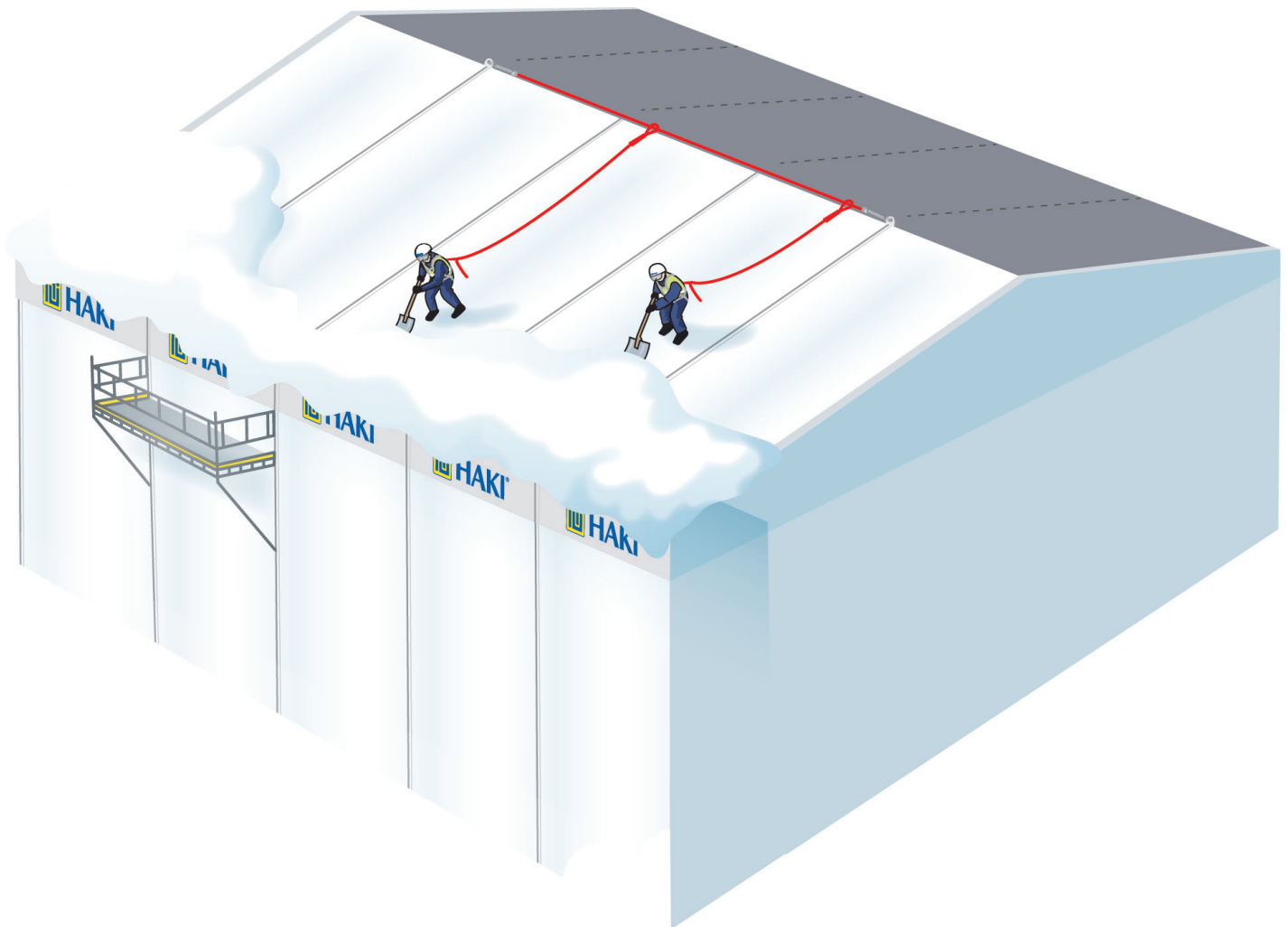


# HAKITEC Temporary Roofs

Information on roof access, fall protection, snow load and snow clearing



## Access arrangements for temporary roofs

Access to a temporary roof may be achieved via erection scaffolding, special access stairways or special access brackets.

**PLEASE NOTE:** You must be able to anchor yourself at the point of ascent and then be anchored during your entire stay on the roof. You can do this by having an extra rope that is used while you are moving from the point of ascent to the attachment eyes or wire on the ridge of the roof.

## HAKI fall protection anchor

Personal fall protection equipment can be anchored to HAKI fall protection anchors or to wire fitted to the ridge between HAKI fall protection anchors.

