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## **Why Is There Mold Around My Windows?**

The growth of mold on window sills, frames, glass and tracks is a common problem in many of the homes built today. The presence of mold growth on window surfaces can easily be controlled through regular cleaning and building maintenance and does not adversely impact the air quality unless the growth is extensive and not handled properly. It is often more of an aesthetic concern to homeowners than a health issue.

Mold growth is common whenever an organic food source (something derived from a plant or animal, such as paper, wood, and cardboard) comes in contact with moisture for any extended period of time. In order to control mold growth, it is necessary to control either the food source or the moisture source. The following are some suggestions for controlling the food and moisture sources on window surfaces to help limit the development of mold growth.

### **How do I control the food source?**

The aluminum and vinyl frames around windows and the window glass are not food sources for molds. When mold growth is found growing on these surfaces, it is usually feeding on organic debris (skin cells, pollen, animal dander, dust mites, insect fragments, etc.) that accumulate on these surfaces.

These particles are commonly found in indoor air and are common components of house dust. Regular cleaning of surfaces where dust can accumulate can minimize the food source and help to control mold growth. Painting window sills with a high gloss paint can also make cleaning easier and help to protect the wood or the organic components of the sheet rock on the window sill from coming in contact with the moisture.

Controlling the level of these organic particles in the air will also reduce the number of particles that settle on surfaces and further help to control mold growth. Using a high efficiency filter on the HVAC return and changing the filter often will help to remove more of these organic particles from the air. Vacuuming with a HEPA filter vacuum will also help to remove settled particles from carpeting and upholstered furniture items. Without a HEPA filter, the microscopic organic particles that are vacuumed can easily move through the vacuum and become airborne only to resettle later. Dusting with a damp cloth or an electrostatic cloth rather than a feather duster or dry cloth will also help to remove settled dust rather than making it airborne. Regular ventilation with outdoor air will also help to dilute the concentrated particles typically found in indoor air and further reduce the number of particles that settle.

### **How do I control the moisture source?**

In most cases, the moisture near windows that allows mold to grow is due to condensation on the window glass or frames. This is becoming a more common problem in homes, which are now required to be highly energy efficient. The same construction technology and code requirements that keep heated air or cooled air inside also traps moisture inside.

Moisture is produced from a variety of sources including bathing activities, cooking, clothes laundering, human respiration, humidifiers, slab foundations, or construction defects to a name a few. It is necessary to periodically

open windows and use exhaust fans to regularly prevent this moisture from accumulating in the air indoors, which leads to elevated relative humidity levels and possible mold growth. Relative humidity is a measure of the moisture content in the air expressed as a percentage of the amount of moisture that the air is capable of holding at a particular temperature. Indoor relative humidity levels should be maintained below 50% to minimize the potential for mold growth or other indoor air quality problems.

Because warm air can hold more water than cold air, when warm, moist air is cooled, condensation occurs. The temperature at which this occurs is called the dew point. The dew point is often reached at windows when warm air inside comes in contact with a cold glass or metal surface on the window. This is usually more common in the winter time and is most prevalent during the early morning hours when outside temperatures are at their lowest. Much of this condensation quickly evaporates as outside temperatures increase during the day unless the indoor air is already very humid.

While some condensation is likely to occur at most windows during some parts of the year, there are several ways to control the level of condensation that develops. These include:

- **Increasing Air Circulation at the Window Surface.**

Increasing the air circulation at the window surface can help to prevent warm moist air from becoming stagnant around the cold window surface where the condensation can occur. Air circulation can be increased through the operation of ceiling fans at night in rooms with the most glass exposure. Air circulation can also be increased by reducing the amount of window covering over windows at night or during the winter; or by using window coverings that are made of breathable or porous materials. Condensation is often more significant on windows that have heavy metal or wood blinds or shutters.

Opening blinds and shutters during periods of decreased outside temperatures or raising mini-blinds at least 2 inches above the window sill will also help to increase air circulation at the window, if changing the window coverings is not an option.

