# **Loss Prevention** Safety Tips

Red River Mutual
LOSS PREVENTION PROGRAM

## ICE DAM PREVENTION

Icicles, anchored in thick slabs of ice on a home's eaves, are nature's deceptively beautiful winter decoration. Homeowners even mimic the look with icicle lights during the holidays. Sadly, that glittery allure comes with a potentially steep price: water damage.

**How Ice Dams Form**

Most homeowners don't expect snow on the roof to melt in sub-freezing temperatures, but that is exactly when ice dams form. If some portion of the roof is above 0°C the snow cover there will melt and run down until it hits a spot, usually just above the eaves, where the temperature is below 0°C, where it will freeze. Over time, more and more ice builds up, extending from the eaves up to the point where the roof temperature reaches 0°C. When it becomes thick enough, the ice forms a dam, behind which any additional snowmelt collects.

Because the roof temperature is above 0°C behind the dam, the water remains a liquid and can eventually back up under the shingles. Initially the damage may be minor, resulting only in wet insulation. However, wet insulation does not work well, so this can set off a vicious cycle whereby the wet insulation allows more heat to escape, which allows more snow to melt and the problem keeps escalating until the damage extends into the wall cavities, resulting in mold, mildew and rotting.

**Causes of Warm Roofs**

In order to fix the problem, you need to know why your roof is warm. Possible culprits include:

- Air leakage through the ceiling - Spots where things like light fixtures, electrical wiring, plumbing and exhaust fans extend through the ceiling can allow warm air to escape from the house into the attic area.
- Bathroom and kitchen exhaust systems - They may blow warm air onto the roof.
- Chimneys
- Solar heat gain - This is possible in especially sunny spots, but is not common.

**Preventing Ice Dams**

Removing snow with a snow rake after each snowfall eliminates the main ingredient in ice dam formation, but the rake may damage the roof.

A better solution is to keep the roof cold so the snow will not melt. The best ways to accomplish this include:

- Increasing roof insulation.
- Ensuring insulation extends all the way to the eaves.
- Sealing any potential spots for air leakage through the ceiling.
- Add roof and soffit vents. Attic ventilation draws in cold outdoor air and flushes out warmer attic air, cooling the attic and the roof in the process

When all else fails, you can install heat cables. Heat cables are high-resistance wires that you mount on the roof edge in a zigzag pattern and plug into an outdoor GFCI receptacle. They're ideal in spots where ice dams regularly occur and can't be stopped any other way. One problem: You have to route the melt water away. Otherwise it will refreeze in the

gutters and along the roof edge.  You'll have to run the heat cable inside a downspout so the downspout doesn't clog with ice.

**Prevent Damage After Ice Dam Formation**

If you already have an ice dam, the goal is to prevent any further backup of water.  Do this by creating one or more channels through the dam.  Three solutions include:

- On a warm day, hose it down with tap water, starting from the lower edge and working toward the back of the dam.
- Fill the legs of old pantyhose with ice melt pellets and lay them over the dam, extending past the eaves.

These fixes are temporary and will need repeating throughout the winter season.  The best long-term solution is to fix the causes of roof heating.

## See more loss prevention tips at www.preventingloss.com