

# Protect yourself against falls from height



# Working at height

This brochure is a support for you who will carry out work with building and construction, where falls from height can occur. You as employer can also need to have the provisions about building and civil engineering work, AFS 1999:3 to hand for more detailed information.

The regulations also apply during snow removal on roofs. With the help of images and text we describe different protection against falls as well as working methods you can use during work with risks of falls from heights of 2 meters or more.

From 1 January 2015, everyone who carries out building and construction work where there is a risk of falls from 2 metres and more can have to pay sanction fees if the regulations are not followed.

Some working methods are marked with red in the margins. This means that you should use them as a last alternative when collective protection measures cannot be used.

# Choice of protection against falls from height

With building and construction work where there is a risk of falls from heights of 2 metres or more, one should first choose collective protection measures. This can be work with risks for falls from height, or work on a roof. Collective protection measures can be that the work is carried out with the help of scaffolds, working platforms or other protection that the employees are not wearing themselves.

Personal fall protection equipment may only be used if it is not possible to use collective protection or if the work is so short-term that it is not feasible to assemble and use collective protection. If you choose to use personal fall protection equipment, you must see that there is a plan for the rescue of those who carry out the work and who can fall and be left hanging. When you shovel snow you can choose personal fall protection equipment as a first choice.

All work with risks of falls from 2 metres or more should be described, together with how the risks will be prevented. The preventive measures must be contained in the work environment plan at the workplace.

During the choice of fall protection you need to, among other things, think of:

- what type of work you will be carrying out
- possible working methods with the focus on the best work environment and safety
- how you can get up to and down from the work site
- how the work site looks (height, pitch, bearing capacity and so on)
- how long the work takes
- how many will work there, and are there one or several entrepreneurs
- need for barriers.

# Which paragraphs deal with sanction fees for falls from height

Sanction fees for falls from height were introduced 1st January 2015 to prevent more people being hurt by falls from height. This means that the starting point of your planning of work with risk of falls from height from 2 metres or more starts from the same rules as before, paragraphs 57 – 60 and 87 – 92 in the provisions about building and civil engineering work, AFS 1999:3. The regulations have been supplemented with paragraphs that describe a minimum level for how fall protection should be designed to avoid sanction fees, paragraphs 56a, 60a, 86a and 92a.

## Paragraphs 56a and 86a

In the paragraphs 56a and 86a there are references to both old and new rules applying for your planning of work with risks of falls from 2 metres. The paragraphs describe that the starting point for your planning should be from the paragraphs, 57 – 60 or 87 – 92 in AFS 1999:3.

The paragraphs also speak about you receiving a sanction fee if the minimum levels in the paragraphs 60a and 92a are not followed.

During snow removal you can always choose personal fall protection equipment as a first choice on condition that it is used according to the rules that apply for personal fall protection equipment.

## Paragraphs 60a and 92a

In paragraphs 60a and 92a there are details about how your protection against falls should be designed and how you should use it to avoid sanction fees. If you choose to use personal fall protection equipment, it can lead to demands that you must complement with fixed protection or use working platforms if it is possible and safer.

When you read paragraphs 60a and 92a you should consider the fact that both paragraphs are divided into three sections, point 1, 2 and 3:

1. Which different fall protection you can choose.
2. Details about how certain fall protection can be designed.
3. Exceptions for certain work when points 1 or 2 above are not possible to use

Furthermore, each point contains different letters that describe further details.

# How I can avoid sanction fees

During an inspection, the Swedish Work Environment Authority's inspectors will check that work with risk of falls from height is carried out safely and with the right methods. If the work is not carried out and does not fulfil the minimum levels in paragraphs 60a and 92a in the provisions about building and civil engineering work, AFS 1999:3 about how and which fall protection can be used, we can issue a sanction fee to the employer. We can also forbid continued work in a prohibition to an employer who is working incorrectly. This can mean that:

1. The employer who does not fulfil the minimum level can receive both a sanction fee for incorrectly working with deficient fall protection and a prohibition/order with or without a financial penalty for how the continued work should be carried out before it can continue.

or

2. The employer who works from the minimum level with personal fall protection equipment but which we assess has used the incorrect equipment, can receive a prohibition/order with or without financial penalty for how the continued work should be carried out (normally about having fixed protection or operating from a work platform)

Chimney sweeping is an example of work that is not covered by sanction fees when it is not carried out in connection with building work. The work should, however, be carried out with fall protection.

