Resolving common myths about residential HRVs and ERVs

There is confusion amongst the HVAC industry, contractors, and builders regarding whether Heat Recovery Ventilators (HRVs) are better suited than Energy Recovery Ventilators (ERVs) for installation in northern climates. This uncertainty stems from some manufacturers stating unproven claims and subjective evidence about the effectiveness of ERVs in colder regions.

An ERV is not recommended for areas where the temperature drops below – 4C (25F).

HRVs and ERVs are both designed to bring in fresh air from the outdoors and exhaust stale air from the home, creating a healthy, comfortable living environment. HRVs are typically used in climates that experience longer heating seasons, while ERVs are designed for southern regions that experience high humidity, and have longer cooling seasons, such as Florida and the US Gulf Coast.

Myth #1: ERV cores are designed to operate year after year even in extreme cold winter weather.

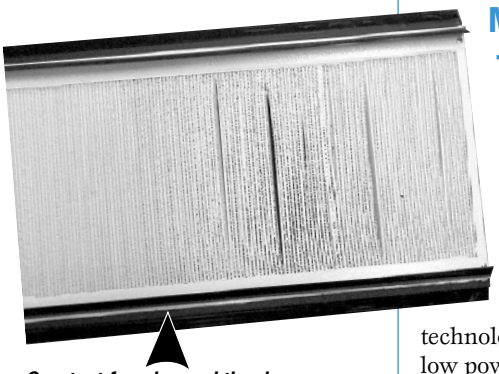
Truth: The fact is that water vapor condenses when it comes in contact with a cold surface, whether it is an aluminum HRV core or a paper ERV core. The difference is that an ERV core is made of paper and adhesives that absorb water and freeze. The expansion forces of ice cause the paper core to deteriorate. For this reason, an ERV is not recommended for areas where the temperature drops below -4C (25F).

Myth #2: Installing an ERV eliminates the need for a humidifier in an uncomfortably dry home.

Truth: In a very dry home, there is not enough humidity in the indoor air. Therefore, a humidifier is needed to add humidity and an HRV will better control excess humidity that can cause mold and mildew.

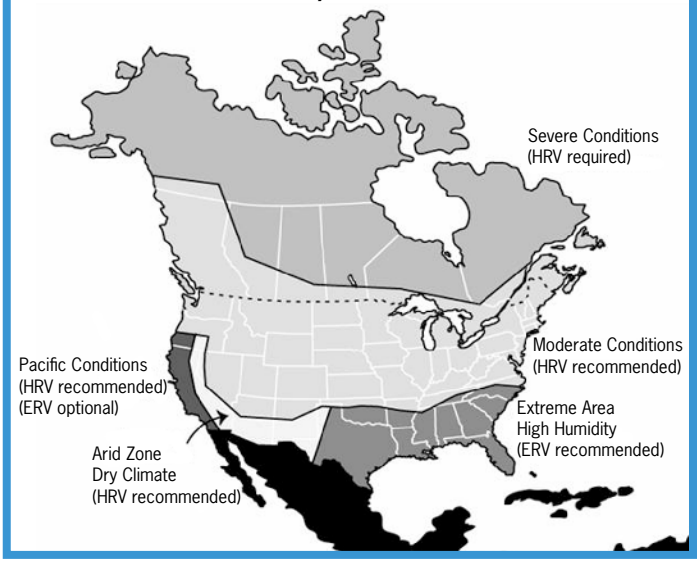
Myth #3: ERVs dehumidify in humid and hot conditions.

Truth: Only a correctly sized air conditioner or dehumidifier will control humidity in summer conditions.



Constant freezing and thawing in a cold climate has caused the paper ERV core to separate and deteriorate.

Select the Correct HRV/ERV to Match Your Climate



Myth #4: ERV's temperature transfer is among the highest tested by HVI.

Truth: Paper is not a good conductor of heat, unlike aluminum which is widely applied in heat exchangers. In cold climate conditions, the ERV's temperature transfer performance just does not compare.

MYTH #5: ERV's have the highest efficiency and lowest energy consumption.

Truth: Many ERV manufacturers use cheap, single speed motors with low efficiency that use twice the power consumption of a Lifebreath.

Myth #6: ERV's are easy to maintain.

Truth: Dirt accumulates inside all HRV and ERV cores. Only an aluminum HRV core can be thoroughly washed with soap and water.

Without a doubt, the Lifebreath HRV is the best choice for any region that experiences freezing conditions, as proven by the results of HVI's "Low Temperature Ventilation Performance" test (www.hvi.org). Lifebreath HRVs are the best in the industry because of their leading core technology, defrost mechanism, many "built in" standard features, low power consumption, high maximum efficiency, and warranty.

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