SNOW REMOVAL FROM ROOFTOPS

This memo provides regulatory information and guidance on the hazards associated with snow removal from rooftops.

While the removal of snow from rooftops might be necessary, it is important to recognize that this removal work must be performed in a safe manner and in compliance with all federal requirements for fall protection and other safety regulations. In our collective efforts to eliminate the snow from rooftops, we cannot lose sight of the safety of the personnel being asked to perform these operations. Please share this guidance and information with others in your school/department who may not receive this direct communication.

KEY THINGS TO KNOW:

- Under the OSHA’s General Duty Clause, employers have a duty to protect workers from recognized serious hazards in the workplace, including hazards associated with snow removal from roofs. **Please note that this clause would also apply to contractors hired by Facility/Building Managers.**

- **If it is determined that the snow on your roof poses a real risk and must be removed, snow removal should ONLY be performed by QUALIFIED INDIVIDUALS.** The qualified individual(s) must follow necessary protocols for safe snow removal to minimize risk of personal injury and lower the potential for damaging the roof covering during the snow removal process. If workers access roofs and other elevated surfaces to clear snow, they must be protected from fall hazards from the roof. The proper use of fall protection equipment, as **REQUIRED** by OSHA must be followed – this is Federal law and it is not optional!

- Harvard’s FMO workers have been instructed not to access unprotected roof tops without a hazard assessment and fall protection. Roof tops with a passive fall protection system (i.e. guard rails and or OSHA compliant parapets) are likely to be the only roof tops that can be safely accessed.

Workers performing snow removal operations from rooftops are potentially 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. Other risks include electrocutions, struck by hazards or exposures to extreme weather conditions.
The following recommendations are based on OSHA and FEMA guidance documents. If you have any questions or need additional assistance – please contact your Designated Safety Officer.

**EVALUATE ROOF STRUCTURAL INTEGRITY**

- To determine whether snow removal is necessary, it is recommended that you enlist a qualified design professional or structural engineer, who will be familiar with the snow conditions of the region and the design capacities of local buildings per the building code. If you need assistance finding a structural engineer – please call for assistance.

**SAFETY MEASURES FOR SNOW REMOVAL**

Below are some safety measures to take during snow removal to minimize risk of personal injury, property damage, etc.

- Prior to any snow removal activities an evaluation of hazards must be performed to: 1) identify fall hazards and protection systems; 2) identify skylights and other potential step thru hazards. Based on this evaluation – a plan should be established to perform the snow removal safely.
- Any roof snow removal should be conducted following proper OSHA protocol for work on rooftops. Personal fall arrest systems (harnesses, connecting devices, and adequate anchor points) must be used when guardrails or parapets of adequate height are not present. **Buried skylights pose a high risk to workers on a roof removing snow.** Properly mark this hazard as well as other rooftop hazards.
- Always have someone below the roof to keep foot traffic away from locations where falling snow or ice could cause injuries.
- Ensure someone confirms that the area below removal site is free of equipment that could be damaged by falling snow or ice.
- Whenever snow is being removed from a roof, be careful of dislodged icicles. An icicle falling from a short height can still cause damage or injury.
- When using a non-metallic snow rake, be aware that roof snow can slide at any moment. Keep a safe distance away from the eave to remain outside of the sliding range.
- Removing snow completely from a roof surface can result in serious damage to the roof covering and possibly lead to leaks and additional damage. At least a couple of inches of snow should be left on the roof.
- Do not use mechanical snow removal equipment. The risk of damaging the roof membrane or other rooftop items outweighs the advantage of speed. Do not use sharp tools, such as picks, to remove snow. Use plastic rather than metal shovels. In some cases a long-handled non-metallic snow rake can be used from the ground, thereby reducing the risk. Metal snow rakes can damage roofing material and pose an electrocution risk and should be avoided.
Seasonal Communication

- Remove drifted snow first at building elevation changes, parapets, and around equipment.
- Once drifted snow has been removed, start remaining snow removal from the center portion of the roof. Remove snow in the direction of primary structural members. This will prevent unbalanced snow loading.
- Do not stockpile snow on the roof.
- Dispose of removed snow in designated areas on the ground.
- Keep snow away from building exits, fire escapes, drain downspouts, ventilation openings, and equipment.
- If possible, remove snow starting at the ridge and moving toward the eave for gable and sloped roofs.
- Upon completion of snow removal, the roofing material should be inspected for any signs of damage. Additionally, a quick inspection of the structural system may be prudent after particularly large snow events.

ENSURE YOUR CONTRACTORS DO THE FOLLOWING:
- Evaluated the fall protection requirements and hazards of the area of roof to be worked on.
- Ensure their personnel wear eye and head protection, especially when removing ice.
- Provide and ensure that workers are trained and use fall protection equipment if they are removing snow in areas that are not adequately guarded (e.g. with a guardrail system or OSHA conforming parapet wall) as required.
- Instruct their 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.

PROTECT PEOPLE ON THE GROUND DURING SNOW REMOVAL
- Workers standing on the ground removing snow from the roof and bystanders can become trapped under snow falling from roofs and could suffocate.
- Mark a safe work zone in the area where snow is to be removed (e.g., keep people back 10 feet from the point where snow is expected to be blown or fall).
- When using snow rakes, remove small amounts of snow at a time.

REFERENCES:
FEMA Snow Load Safety Guidance - FEMA P-957