- **Reduce the Level of Moisture in the Air**

Reducing the level of moisture in the air will help to keep relative humidity levels low and help to prevent condensation. Moisture can be removed from the air by use of exhaust fans, opening windows and ventilating with outdoor air or through operation of a dehumidifier. Never operate humidifiers indoors, which only add moisture to the air unless you take measures to maintain or control relative humidity levels. A hygrometer, or relative humidity meter, can help to monitor relative humidity levels so occupants can ensure they stay within normal limits. In the winter time when buildings typically receive less ventilation with outdoor air, a hygrometer can alert occupants to when relative humidity levels increase to the point where it is necessary to open a window or operate an exhaust fan. After showering or bathing, either the exhaust fan in bathrooms should be run or the windows should remain open until the relative humidity levels decrease below 50%.

- **Manually Remove Standing Water on Window Surfaces**

At times it may not be possible to effectively control relative humidity levels or the level of air circulation and condensation will still occur. In these instances, it may be necessary to remove the condensation manually by wiping with a dry cloth. This is generally not the preferred method of control for building occupants, but it is effective. It is usually not necessary to wipe up condensation on all windows or on every day. Most condensation that develops will evaporate naturally. It is typically on north facing windows or windows that are in shaded areas for longer periods where the moisture takes longer to dry. Condensation will also generally be worse on days where outdoor temperatures are lowest, and it is on these days that wiping window sills is often necessary.

## **How do I clean the existing mold growth?**

To clean existing mold growth on window surfaces, use a detergent solution and a sponge or nylon brush. It is not necessary to use harsh chemicals such as chlorine, which can potentially damage metal surfaces or carpeting below the window. Detergent is just as effective at removing the accumulated dust on which the mold is feeding. Rubbing alcohol or a diluted chlorine solution can be used in small amounts as a final sterilization of the surfaces after cleaning, however, the sterilization will only be effective until new dust starts to accumulate. If mold growth is present on sheet rock window sills, the same cleaning methods would apply. It may take longer to clean the sheet rock since the texture over the sheet rock is porous. Continuous cleaning may damage the paint, which should be reapplied if necessary.

The mold growth rarely extends below the top surface of the sheet rock sill, and it is not necessary to remove the window sill unless the water damage and mold growth is very extensive such that the sheet rock has become soft and is not structurally sound.

While controlling moisture and mold growth on window surfaces requires some regular maintenance by building occupants and can be inconvenient at times, it is usually only for three or four months during the winter that these steps are necessary. Once temperatures increase outdoors, condensation becomes less of a problem.

If all window sills in a building are cleaned at the beginning of spring, mold growth will typically not return until the next winter. If existing mold growth is not cleaned as summer approaches the mold growth will dry and will be harder to clean later.

While mold growth on window surfaces due to condensation is not a significant problem, mold growth or water staining below window sills or at the base of the wall below a window could be a sign of a larger problem with water intrusion from outdoors. This can potentially lead to more serious mold growth and water damage that may not be initially visible. If mold growth or water damage is observed below the window sills, then additional investigation work should be completed to determine the moisture source so it can be quickly resolved.

It is also important to regularly inspect and maintain the condition of the caulking around the window sill to prevent condensation from entering wall cavities where moisture takes longer to dry, which could lead to more extensive mold growth.

Newer window frames are also designed to drain and have weep holes in the outer portion of the frame. The drain holes in the window tracks should also be checked regularly as part of good housekeeping and maintenance to ensure that debris has not clogged the holes, which could also lead to more significant water damage.

There are various types of installation procedures for windows. They may be flush to the interior wall or be recessed with either a sheet rock or wood sill plate. There may be a drainage mechanism designed into the tracks or if the sills are flush it could cause condensate to run down the outside of the sheet rock on the wall below the window. Regardless of the type of installation, good maintenance and proper care can avoid any water damage or possible mold growth that may occur.

**If you have further questions or concerns feel free to contact one of our experienced mold technicians @ (631) 681-4261 or by emailing us [globalmoldsolutions@gmail.com](mailto:globalmoldsolutions@gmail.com).**