**More information about sanction fees can be found on our website [av.se](http://av.se)**

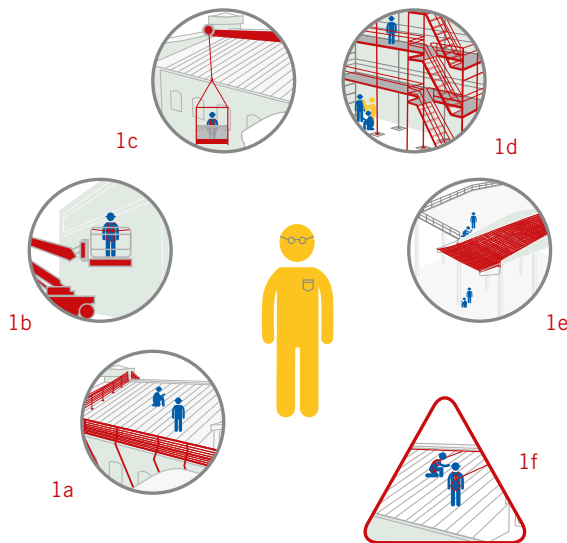
# Your choice of fall protection during work with risk of falls from 2 metres

You should firstly choose some of the fall protection in images 1a – 1e. When you have investigated that 1a-1e are not possible, or if your work is short term, 1f can be an alternative.

Firstly:

- 1a Guardrail
- 1b Work platform
- 1c Work basket
- 1d Scaffolding
- 1e Safety net

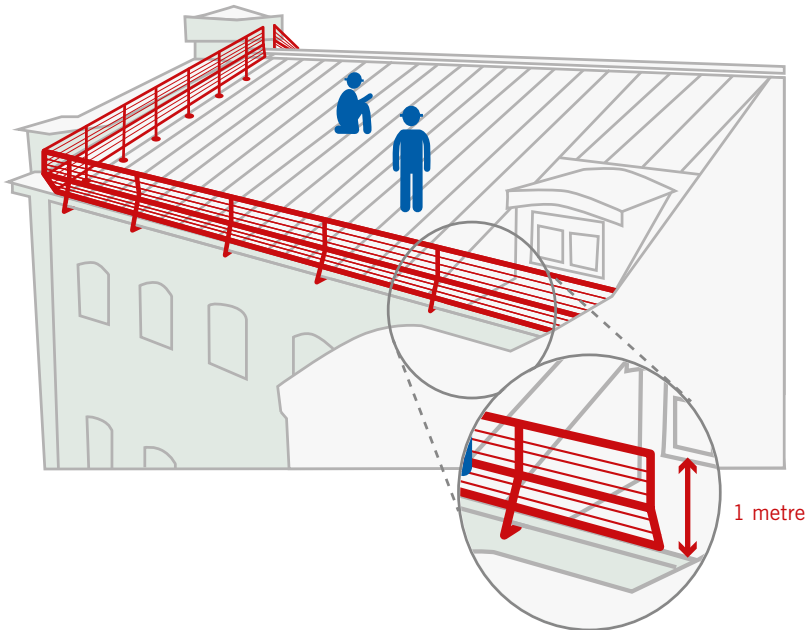
Lastly, with the exception of snow removal:  
1f personal fall protection equipment.



## Think that:

Firstly, choose collective fall protection as the alternative in images 1a–1e and lastly choose personal fall protection equipment as the alternative in image 1f. All fall protection should be used and assembled according to the existing regulations.

