

Be careful about removing snow from the roof and dropping snow cover!



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Every year in the Niseko area, occupational accidents occur due to snow removal from roofs.

Many of these occupational accidents in snow removal were caused by the lack of crash prevention measures, however, some of them were caused by falling snow despite careful preparation. This indicates that general snow removal manuals are not applicable in heavy snowfall areas. For this reason, precautions for work such as removing snow from roofs, including heavy snowfall areas, are listed below.

1. Types of Disasters in Snow Removal and Other Operations.

From the past fatalities in snow removal and other disasters, we know that there are 3 types of disaster patterns.

- (1) The leg of a ladder on the roof slipped and fell while climbing up and down.
- (2) Falling on the roof due to stepping through the snow cover while removing it from the eaves, or sudden fall of snow from above.
- (3) Falling with snow while removing snow.

Snowfall here means that the snow accumulated on the roof starts to move all at once.

2 Measures to prevent work-related accidents during snow removal and other operations.

(1) Use of ladder to get to the roof

If there is a fixed ladder attached to the building, it should be used in principle.

If there is no fixed ladder attached to the building and in case of using mobile ladders, it is important to take measures to prevent the ladder from collapsing due to slippage of the legs.

- If the road surface is frozen, use a shovel to remove the ice and bring out the ground.
- If there is a lot of snow, bury the legs down to the compacted snow layer and make sure they do not move.

On sloped roofs, moving ladders tend to be installed on the low side of the roof, but given the danger of falling snow, it is preferable to install them on the high side or side of the roof.

(2) Removing snow from the roof of a house

When using a shovel to remove overhanging snow from the ground, make sure that you are not directly under the covering snow.

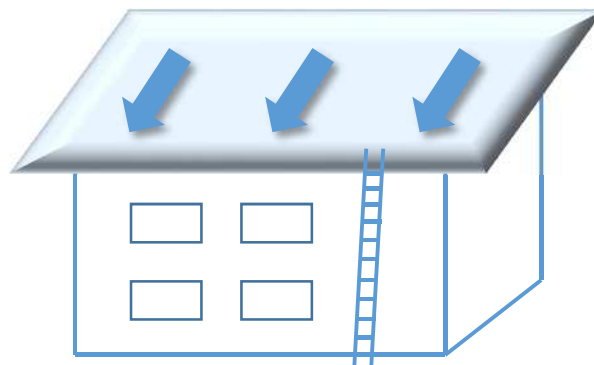
When dropping snow cover from the roof, it is essential to check the shape of the roof from the ground and to use a lifeline in case of stepping through or sudden snow fall.

(3) Snow Removal

Most occupational accidents in snow removal are caused by a sudden fall of snow and the faller falls with the snow. Needless to mention the importance of usage lifelines, it is necessary to evaluate in advance whether the attachment points of them can be effective even in the event of a snow fall. In particular, if parent ropes are used, their placement must be suitable for the shape of the roof. (See below)

The “parent rope” is the rope that connects the lifeline on the body side to the body side.

Fig.1 On a sloped roof, the accumulated snow is always trying to fall, and the slightest vibration can cause it to fall all at once.



(4) How to prevent crashes from roofs

When there is a chimney or other structure on the roof.

It should be used as a facility to attach a lifeline or a parental rope.

When there is no structure on the roof.

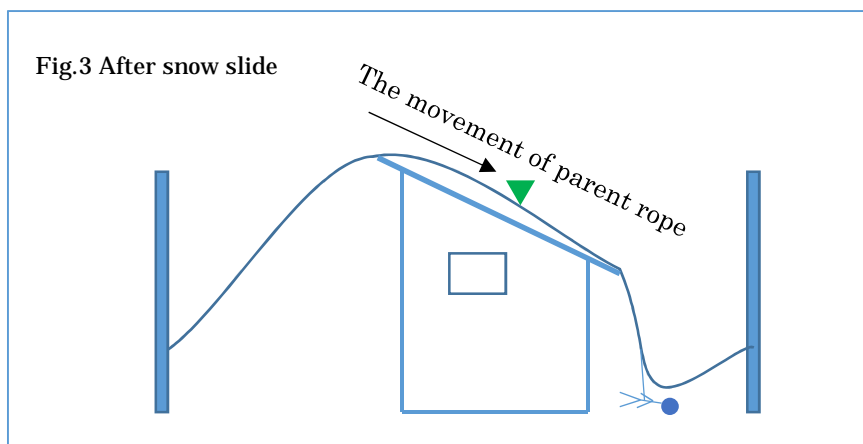
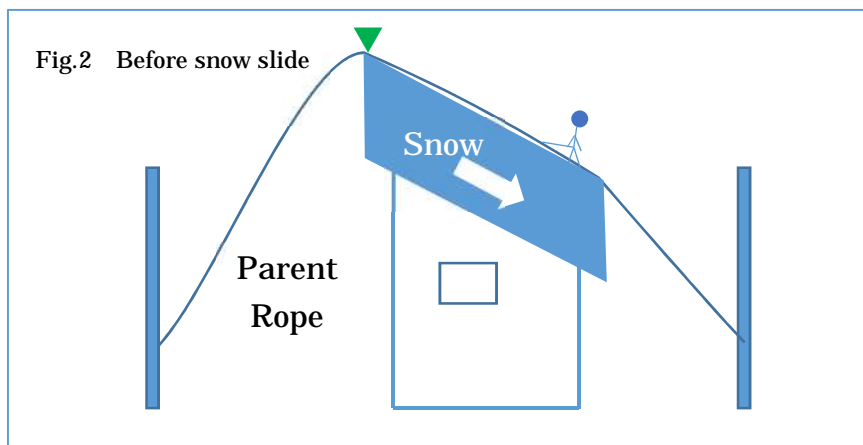
In general, it is recommended to fasten a rope to a structure on the ground, hang it over the roof, fasten it to a structure on the other side of the building, and connect the lifeline to this rope. (Fig.2)

