

STATE OF NEW
HAMPSHIRE

DIVISION OF PUBLIC
HEALTH SERVICES
DEPARTMENT OF
HEALTH AND HUMAN
SERVICES

OCCUPATIONAL HEALTH
SURVEILLANCE
PROGRAM

Preventing Falls during Snow Removal

- Using snow removal methods that do not involve workers going on roofs, like using ladders to apply de-icing materials or snow rakes or drag lines from the ground.
- Evaluating loads exerted on roof or structure (e.g. total weight of snow, workers, and equipment used), compared to the load limit of the roofs.
- Requiring that workers use fall protection equipment.
- Ensuring that workers use ladders and aerial lifts safely.

Hazard Alert

Removing Snow from Rooftops is Dangerous!

Falls and Other Hazards to Workers Removing Snow from Rooftops and Other Elevated Surfaces

With over 100 inches of snow falling in parts of New Hampshire this winter, companies have been racing to clear snow from roads and roofs, and in the process, requiring their workers to complete extremely dangerous tasks with serious results.

Every year, workers are killed or seriously injured while performing snow or ice removal from rooftops and other building structures, such as decks. OSHA has investigated 16 such serious injuries or fatalities in the past 10 years. In Massachusetts this winter alone, two workers were killed, and two more hospitalized in separate incidents from falls while clearing snow from roofs. (MassCOSH)

These incidents could have been prevented.

Workers performing snow removal operations are exposed to many serious hazards. Based on the findings of OSHA investigations, falls cause the most worker fatalities and injuries during rooftop snow removal. Workers may fall off roof edges, through skylights, and from ladders and aerial lifts. Workers may also be injured or killed by a roof collapse. Other hazards include injuries associated with use of mechanized equipment, entrapment and suffocation under falling snow, shock/electrocution hazards from contacting power lines, frostbite or hypothermia and musculoskeletal injuries from over exertion.

Workers who perform these activities (for example, building maintenance workers, or landscaping contractors) may have little experience or training on the hazards of such operations at work.

OSHA requires that employers plan ahead and use the proper protective measures to protect workers engaging in snow removal activities. This includes snow removal by workers from commercial and residential buildings, flat roofs and pitched roofs.





Resources

OSHA Hazard Alert

<https://www.osha.gov/Publications/OSHA-3513roof-snow-hazard.pdf>

Personal Fall Arrest System, OSHA Construction e-tool

<https://www.osha.gov/SLTC/etools/construction/falls/fallarrest.html>

American Society of Civil Engineers (ASCE) 7, Minimum Design Loads for Buildings and Other Structures

<http://www.asce.org/templates/publications-book-detail.aspx?id=6725>

Occupational Safety and Health Administration (OSHA) New Hampshire Office

603-225-1629

Occupational Health Surveillance Program

New Hampshire Department of Health and Human Services

603 271-8425

karmenti@dhhs.state.nh.us

Use Required Fall Protection

OSHA standards require employers to evaluate hazards and protect workers from falls when working at heights of 4 feet or more above a lower level (1910.23) or 6 feet or more for construction work (1926.501).

- Train workers on fall hazards and the proper use of fall protection equipment.
- Provide and ensure that workers use fall protection equipment if they are removing snow in areas that are not adequately guarded (e.g., with a guardrail system or cover).
- Instruct workers who wear personal fall protection equipment to put on their harnesses and buckle them snugly before mounting the roof.
- Have a plan for rescuing a fallen worker caught by a fall protection system.
- Remove or clearly mark rooftop or landscaping features that could become trip hazards.

Evaluate Load Bearing on the Roof or Structure

Snow load is the weight of the snow (generally reported in pounds per square foot). The weight of the snow will vary depending on its water content. Snow load on the ground can provide a rough indication of roof snow load, but roof snow loads also depend upon factors such as melting and re-freezing of snow and ice, drifting, roof slope, type of roof, and design features.

The amount of weight that a roof can safely support is based on local building code requirements and should be available within the design specifications for your building. If the structure or roof has structural deterioration, the roof might support less weight than would otherwise be expected.

Before workers access a roof or other elevated structure, the employer should confirm that the workers' weight and any equipment used can be supported by the roof or structure without causing a collapse. Workers should always use caution by remaining alert to unexpected sounds or movement around surfaces that have been weighed down by snow (or water from melted snow), because these surfaces could collapse.

Shoveling or raking a roof without using the proper procedures can also increase the risk of roof collapse by creating an unbalanced load on the roof.

To prevent unbalanced loading during snow removal, workers should:

- Remove snow uniformly across the roof.
- Avoid making snow piles on the roof.

Plan Ahead for Safe Snow Removal from Roofs Use Ladders and Aerial Lifts Safely

<http://www.dhhs.state.nh.us/dphs/hsdm/ohs/>