# Guardrail

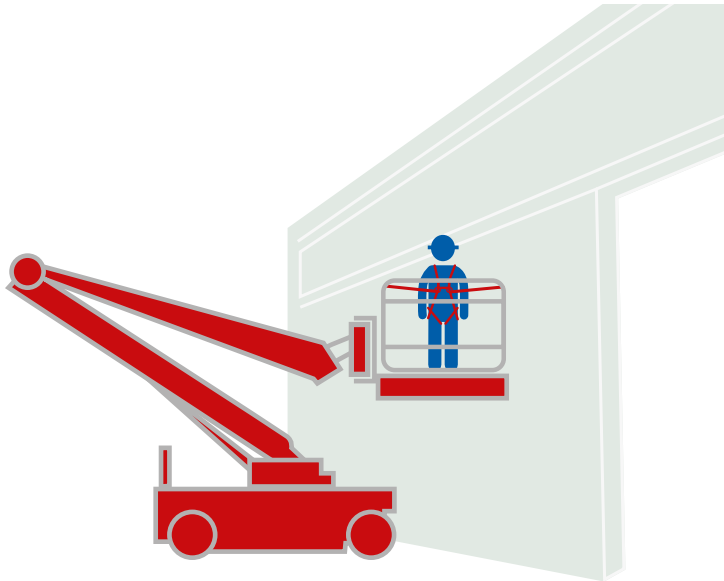


The guardrails or safety barriers should normally be at least one meter high, have three rails which are called toeboard, intermediate guardrail and principal guardrail, or consist of another corresponding full cover protection. It should be designed to safely catch a person who falls and should be calculated to tolerate the physical load that a falling person involves. The breadth (length) of the guardrail must be adapted to the work. When you move beside the guardrail that is a part of your work and the guardrail should therefore cover and be complete the whole way.

When you work on a steep roof, the guardrail can need to both be higher than 1 metre and have special protection that prevents one from falling through the rail. During certain work you need to also use personal fall protection equipment in addition to the guardrail. The guardrail should be assembled according to the directions for use. If you carry out work where a guardrail has shortcomings, it can lead to sanction fees.

**More information about guardrails can be found on our website [av.se](http://av.se).**

# Work platform



Work platforms can be fixed or mobile.

Examples of work platforms are lifts, mobile access towers, room scaffolds, mast-climbing platforms, suspended scaffolds, jetty platforms and mobile platform ladders (also called 'pulpits').

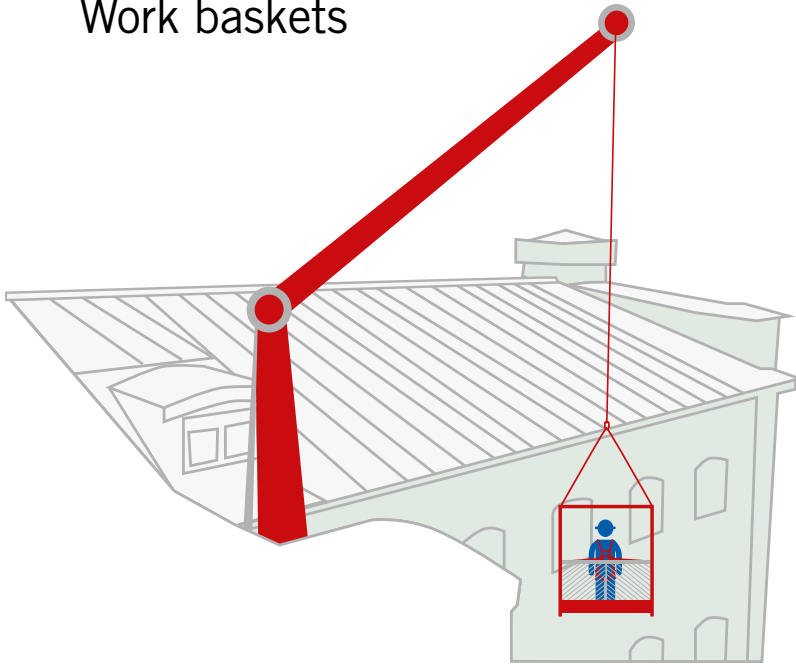
Work platforms should be used and designed from current regulations. Remember that the use of certain work platforms demand that the user has special competence.

