

Applied Humidification Guide Series

Field-proven guidance for HVAC contractors and installers

Early Warning Signs of Humidity Issues in Commercial Buildings

Most humidity problems do not start with a service call that says, “The humidity is wrong.” They usually show up as comfort complaints, ongoing maintenance issues, or signs of building damage that do not seem to have an obvious cause. For mechanical contractors, recognizing these early warning signs is critical. Catching a humidity issue early can mean the difference between a straightforward correction and a long-term problem that keeps coming back.

Signs of Air That Is Too Dry

Dry air is one of the most common humidity issues in commercial buildings, especially in colder climates and in buildings that bring in large amounts of outdoor air. When cold outdoor air is introduced and heated, its relative humidity drops quickly unless moisture is intentionally added back into the airstream.

Occupants often notice the effects right away, even if they do not describe the problem as “low humidity.”

Common complaints include:

- Dry or irritated eyes and skin
- Sore throats or sinus discomfort
- Increased static electricity, including shocks from door handles or equipment
- General feelings of discomfort, even when space temperature is within range

From a building standpoint, dry air can quietly cause damage over time.

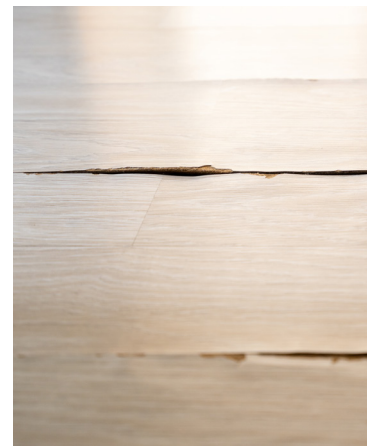
Contractors may see:

- Cracking or shrinking of wood floors, trim, and millwork
- Warped doors that no longer close properly
- Gaps forming around windows, doors, and frames
- Increased static-related issues with sensitive equipment or controls

These symptoms are often treated as isolated comfort or maintenance problems. In reality, they usually point to a building that lacks proper humidification or has a humidification system that is undersized, disabled, or not operating as intended.



Humidity problems often show up as occupant discomfort.



Low humidity can lead to visible flooring damage.

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Signs of Excess Humidity

At the other end of the spectrum, excess humidity tends to show up during the cooling season, during shoulder months, or in spaces with high internal moisture loads. Kitchens, locker rooms, healthcare areas, manufacturing spaces, and buildings with variable occupancy are especially vulnerable.

Some of the most common warning signs include:

- Condensation on windows, skylights, diffusers, or supply ductwork
- Musty or damp odors, particularly in the morning or after system setbacks
- Visible mold or mildew growth on surfaces or inside ceiling spaces
- Corrosion on HVAC equipment, piping, or electrical components
- Complaints of spaces feeling “clammy” or uncomfortable, even when temperature is correct

These indicators suggest that moisture is being generated faster than it is being removed, or that the HVAC system is not effectively controlling humidity under part-load conditions.



When humidity is not controlled, condensation can form on windows.

Why Condensation Is a Major Red Flag

Condensation deserves special attention because it almost always signals a control or application issue. It typically means one or more of the following is happening:

- Moisture is being added upstream of where it can be fully absorbed
- Air velocity, temperature, or mixing distance is insufficient
- Humidification equipment continues operating when airflow is reduced or shut off
- Sensors are poorly located or providing inaccurate feedback

Left uncorrected, condensation can lead to insulation damage, ceiling stains, mold growth, and complaints that quickly escalate beyond the HVAC system.



Ceiling stains can be a sign of uncontrolled humidity.

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Confirm Before You Adjust

Before making adjustments or recommending equipment changes, contractors should confirm actual humidity conditions using reliable sensors or handheld instruments. Visual clues and occupant complaints are important, but real data tells the full story.

It is also helpful to look for patterns that connect humidity issues to:

- Outdoor weather conditions
- Time of year or season changes
- Occupancy schedules
- System setbacks, turndown, or shutdown periods

Many humidity problems are not caused by equipment failure. More often, they stem from control strategies, sensor placement, system design limitations, or changes to how the building is used. Once the root cause is properly identified, these issues can often be corrected without major system overhauls.

For mechanical contractors, understanding these early warning signs puts you in a stronger position to diagnose the real problem, protect the building, and deliver a solution that lasts.

When to Consult Your Local DriSteem Representative

Humidity issues are often more complex than they appear at first glance. If symptoms persist after basic troubleshooting, or if the root cause is not clear, consulting a local DriSteem representative can help shorten the path to a reliable solution.

DriSteem representatives work closely with mechanical contractors and understand how humidification systems interact with real-world HVAC designs and operating conditions. They can help evaluate whether the issue is related to system sizing, dispersion placement, controls, airflow changes, or shifts in how the building is being used.

A local representative can assist with:

- Reviewing the application to confirm the humidification approach matches the space and load
- Identifying common installation or control issues that lead to condensation or uneven humidity
- Verifying absorption distance, airflow requirements, and sensor placement
- Recommending control strategies that align with part-load operation and seasonal changes
- Supporting system retrofits or adjustments without overcorrecting the problem

Involving a humidity specialist early can prevent repeated callbacks, protect building materials, and help ensure the system performs as intended over time. For contractors, it also provides an extra layer of confidence when addressing comfort complaints or moisture-related damage.

When humidity problems affect occupant comfort, building integrity, or indoor air quality, collaboration is often the fastest way to get it right.

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Why Choose DriSteem Humidity Control Systems?

Committed to Quality

DriSteem has been a leader in humidification technology for over 60 years, delivering precision, reliability, and innovation across industries worldwide.

DriSteem offers unmatched expertise, a full range of energy-efficient humidification and water treatment solutions, and comprehensive support from design through installation and maintenance.

With proven performance in critical environments and a commitment to sustainability, DriSteem is the trusted partner you can rely on to protect processes, improve yields, and reduce operating costs.

DriSteem U.S. operations are ISO 9001:2015 certified and committed to providing high-quality products, efficient services, on time delivery, and innovative solutions.

Support and Reliability

DriSteem sales representatives are the industry experts in humidification systems, and are trained to recommend and specify the best solution for any application. They are willing to go the extra mile to make sure everything runs smoothly at start-up and for the life of the equipment.

DriSteem stands behind their products with a world-class Technical Support team available to troubleshoot any issues that may arise. They can also provide start-up assistance and offer field service visits.

Installation Guidance

For proper installation, start-up, and long-term performance, mechanical always consult the manufacturer's Installation, Operation, and Maintenance Manual (IOM) for the specific product being installed.

The IOM provides product-specific requirements, best practices, and safety information that must be followed to ensure reliable operation and warranty compliance.

All DriSteem product literature, including current IOMs, is available at www.dristeem.com





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Expect quality from the industry leader

Since 1965, DriSteem has been leading the industry with creative and reliable humidification solutions. Our focus on ease of ownership is evident in the construction of DriSteem products. DriSteem leads the industry with a Two-year Limited Warranty and optional extended warranty.

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For the most recent product information visit our website:

www.dristeem.com

Contact your local representative for more information about DriSteem products:



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