensure that your woodworking conditions are adequately humidified.

Visit [www.condair.com/hygrometer](http://www.condair.com/hygrometer) to request your complimentary hygrometer!



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