**More information is in the provisions:**

- Use of work equipment
- Use of lifting devices and lifting accessories
- Inspection of lifting devices and other technical accessories
- Machinery
- Scaffolding



# Work baskets

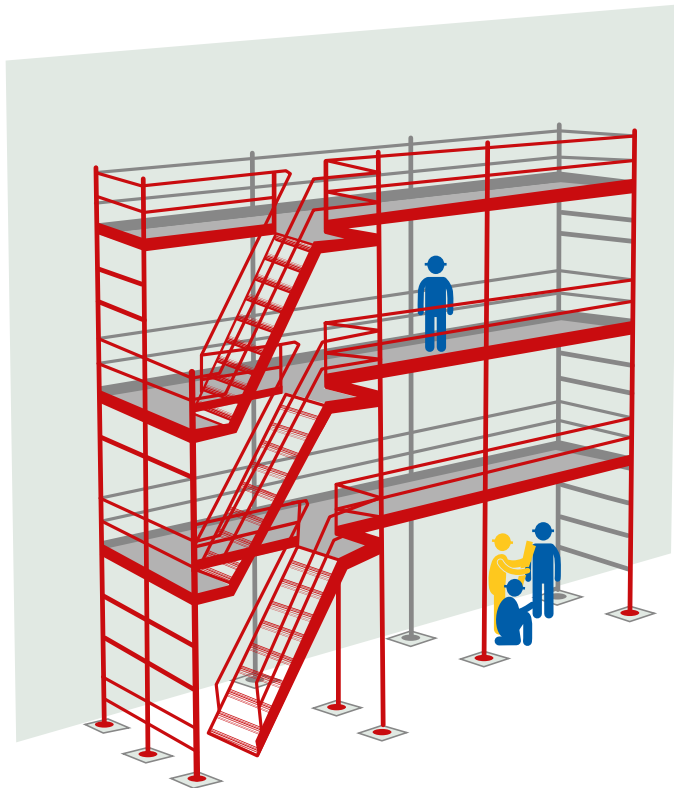


There are different types of work baskets. The basket is often fixed or temporarily mounted on a vehicle. For some cranes and forklift trucks one can use a temporary work basket. The basket should be used and designed according to current regulations. This entails also that the user needs to have special competence.

**More information is in the provisions:**

- Temporary lifting of persons with cranes or trucks
- Use of work equipment
- Use of lifting devices and lifting accessories
- Inspection of lifting devices and other technical accessories as well as
- Machinery