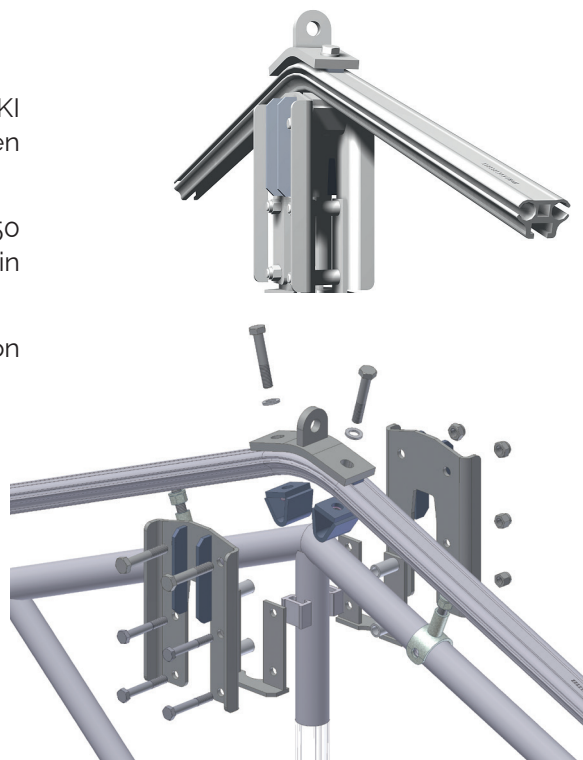
The HAKI fall protection anchor is designed for HAKITEC 750 temporary roofs and is fitted to HAKI 750 AL angle frames in connection with the erection of the temporary roof.

The greatest recommended distance between fall protection anchors is 15 m.

See special HAKI product sheet for further information.

The wire should be of the horizontal fall protection system type.

For permissible loading and spans, please see the manual for the fall protection system in question.



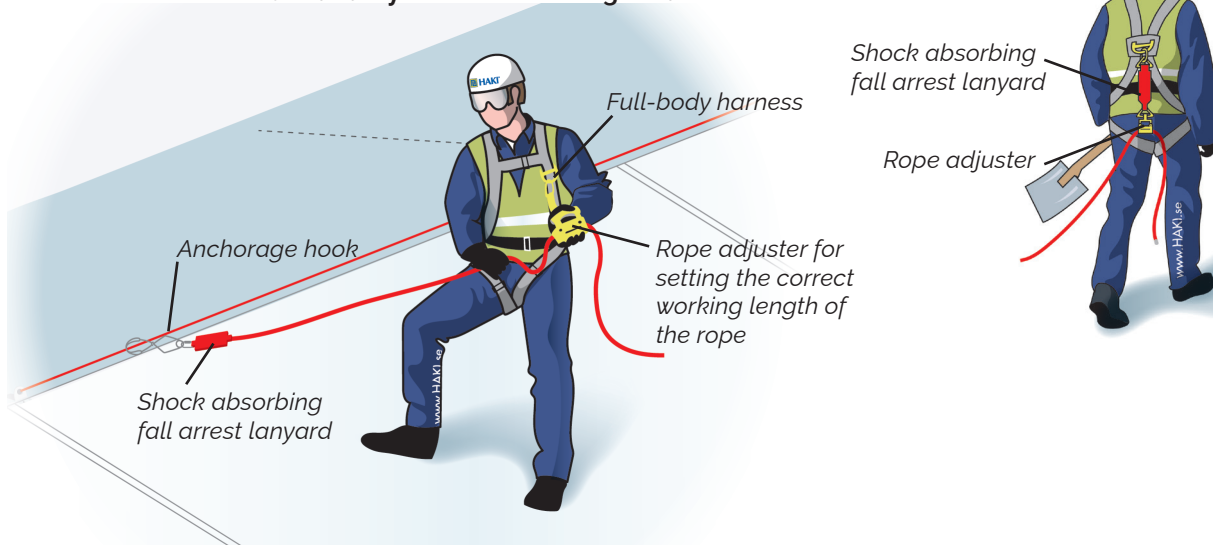
## Personal fall protection equipment

Working on a temporary roof is associated with a risk of falling. Everyone on a temporary roof must, therefore, use personal fall protection equipment, which means a full-body harness, lifeline, shock absorbing fall arrest lanyard, and rope adjuster or retractable block.

Several designs of full-body harness are available. Harnesses that are suitable for roof work have steel rings on the chest and high up on the back for alternative attachments of the lifeline.

There are also harnesses where attachment can be made at the side and where this point of attachment then rides up to a position on the back in connection with any fall. Full-body harnesses can also be sewn into an article of clothing.

**PLEASE NOTE: Do not use a safety belt when working on a roof.**



The lifeline must be provided with a fall arrester, for example a shock absorbing fall arrest lanyard or retractable block.

The shock absorbing fall arrest lanyard absorbs the shock resulting from a fall. The retractable block allows normal movement, but locks if there is a jerk on the line as the result of, for example, a fall.

