

Newsletter, February 2015

Damned Ice

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Roofers' phones in the Northeast have been ringing off the hook as desperate homeowners call for help with ice-dam leaks. People have also been calling my office, because they are worried about mold growth as a consequence of the ice damming.

Ice dams are caused by heat loss from the house into the attic, and then melting of snow and freezing of the melt water at the cold roof edge. The warmer your attic, the greater the volume of water from the melting.

Some roofers and homeowners have been using ice-melt compounds (salt and calcium chloride) to create vertical channels in the ice (perpendicular to the gutter) and facilitate drainage of the dammed water. But if the salt is also placed along the upper edge of the dam (just where the snow stops and the ice begins), it will dissolve in the water running down the roof shingles and will flow under the ice, increasing the likelihood of melting the ice dam. If you do hire someone to remove the ice, the safest and most effective (and costly) way to do so is with high-pressure steam, about 60 psi; the steam cuts through ice like a blow torch. Do not allow anyone to use a high-pressure washer (with just hot water over 1,000 psi) as this can damage the shingles.

Here are some tips to reduce the damage and dry out the affected areas while you are waiting for someone to help reduce the ice dam:

Collect the water in whatever vessels you can to prevent the spread of the liquid; wipe dry surfaces as quickly as possible.

Check the attic to see if you can stop any of the water leaking in from the roof with some type of a pan. If you have two hot-air furnaces (one in the basement and one in the attic), shut the attic furnace down (shut the water supply to the furnace humidifier if you have one!); seal all the vents (including the return) with foil and removable painter's tape (or close the dampers if present); and only use the basement furnace. The idea is to reduce the heat loss to the attic from the attic furnace.

If you have an attic A/C unit, seal off all the vents and returns to prevent hot-air flow into the system, as most systems are leaky in the attic, and warm air flows into the vents and ducts and ends up leaking into the attic.

Make sure that any attic access is airtight.

If you have an attic fan (not a whole house fan!) to reduce summer heat, have an electrician install a bypass switch so that you can manually operate the exhaust fan in winter; assuming there are soffit and ridge vents, or gable-end vents, air flow from the outside should cool the attic and reduce the melting rate. Again, make sure that there are no means for air to enter the attic from the house when the attic pressure is reduced by the fan. (Hang a thermometer in the attic and monitor the attic air temperature; it should decrease when you operate the attic fan, not increase; if it increases, then you will be increasing the rate of melting.)

So long as you dry interior ceilings, floors and walls fast enough, mold should not grow on the surfaces.

To hasten the drying, use fans and portable heaters (such as oil-filled radiators) to warm the rooms with ceiling and/or wall water. (If you have mold allergy, don't use fans in a moldy basement as this will disturb the spores.) Very wet, insulated walls may have to be opened up soon after the ice dam. If a ceiling is leaking a great deal of water, it may make sense to create a hole and place a bucket beneath to collect the water; this should reduce the spread of the water.

Mold may grow in wall cavities if they stay wet long enough. Insulated walls will take much longer to dry out and are more likely to get moldy than uninsulated walls in homes built before the 1960's. If a musty odor develops from inside a wall cavity, there is mold growth and you may need to have the walls opened up to remediate the space. Opening up large areas of wall and ceiling cavities should be done by professionals working under containment, in order to prevent the spread of potentially allergenic dust. If you've dried interior surfaces fast enough, you should be able to avoid mold growth. If accessible from an attic, wet insulation should be removed from a ceiling and allowed to dry.

If you can already see mold growth on an interior surface, do not operate a fan. The good news, however, is that generally speaking, mold growth within a wall or ceiling cavity, and even a musty odor emanating from such growth, do not necessarily mean that you will be exposed to mold spores. Mold odors are molecules and can diffuse through wall plaster but mold spores are particles and can only enter a room with air flows through wall openings such as electrical boxes, plaster cracks and gaps around windows. Mold odors, unpleasant as they are, do not generally cause allergy problems whereas spores can and do for those who are sensitized.

Jeff May, May Indoor Air Investigations, LLC, is the author of *The Mold Survival Guide* and *My House is Killing Me!*, both published by the Johns Hopkins University Press.