

Heavy Snows and Roofs

Following a winter storm, many homeowners become concerned about the weight of heavy snowfall on their home's roof. The questions asked are: "Is my roof going to hold all that snow, or will it collapse?" and "How can I prevent a roof collapse?"

Answers:

Most homes today are constructed and designed to bear the weight of snow. The roof system is designed to transfer or spread a portion of the weight from the trusses or rafters to the wall-framing members and down to the foundation and footers. Keep in mind; this relies on proper construction procedures and designs. Older homes may have a greater rafter span (reducing the load they can carry), and if the roofing system has not been well maintained, may invite potential problems associated with excessive snow and its eventual melt. Damage will most likely exist at the roof support system in older homes that have not been maintained or properly vented. This damage occurs over time and will likely weaken the support system and eventually lead to failure.

With that being said, most "sloped" roof designs will naturally transfer and shed the weight of snow. The roof designs to be most concerned about are flat or "built-up" roof systems that have not been maintained or designed properly. Flat roofs are typically associated with and most prone to failure and collapse. Some signs that you may have a problem are evidence of active leaks, cracked or split framing members, and sagging of the structure beneath. Be watchful for signs of leaking and water intrusion. Leaks won't always show up in the obvious areas. The source of a leak is often difficult to discover as water has a tendency to "travel" to different areas before showing evidence of a problem.

Roof collapse may be inevitable with a roof lacking proper maintenance or load design. If you are concerned with an impending collapse, I recommend you contact a qualified roofing contractor or professional engineer to evaluate your roofing system. They can recommend any repairs or preventative methods that may be needed.

A more prominent problem to be concerned with during the winter months is "ice damming". A sign that you have an ice dam problem is icicles hanging along the eaves of a roof. Icicles form when snow accumulates on the roof, melts and then refreezes at the roof's edge. This ice build-up is called "ice damming." This build-up prevents melting snow and ice from draining into gutters and off your roof. The blocked water can work under the roofing and into your home creating a variety of serious problems. Some problems you can see, others you cannot. A few issues associated with ice damming are sagging gutters, stained or sagging ceilings, and loose roof shingles. These are the easiest to fix. More serious problems involve damage that you can't see. This includes damaged or water logged insulation (reducing R-value and increasing heating costs), promotion of mold and mildew growth, and major structural damage.

A variety of methods to prevent ice damming exist. One option is the installation of heat tape, a thin electrified tape that heats up and melts the ice dam. This is only a "band aid" to the actual problem of proper attic ventilation and heat buildup in the attic. These issues should be addressed to properly correct and prevent the problem of ice damming. If your home has a steep sloped roof, and is over twenty years old, a 98% probability exists that your attic has excessive heat, leading to ice damming. Even newly constructed homes may have serious attic heat problems!

Removing snow can help prevent roof collapse and ice damming. It is recommended that a professional contractor be hired to perform this task. Great safety hazards exist with snow-covered roofs. Snow and ice covered roofs become extremely slippery and create a great potential for falls, the leading cause of home injuries.