

CONDENSATION

Indoor condensation

Indoor condensation that may form on the inner side of the sealed units is normally found at the bottom of the glass surface. This phenomenon is likely to occur when the outside temperature is low, or decreasing rapidly, while the indoor air is loaded with moisture and humidity. As a matter of fact, warm air containing water vapour (humidity) comes into contact with the cold glass surface so that it reaches its "dew point" and then, this humidity transforms itself into water droplets on the glass. It is exactly the same phenomenon that happens when a bottle or a glass is taken out of the fridge during hot and humid weather.



Image 1. Picture showing the condensation phenomenon inside the sealed units

Outdoor condensation

For its part, outdoor condensation is pretty much the same air phenomenon that reaches its "dew point" and that transforms into droplets but on the outer side of the sealed unit. The condensation may appear not only on a large section of the direct set but also on the outer side of the shutters, frames and on the exterior cladding of the house. It is also not unusual to see condensation in the morning, on the exterior surface, following a direct exposure to a star-filled night. The outside dew is truly not problematic and is not considered as a defect. It rather demonstrates the efficiency of your windows.



Image 2. Picture showing the condensation phenomenon outside the sealed units

Main causes of indoor condensation

Like the outdoor condensation and, contrary to popular belief, the condensation on the inside glass surface is not the cause of a defective unit. It is rather the **result of a high rate of humidity within your house** that should be controlled according to the outside temperature. The principal moisture sources include, among others, the occupants, the cooking process, the dishwasher, the shower, the bath and the plants.

Consequences

Some problems such as peeling paint, rotten wood, mold that can cause spores, toxins and odours as well as humidity stains are amongst the undesired effects of condensation.

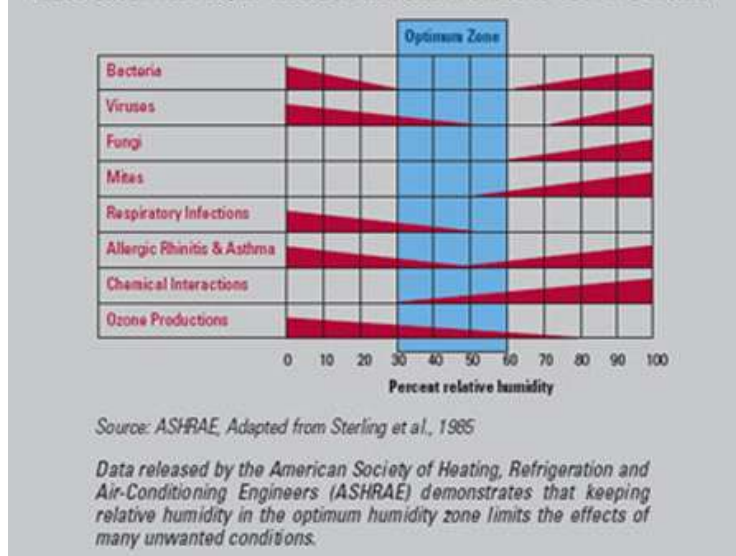
How to detect it

It generally appears in the form of humidity on the inner side of the glass. The problem is more noticeable on the lower section of the glass because this surface tends to condense easily. It means that the glass is at the lowest temperature of all the visible surfaces of your house. It should be noted that if the humidity is observable, it will be present in other non-visible areas as well. It may also happen that the condensation forms solely on some of your windows (as shown in image 2). That is because several complex surrounding conditions and factors come into play.

How to solve it

By respecting a humidity range between 30% and 50%, you will be able to reduce the humidity while maintaining your comfort. As shown in the table below, this zone is at its best to control the side effects into any living space.

Table 1.0 Optimum relative humidity range
Optimum relative humidity range to minimize harmful contaminants
 (a decrease in bar height indicates a decrease in effect for each of the items)



You can easily adopt different measures in order to reduce your indoor humidity range. The most important one is to make sure that the relative humidity of your house does not exceed the recommended rates.

Here are some additional tips that can help you reduce the humidity in your house so that you can remain comfortable at all times:

- Get a high-quality hygrometer. This tool is used to measure the humidity rate in a room or your whole house.
- Opt for an air exchange system or a dehumidifier.
- Remove and store your screens during winter time.
- Leave the curtains open so that the surface of the glass is well vented. Your blinds and curtains should not prevent the air to circulate freely. Avoid closing them completely.
- Use the exhaust fans in the kitchen and the bathroom when you cook or take a shower. If you do not have a ventilation system in these rooms, open a window slightly.
- Make sure that your dryer vents to the outside of the house.
- Avoid hanging up wet clothing inside.
- If you do not have an air exchange system, leave some windows open to let fresh air in.
- Make sure that the vents in your attic and crawl space are not blocked at all times, in both winter and summer.
- Store your firewood outside of your house.
- Avoid keeping too many plants inside.

- Try to maintain a proper humidity rate in the basement as it likely has an impact on the whole house.
- Leave the inside doors of your house open to allow for an improved air circulation between the different rooms.
- Choose an appropriate glazing option such as triple sealed units or Low-E coating.

Do not hesitate to contact your Lepage distributor should you need more information, advice or help on this topic.

Your Lepage Millwork Team