

Overview: Attic Moisture

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Ventilation in a Canadian attic does very little to remove moisture when the temperature in the attic is below freezing. During that time, the moisture is in the form of Ice and the passing air simply won't remove it -- whether you have passive vents or power vents. When things warm up, if the collection of frost is not too heavy, it will melt and be taken away with the above freezing ventilation air. If there is too much frost or ice, it will drip down into the ceiling below before it manages to dry up.

Find the source of moisture

So if we have serious moisture build-up in an attic, we are forced to look for the source of the moisture since during the cold season, there is no practical way to get rid of it once it freezes in the attic. It surprises many people to learn that it is relatively rare that the water source is from the outside, although it could be due to bad flashing or ice damming. Much more common is that warm moist air escapes from the house below into the attic. This moisture laden air moves towards the vents but hits the freezing cold roof before getting to the vent and deposits its moisture -- finally going out the vent quite dry. When you add a power vent or a turbine to a house that has this very common problem, the suction from the power vent will draw more air through the soffits, which does no good because it is freezing cold, and will draw more moist air from the house below -- often increasing the quantity of ice in the attic rather than reducing it. Power vents and turbines do remove moisture as soon as the temperature is above freezing -- but should not be functioning while it is colder. For this reason, turbines are rarely of any real use in our cold Canadian climate, although quite useful in the southern US.

Air leaks from the house

Where does this moisture laden air get into the attic? Through light fixtures. Through plumbing chases. Through electrical holes. Through cracks in the top of partition walls. Through any hole in the ceiling. [Click here to see HOW MUCH MOISTURE DAMAGE CAN A LITTLE CRACK CAUSE?](#) Bathroom fans that do not exit outside are serious sources of moisture -- even when the duct is exhausted out through the soffits because the warm moist air rises up and comes back into the attic. Serious moisture problems have to be solved by cutting off the source of moisture -- sealing the house at the level of the ceiling. If you take a look in the attic on a freezing cold day -- you should see the frost accumulation because it will be white. If you see is generalized all over -- you have a generalized problem. If you see a cluster of it, look almost straight down and you will usually find a light fixture or some other hole to the house below. Seal off that hole so that the air cannot get into the attic, and you will cut off the moisture and not have to worry about trying to ventilate the moisture out.

Function of ventilation during the winter

In the cold of winter, the real function of attic ventilation is more to keep the roof frozen, to keep the snow on the roof from melting so it will not form ice cycles or ice dams on the lower edge of the roof. In the Spring, Summer and Fall, ventilation will help to keep an attic dry -- but not in the Winter.

Priorities

Minimum passive ventilation, well distributed in the attic, is all the ventilation a Canadian attic needs. Air sealing between the attic and the house is more critical. The best ventilation system has continuous un-obstructed soffit vents that let air in all along the bottom of the roof, and then three or so passive vents high up on the roof, or better yet a continuous ridge vent.

Keywords:

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