

“Condensation on Windows and Doors”

By: Greg L. Cunningham

Condensation, likely the result of excessive humidity, is a common problem on windows and doors. To reduce or eliminate potential humidity problems, typical trouble spots should be addressed during construction. Commercial buildings such as hotels, condominiums and multi-functional facilities housing a number of people are more likely to be humid. Interior humidity can be increased in a number of ways.

A significant drop in the temperature results in the building’s heating system working overtime. When the heat rises to the upper floors they will become warmer and more humid. This could result in excessive condensation on the windows and doors on the upper floors. Dehumidifiers added to the mechanical equipment or smaller room-sized humidifiers placed within the problematic rooms can work to alleviate the problem. Monitoring the weather conditions and installing a humidistat will be helpful in determining when to utilize the dehumidifier.

New buildings will experience more humidity during the first year or so because the building materials have absorbed moisture during construction. If a building has a permeable exterior skin it will allow the building to breathe and materials to dry out; but, the building can be expected to be more humid during this period. If a building has a non-permeable exterior skin and is not allowed to breathe, the drying-out process may last much longer resulting in more severe condensation. If the exterior walls are tight and are not allowed to breathe, the likelihood of condensation on windows increases because the moisture vapor will travel to the exterior windows or door.

Vented hood exhaust units typically found in kitchens and restrooms can also generate humidity. These units sometimes become clogged or malfunction allowing excessive amounts of humidity into the facility. Appropriate maintenance to keep the units working properly will greatly reduce condensation within the space. During the design phase of the project consideration should be given to reducing the height of lofty ceilings in an effort to reduce the amount of condensation on windows, storefronts and doors that are construction from aluminum. The use of thermally broken window frames and doors should also be considered. The direction the building faces, the way it is constructed and the surrounding terrain can also have an effect on interior condensation.

Aluminum windows, storefronts and doors conduct heat and cold more rapidly than their wood or vinyl counterparts. The aluminum should be thermally broken to break the conductivity from the outside temperature to the inside temperature. Thermal break construction will aid in the control of condensation; however, the other things mentioned within this article need to be practiced as well.

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Insulated glass is a must to separate inside from outside and warm edge technology spacers within the insulated glass unit will also help to reduce condensation. Draperies or blinds mounted closer than six inches to the glass may not allow air flow between the window and the window covering. The resulting trapped humidity may cause additional condensation problems.

All these precautions have an increased price which may seem too much for many budgets and therefore get eliminated during the preliminary stages. Too many reductions may create problems later for tenants or patrons who occupy the space and experience condensation problems often leading to damage to the interior finishes and flooring.

Planning up front with involvement of a building envelope waterproofing consultant and an HVAC expert can help to reduce the likelihood of condensation problems on windows, storefronts, curtain walls and doors.

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