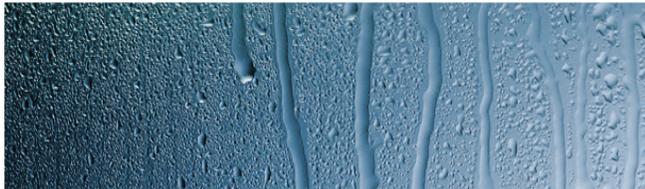


Condensation

Condensation is the visible change of water vapor in air - to a liquid state that often forms as droplets on windows, patio doors, and skylights in a home. It is important to point out that these windows, patio doors, and skylights are not the cause of condensation, but rather indicators of excess moisture in a home. Condensation on a skylight is not formed by water 'sweating' into the home; it is merely acting as a collector for the water already in your home condensing from the cooling air.



In winter months, the air temperature difference between the inside of a home and the cool outside air is much greater. Laws of nature state that warm air will flow towards cool air; the same basic principle that creates wind in our atmosphere. Although the technology used in manufacturing insulated glass units used in windows, patio doors, and skylights has greatly improved in recent years; these products are still less efficient than the insulated walls that make up the remainder of your home. Some heat will escape in these areas which leaves cold pockets of air near the surface.

Warm air can hold more moisture than cool air. As the air decreases in temperature near a window, patio door, or skylight it can not hold as much water vapor, thus resulting in condensation forming on your glass and/or frame. Often, condensation will form first on the metal framing of the product. In extreme conditions, condensation can form on the most efficient of vinyl or PVC frame.

What does this mean?

Condensation is an indication that your humidity level is too high; there is too much moisture in your home. You can see this happening on your exterior glass products, but the same phenomenon occurs between the sheetrock and the studs of your walls. Particularly around nail heads, since metal is a poor insulator of temperature. Excessive moisture in your home can cause damage to your home in the form of warp, rot, and paint chipping. This is potentially dangerous when high humidity in your home aids in the formation of mildew and mold; especially when formed inside the walls. Most likely, when you have condensation on your windows, patio doors, and skylights; this is also happening in your walls.

What causes high humidity levels?

Studies have shown that a family of four generally adds 18 gallons of water to the air in a week from daily life. Normal activities of showers, cooking, dishwashing, and even breathing release water into your air. Other common factors include gas appliances, large fish tanks, and house plants.

The problem is more common in newer built homes where the construction methods are 'tighter' than older homes which were built more breathable. Tighter built homes have far greater energy and heating efficiencies but tend to trap humidity in as well. Older homes allowed the gained water vapors to escape out, as well as the heat

Why is condensation forming now?

Over the summer with the warmer air, your house will collect and hold moisture. You will begin to heat your home when the weather outside cools down in winter months. Your house will go through a drying out phase, which will increase the humidity in your air and the likelihood of condensation forming. This phenomenon occurs generally with rapid decrease in outside temperature in the Fall season.

What's the solution?

There is no one solution for everyone. Often, a combination of procedures is required to manage a homes' humidity level.

- Remove or control obvious sources of moisture.
- Increase the ventilation and circulation of the interior air, including attics. Keep interior doors open.
- Vent air through windows for a short period daily.
- Open a window during showers and while cooking.
- Maintain a constant thermostat setting throughout the day; above 68° is recommended.
- Increase the air circulation of your home and allow air to pass through blinds and drapes.

When managing condensation, it is key to remember that the excess moisture that is already present in your home is the cause, and not your window, patio door, or skylight. CrystaLite skylights are constructed using the best dual-sealed insulated glass possible. We can help you select which of our products will deliver the optimal thermal properties for your installation. Condensation is a real world scenario. Our skylights are built with condensation gutters that collect running water when extreme condensation conditions occur and pass it to the outside through weep holes.

Exterior Condensation

Conversely, exterior condensation, which forms on the outside pane of the skylight or window, typically occurs in the summer. This type of condensation can occur for several reasons; primarily because the glass temperature drops below the dew point temperature of the outside air, air with a high relative humidity.

Due to improved skylight and window design, and advances in glass technology (low-e coatings, argon gas, multi-pane) - exterior condensation is becoming a common occurrence in the NW during the mornings when dew is also on the grass.

While unsightly, exterior condensation should not concern you since it usually evaporates as the day wears on and will not affect the interior of your home. Since you cannot control the relative humidity outside your home, the only step you can take to combat exterior condensation is to warm the inside surface of the window, as this is a way to warm the outside surface. Seeing exterior condensation on those rare days should be reassurance that your skylights and windows are doing their job: keeping your heating and cooling in your home where it belongs and saving you money.