# Scaffolds

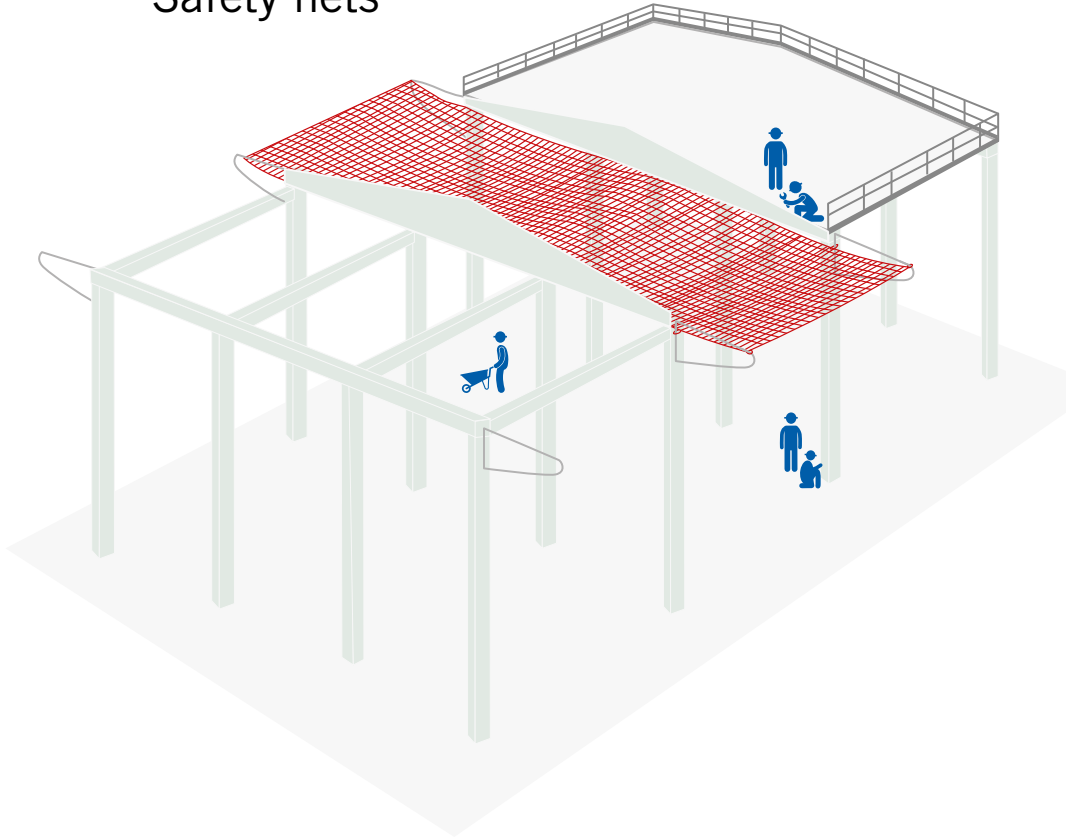


There are different types of scaffolds you can use, for example prefabricated scaffolds, tube and coupler scaffolds, and mobile access towers. Scaffolds can also be used as fall protection instead of guardrails at roof bases, the part of the roof that extends past the wall. It is important that the scaffold is designed according to how it should be used so that it really protects against a fall. The scaffold should be assembled and used according to the current rules. Those who erect the scaffold must have special documented knowledge and competence.

**There is more information in the:**

- provisions about scaffolding
- guidance about safe scaffolding, (H456).

# Safety nets

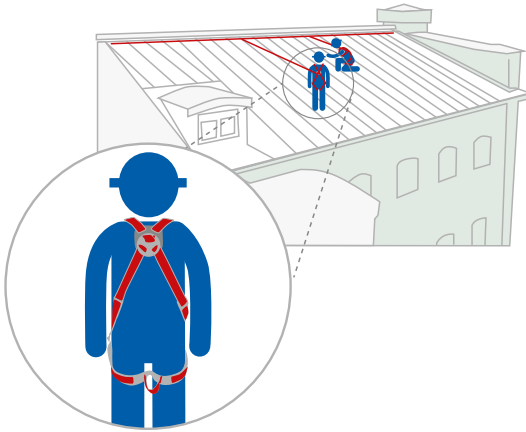


Safety nets should be designed so that they can safely catch a person that falls and at the same time prevent the person hitting something underneath the net. The safety net should be assembled and checked by persons with special knowledge about safety nets.

**More information exists in the provisions:**

- Building and civil engineering work, AFS 1999:3, paragraphs 93–100.

# Personal fall protection equipment



To use personal fall protection equipment is always a last choice during work with risk of falls, apart from snow removal. The use of personal fall protection equipment entails risks of falling and hanging, with a risk of injury. A fall can give rise to great strain on the body and demands a plan for how a person who falls can quickly be rescued. Because a person who falls can get circulation disorders, rescue within 15 minutes is required. Work with personal fall protection equipment may never be undertaken while working alone. A fall arrest system shall brake and stop a fall. It consists of a full body harness, a suitable component to provide a fall arrest function, and an anchoring device. There are four different suitable components to provide a fall arrest function combined with a full harness:

