



Ventilating your bathroom: why and how

Condensation on the windows is one sign that you're not getting adequate ventilation.

Every building code in the state of Alaska now requires new construction to have mechanical ventilation. While some homes are not beholden to building codes, they should still be regarded as standards to ensure the health and safety of occupants. Ventilation is especially important in tight homes where natural air leakage does not provide adequate fresh air. Current cold climate construction practices are often yielding extremely tight homes with .07 natural air exchanges per hour or even less. (Any home using Alaska Housing Finance Corporation financing must ventilate at least .35 air exchanges per hour, or a third of the air in the room).

While a heat recovery ventilator (HRV) or a Fresh Air Inlet are the only options for whole house ventilation, if you have smaller ventilation needs you can start with something localized like a bathroom fan.

The airflow through a bathroom fan is measured in cubic feet per minute (CFM). A bathroom needs a minimum of 50 CFM intermittently or 20 CFM continuously. Fans are labeled with a CFM rating, but the ductwork you attach to the fan will affect its flow rate. If you run ducting in long, 30-foot runs and/or lots of 90 degree turns, you will need to double the fan capacity to 100 CFM. Ducts for a bath fan exhaust can be run with plastic, such as ABS or PVC, or metal, such as 29 gauge warm air snap seem.

Ducting made of smooth materials will let more air flow than the flexible slinky-style duct materials. Slinky-like flexible ducting is only appropriate for very short lengths, approximately five feet. Another use is for the connection between the fan and the ducting, in order to reduce vibration. If the ductwork passes through the attic, or any unconditioned space, it will need to be sealed and insulated to prevent heat loss.

There are several local companies that can assess your situation and install the right system, or sell the appropriate hardware if you want to do the job yourself.

If you continue to see condensation on your windows, you may want to consider an HRV or a properly sized exhaust fan in conjunction with fresh air inlets located throughout your living space.

Regardless of the type of system, it must be sized and installed to meet the needs of the home.

Ask a Builder articles promote home awareness for the Cold Climate Housing Research Center. If you have a question, contact CCHRC at info@cchrc.org or 907-457-3454.