**PLEASE NOTE: It is important to attend a training course in the use of personal fall protection equipment before using it in practice.**

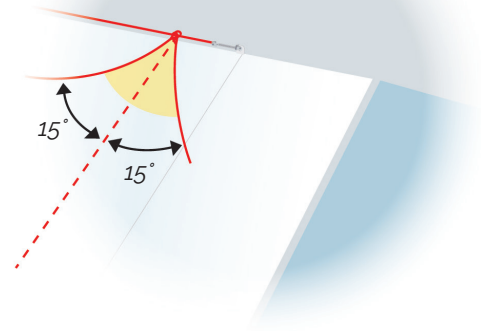
## Anchorage of personal fall protection equipment

Anchored using a harness and rope, you should be able to reach all parts of the roof with the rope at a maximum oblique angle of  $15^\circ$  to the normal.

**Be aware of the risk of the pendulum effect associated with falls!**

It may sometimes be necessary to anchor yourself using two ropes to two different places in order to be able to work safely at the extreme corners of the eaves. Where required, fit extra fall protection anchors.

The wire can usually be ended a short distance from the gable of a normal saddle roof.



## Snow load on temporary roofs

The amount of snow on a temporary roof depends on where the roof is situated and how it is designed. In the case of small roofs in exposed situations, the snow can blow off the roof. If, on the other hand, the roof is near tall trees or high buildings, the snow usually stays on the roof. On large roofs, the snow may remain in place or gather in drifts depending on the wind. In places where the wind often blows from the same direction, the snow usually gathers on the lee side of the roof, so that one half of the roof receives greater amounts of snow, which in the worst case scenario may result in uneven loading of the roof structure.

Always check that the temporary roof is designed for snow load, and, if so, what that snow load is.

According to AFS 2013:4 of the Swedish Work Environment Authority's Code of Statutes, weather protection systems shall, if snow load may occur, be designed for a snow load corresponding to at least the amount of snow that can fall over a period of seven days based on the 50-year value. A design snow load of  $0.6 \text{ kN/m}^2$  is usually sufficient to meet this condition.

**PLEASE NOTE: When there is a risk of overloading, the snow must be removed from the roof immediately. Make sure that a snow clearance plan is available.**

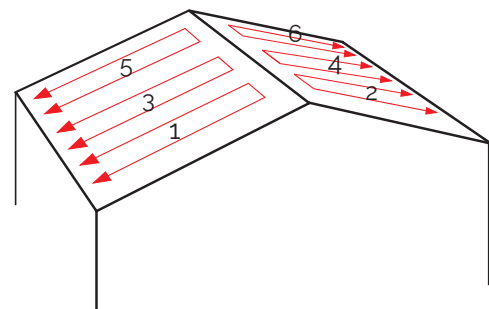
**PLEASE NOTE: If the temporary roof is not designed for snow load, the roof sheeting must first of all be taken down when there is a risk of snow load in order not to risk the collapse of the structure.**

## Snow clearance plan

A snow clearance plan describes when and how a temporary roof should be cleared. The plan should be drawn up in consultation with the designer and then be available to those who are to clear the roof.

Among other things, the snow clearance plan should show:

- When clearing needs to be done, what amount/load of snow.
- How amount/load of snow is to be monitored.
- Information on access and anchoring arrangements.
- How snow clearance is to be done, sequence of clearing so as to avoid uneven loading.
- Any measures in connection with clearing, cordoning off and guarding.



*In order to avoid uneven loading of the roof, it is best to clear the halves of the roof in parallel in the sequence 3 + 4, 1 + 6, 2 + 5.*

## Safely clearing snow from temporary roofs

The work of clearing snow from a roof must be done by a well-coordinated team with at least two skilled people on the roof and at least one standing guard on the ground or in the street. It is also very important that personnel with extensive experience of working on roofs be in charge of this work.

The roof must also be correctly provided with access and anchorage devices for personal fall protection equipment.

**PLEASE NOTE: Sharp objects and careless handling can easily damage the roof sheeting. Make sure, therefore, that you use snow shovels and other equipment that is suitable for the temporary roof. It is better to leave a few centimetres of snow or ice than to risk damaging the roof.**

In order to protect people and property, it is important to cordon off the risk area on the ground below the roof and to have the area guarded by someone who has constant contact with the people clearing the snow on the roof.

Clear both halves of the roof evenly in order to avoid uneven loading of the roof by too much snow. Draw up a snow clearance plan in consultation with the designer of the roof.

See also the Swedish Work Environment Authority's brochure "Safer shovelling".

### Snow density and snow load

The weight of a blanket of snow on a roof depends on the water content of the snow and therefore its density.

Newly fallen snow has a density of 30-100 kg/cubic metre. This means that a 10 cm thick blanket of dry newly fallen snow corresponds to 3-10 kg per square metre, which in turn corresponds to a snow load of 0.03-0.1 kN/m<sup>2</sup>.

Snow type	Density kg/m <sup>3</sup>	Snow load for 10 cm snow kN/m <sup>2</sup>
Very fluffy snow	< 30	< 0.03
Dry newly fallen snow	30-100	0.03-0.1
Wet newly fallen snow	100-200	0.1-0.2
Wind-packed newly fallen snow	200	0.2
Packed late-winter snow	200-300	0.2-0.3
Spring snow during final phase of melting	400	0.4