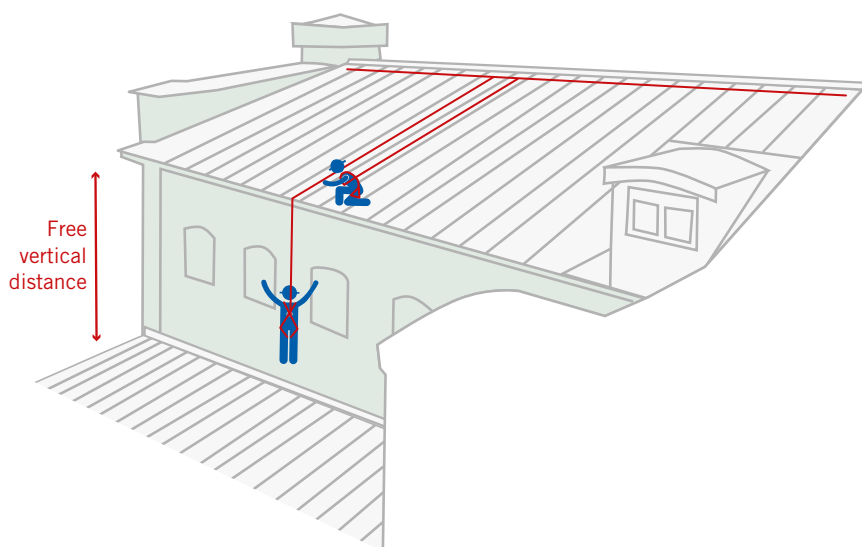
- a lanyard,
- an energy absorber with a function that damps a fall,
- a retractable type fall arrester, or
- a guided type fall arrester including an anchor line.

You should anchor the personal fall arrest system to an anchoring device, which can take up the load arising at a fall.

**Take into consideration that fall protection equipment should be:**

- personally adapted to the user
- adapted for work near sharp edges if necessary
- inspected every year by a qualified person and checked before each use.

Always read the manufacturer's instructions for use before you begin, so that you know how to use your fall protection equipment. Before using personal fall protection equipment, you must investigate whether it is suitable for your work. With risk for falls from height, a personal fall arrest system that brakes and stops a fall should be used. All personal fall arrest systems has a braking distance during falls, depending on the type of equipment. This means that there has to be a minimum free vertical distance during a fall, see image. The manufacturer must state in the directions for use which free vertical distance is required for the personal fall arrest system.



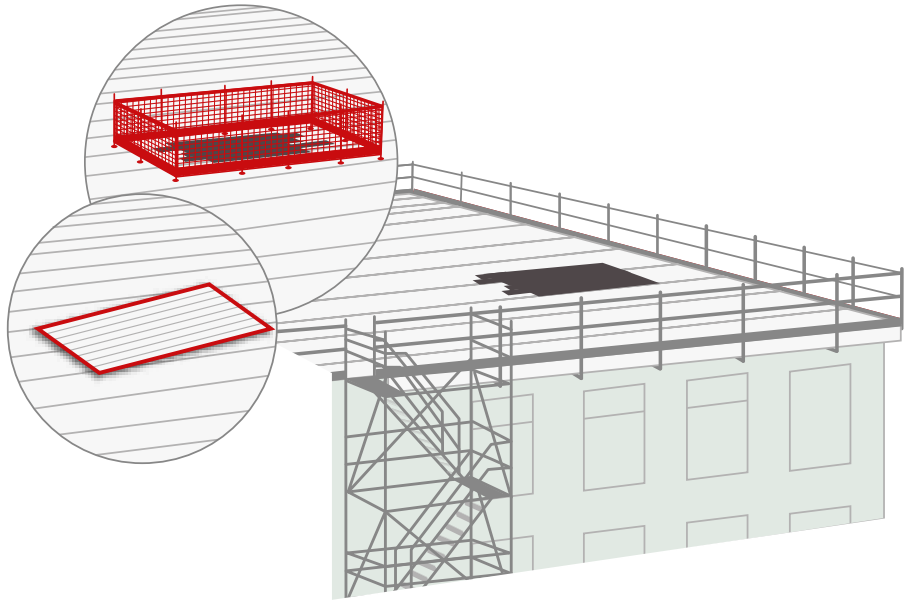
### **Warning!**

Two different personal fall arrest systems may never be serial or parallel coupled during use, for example two parallelly attached energy absorbers or serial coupled retractable type fall arrester with an energy absorber. This can influence the arrest load and braking distance negatively during a fall.

