

Ask Jon Eakes

Heating Ducts in the Attic & Ice on the roof!

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Ray from Woodstock, Ontario writes:

For 20 years we had no ice problems on the roof. Heating was radiant heating in the ceiling. Then we installed a forced air furnace. The contractor ran all the ducts through the attic and we have had terrible ice dams ever since. The contractor refused to come back and deal with it. A consultant discovered that none of the ducting was sealed under the insulation and there were gaping holes through the ceiling where the ducts came up from the furnace.

We have sealed and insulated and reduced the problem but the ice keeps coming back. I have increased the soffit vents, added baffles, added insulation?. Recommendations are to: add heating cables to the roof (I think this is a Band-Aid); spray the ducts with urethane (for \$980). I still have to seal the joints on the supply ducts. Would appreciate your advice.

----- Response:

Oh do I hate it when Canadian contractors use the attic for duct runs -- and in addition don't even bother to seal them. Very interesting that for years your heating system was right there on the ceiling with the radiant heat and no ice problems, then open up all those holes from the house as well as directly pumping hot air into the attic.....

All I can say is that you are moving in the right direction. Spraying foam on ducts is very efficient, although expensive. It does two things: a good insulator and a very good sealer. However, you can accomplish what you need for much less money -- given that you seem to be doing a lot of the work yourself. You can buy two component foam spray packs at the large renovation centres -- it is sold for insulating recreational vehicles. Then you can spray the system yourself, concentrating on all the leaks. Short of that, just keep on taping duct joints and holes from the house. By the way, cloth duct tape does not last. You must use aluminum duct tape.

Given that you have never had ice before this installation, I would hate to put electrical cables on the roof. If you have sealed everything and put in as much insulation as you can manage and you still get ice -- there is one more trick left, but only if you have done a good job of sealing the cracks that lead into the house. That is to install an exhaust fan (at least 150 cfm) backwards (blowing cold air into the attic) at one of the gable ends of the house and have it go on anytime the temperature in the attic gets above freezing in the winter. A double thermometer is the best for this -- turning on only when it is both below freezing outdoors and above freezing in the attic. This will actually pressurize the attic and force air back out the soffits -- yes backwards -- while resisting air leakage from the house. But it assures a cold climate in the attic to keep the snow pack frozen, despite the heat losses from the furnace ducting. Using a fan to exhaust from the attic will simply draw more heat from the ducts and the house and potentially increase your problems.

When will contractors learn that a hole in the ceiling of the house from the basement can cause ice on the roof -- and the attic is no place for heating ducts in a cold climate.

Keywords:

Duct, Environmental, Heat Loss, Heating, Ice, Ice Dams, Seals

