

TerranearPMC Safety Share

Week of January 21, 2013 - Removing Snow from Rooftops and Other Elevated Surfaces (part of the 100 Days of Winter Safety Campaign)

Every year, workers are killed or seriously injured while performing snow or ice removal from rooftops and other building structures. OSHA has investigated many of these cases over the past 10 years, and in each case it was determined that the ensuing tragedy could have been prevented. In all cases, a worker was performing some activity on an elevated surface that was covered in snow or ice and was not wearing any type of fall protection. Either the snow concealed an unguarded opening causing the worker (who could not identify the hazard) to fall through the opening or the icy conditions created slippery surfaces resulting in a worker sliding off the elevated surface.

Snow removal is performed for a number of reasons, such as to prevent overloading and collapse, or for construction or repair of decking or roofs. Often workers climb directly onto the roofs or structures and use equipment such as shovels, snow rakes, snow blowers, ladders, etc. Other times these operations may be performed from the ground level using snow rakes. Aerial lifts are sometimes used to access roofs and apply de-icing materials. Snow removal operations are often performed under extreme weather conditions (e.g., cold, high winds, icy surfaces). Workers who perform these activities (for example, building maintenance workers) may have little experience or training on the hazards of such operations or work.

Besides the most obvious hazard of falling, there are other significant hazards associated with working on elevated surfaces during winter conditions. These include:

- Amputations, eye injuries, and other injuries associated with the use of snowblowers and other mechanized equipment.
- Collapses or tip-overs when using aerial lifts.
- Entrapment and suffocation under falling snow drifts or snow piles.
- Shock/electrocution hazards from contacting power lines or damaged extension cords.
- Frostbite or hypothermia from cold and windy conditions.
- Musculoskeletal injuries from overexertion.

These types of incidents can be avoided if only those involved were to take the time to recognize their precursor hazards, followed by taking the appropriate actions to have them controlled. Here are just a few things to consider:

- Remove or clearly mark rooftop or landscaping features that could become trip hazards
- Using snow removal methods that do not involve workers going on roofs, when and where possible.
- 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.

Whenever possible, use methods to clear ice and snow without workers going on the roof. For example, use ladders to apply de-icing materials and use snow rakes or drag lines from the ground.

Shoveling or raking a roof can also increase the risk of roof collapse by creating an unbalanced load on the roof. To prevent unbalanced loading during snow removal, it is important to remove snow uniformly across the roof and to avoid making snow piles on the roof.

Information compiled by the Bureau of Labor and Statistics indicate that falls that result in deaths and severe injuries occur during snow removal operations. Such incidents are the reason that OSHA requires all hazards to be evaluated. For fall hazards, OSHA has specific requirements to protect workers. For instances, under its general industry regulations, OSHA requires "every wall opening from which there is a drop of more than four feet shall be guarded" while the construction standard requires worker protection from when working at heights of six feet or more.

Workers may use ladders to access rooftops for snow removal. Workers should not use a snow rake or shovel while on a ladder because this greatly increases the risk of losing one's balance and falling. Always use the three-points-of-contact rule when using a ladder (this means three of the four appendages need to be in contact with the ladder while ascending or descending, such as using two hands and one foot). Equipment should be hoisted to the elevated surfaces. Of course using the buddy system is a must for work on elevated surfaces. Not only does this help prevent injuries (as buddies watch out for each other and assist each other to perform job tasks), but a buddy can call for help during emergencies or other assistance is needed.

To prevent falls from ladders used for accessing roofs, workers need to assess their work environment so they know the route and method they should use to get up and down from a roof in a way that minimizes the risk of falling. The safest location for the ladder might not be the most obvious one, or an alternate method (e.g., an access door or lift) might be available to get on the roof. Safe roof access is as important as having effective fall protection while on the roof.

And while falling is a main hazard while working on elevated surfaces during winter conditions, there is still the physiological hazard of exposure to cold. Cold exposure can cause frostbite (freezing in the deep layers of skin and tissue) and hypothermia (drop of body temperature to less than 95°F).

Physical exertion during snow removal can also cause injuries and illnesses. Snow removal can be strenuous, particularly because cold weather can be taxing on the body, and can create the potential for exhaustion, dehydration, back injuries, or heart attacks, and can increase the risk of falls. To minimize overexertion and help prevent injuries:

- Scoop or push small amounts of snow at a time. Use a smaller shovel or take smaller scoops of snow if snow is wet and heavy.
- Use proper form if lifting is necessary; keep the back straight and lift with the legs.
- Do not overload the snowblower; let it operate at a modest speed.
- Take frequent breaks and drink fluids (avoid caffeine or alcohol).

In addition to establishing safe work practices to prevent an accidental fall, it is just as important to have a plan for rescuing a fallen worker (when caught by a fall protection system). Fall protection systems are designed to prevent serious injury due to an impact of a person landing on the ground or a lower deck; however, being suspended from a failed scaffold or personal fall arrest system (body harness) should only last a short time; otherwise the individual can suffer serious injuries, including death.

O, wind, if winter comes, can spring be far behind?

Percy Bysshe Shelley