However, if the snow accumulation is high (generally 1 meter or more) the rope will be displaced greatly when snow falls, and lose its effectiveness (Fig.3) In this case, it becomes extremely difficult to ensure the safety of the work. Therefore, it is necessary to make systematic preparations, such as clearing snow before the snow accumulation becomes too high, or, installing equipment to attach a lifeline before the winter season starts.

【Case 1】

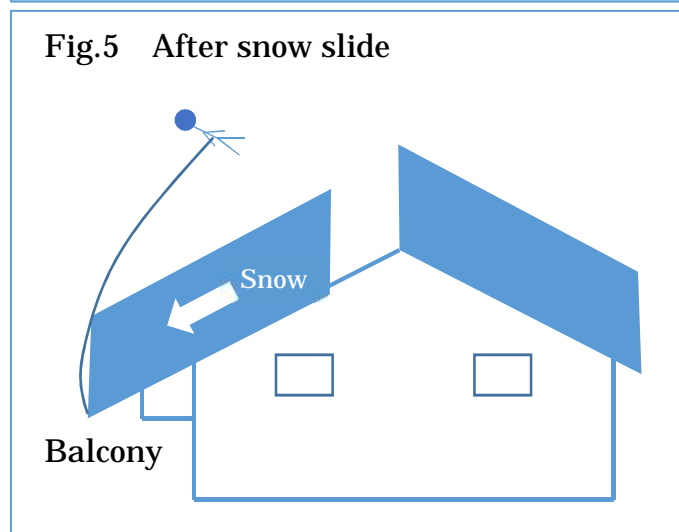
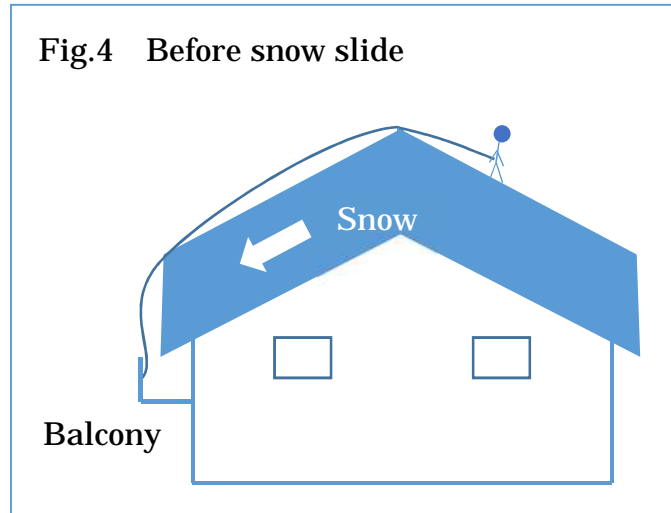
The parent rope is displaced by falling snow and the snow removal person who was connected to the lifeline falls down.

(Parent rope nullification phenomenon)



Equipment for attaching lifelines must be independent of falling snow.

【Case 2】 A snow slide occurs and the lifeline is pulled and thrown.



Ropes need to be fastened on both sides of the building.

(6) Tools for fall prevention

Falling stop apparatus

According to the industrial Safety and Health Law, when it is difficult to install handrails or other devices at the edge of work floors such as roofs that are 2m or more in height, it is necessary to use “Fall arrest equipment”. There are different types of “Fall arrest Equipment” depending on the height.

Over 6.75m Full-Harness type

Under 6.75m Full-Harness type or body belt type.

Protective Cap

Wear a protective hat or helmet to protect your head from the impact of a crash or falling snow.