Harleysville
Good people to know®

Risk Control on Target

Preventing Roof Collapse

Each edition of "Risk Control On Target" is published to specific policyholders to help them avoid losses and reduce risks common to their particular business and property. You can receive free copies of this publication by contacting Harleysville's Risk Control Department by phone at 800.523.6344 ext. 8100 or by e-mail at:
riskcontrol@harleysvillegroup.com

Avoiding losses contributes to the growth and success of your business. Harleysville's Risk Control Department is available to provide training, consultation, information, programs, and services to help meet your risk management needs.

We're good people to know!

Snow, ice and rain can add tremendous weight to roofs causing them to collapse. The impact on a business can be long lasting and traumatic. Extended shutdowns can lead to a loss of customers and additional expenses. Roof collapses can also cause serious injuries and loss of life.

Flat roofs are particularly vulnerable to either a full or partial collapse and water damage. Metal roofing systems, steel decks, and boards on joists are most susceptible and have little ability to withstand and recover from large live loads of snow or rainfall. This is due to the result of their lighter construction or dead load capacity. Closely associated with rain-on-snow loads are ponding loads. The primary cause of rain or wet snow overloading is water ponding in the roof's depressions. Melted snow can "pond" (accumulate) in low areas where adequate slopes to drains are not present or where drains are blocked by ice or other objects.

Warning Signs to check for:

- Broken, cracked, splintered wood joists, rafters, decking (visible from inside).
- Loud noises, popping and creaking.
- Sagging, bent, deformed metal roof components (visible from inside).
- Bent or bowed conduit, utility or sprinkler piping at ceiling or roof height.
- Doors or windows that are difficult to open.
- Walls that have new cracks or appear to be bent outward.

Actions you can take to help prevent serious damage to your property and business:

- **Preplan** with a fully insured and experienced contractor to remove dangerous accumulations and to complete other preventative measures. Have the contractor check for water ponding when inspecting the roof and expedite all repairs prior to the onset of cold or inclement weather. Make sure you have a hold harmless agreement and are an additional insured on the contractor's insurance policy.
- Pay close attention to weather reports and television or radio public warnings.
- Know the maximum snow depth that your building can safely handle. Structural engineers can help you determine the acceptable depth by calculating the roof's live load capacity. Have snow removed when this depth is exceeded.
- If a large snowfall is predicted, have accumulated snow and ice removed prior to the storm. Be sure snow is removed in even layers so that the weight on the roof is balanced. Pay special attention to areas where drifts have formed.
- Improper snow removal can create damage. Typically, it is not necessary to remove snow and ice down to the roof cover.
- Roof drains and downspouts must be clear and flowing smoothly. Positioning downspouts above grade will help.
- A worksheet to help guide you in evaluating your property's risk of roof collapse is located on the reverse of this notice.

Checklist to Aid in Evaluating Potential Risk of Roof Collapse

The following conditions can weaken your roof. If you circle **YES** to any of the items below, your roof may be particularly susceptible to collapse when loaded with ice and snow.

Does a visual examination of the roof's structural members indicate any leaks? Is there any sign of sagging or misalignment? Are there any corroded, cracked, and/or buckled steel members, split and/or rotted timber members, or cracked and/or spalled (surface flaking) concrete members? Is there any sign of efflorescence (white powdery appearance) on concrete members and slabs? Do all connections appear sound? Qualified professional engineers should be retained to examine any problems noted.

Yes No

Have any roofs been retrofitted with additional insulation in an effort to conserve energy?

Yes No

Is it possible that the building will be unheated for long periods?

Yes No

Have solar panels, mechanical equipment, air conditioners, heaters, suspended storage platforms or other roof projections been added to the building?

Yes No

Have lower roofs, canopies, or covered walkways been added to the structure?

Yes No

Do roofs that slope toward internal drains have slopes of at least 1/4 inch per ft (6.35 mm per meter)? If not, these roofs must be routinely checked for ponding. Low areas should be repaired and/or additional drains added.

Yes No

Are all drains, gutters, and downspouts free from debris? If not, they should be cleared and kept free flowing.

Yes No

Has a taller building been built, or is there one planned to be built within 20 ft (6.1 m) of the existing building? If so, can the existing building's roof sustain potential snow drifts caused by the taller building?

Yes No