#### **More information in the provisions:**

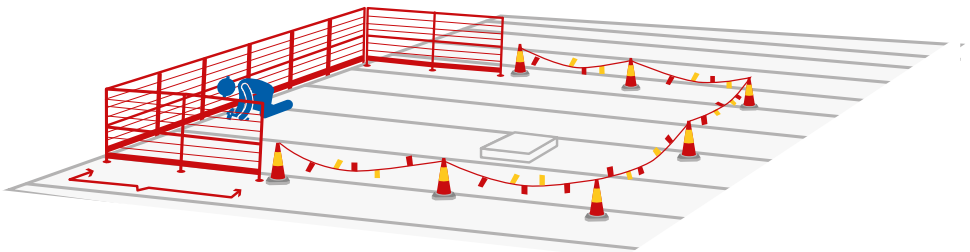
- Use of personal protective equipment
- The Swedish Work Environment Authority's website about personal fall protection equipment

# Openings and holes with risk of falling from height



Openings and holes with a risk of falls from height must be protected by a fall protection guardrail, or covered. It is important that the guardrail is designed according to the description for guardrails. The guardrail must be around the entire opening. If one chooses to cover the hole with a slab or equivalent, it must be durable, stable and be clearly marked. Where there are lifts or other heavy vehicles that could drive in the vicinity, the covering or guardrail must be adapted accordingly.

# Work on a limited area on a roof



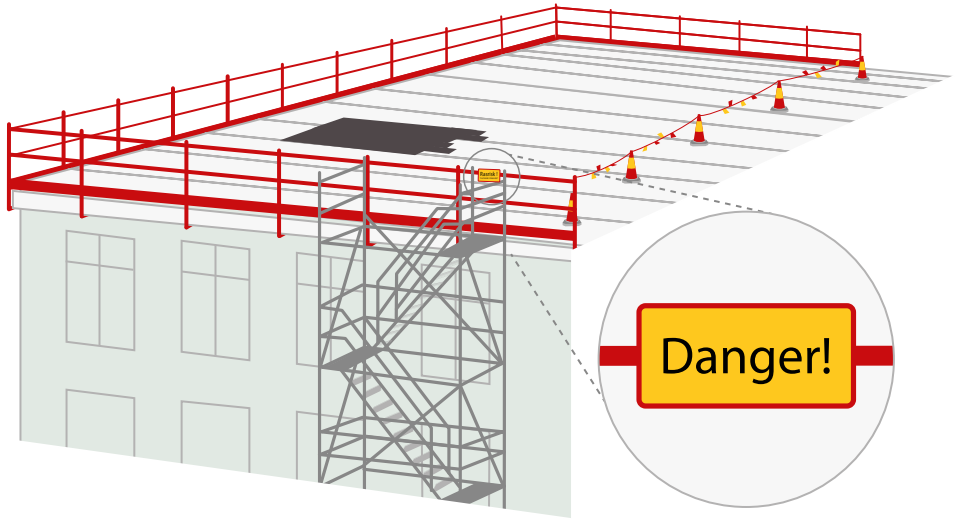
Length = 2 metres

The image shows that there only needs to be fall protection and barriers around the part of the roof where you are working. This means that there must be fall protection in all directions where there is a risk of falling. In general there should be clearly visible and durable barriers towards other parts of the roof. The area to and from the working area should be clearly marked with barriers or fall protection where necessary. A clearly visible and durable barrier could consist of stable cones together with signal tape that copes with weather conditions on the roof. The purpose of the barrier should be clear for all within the working area.

**More information can be found in the provisions:**

- Signs and signals

# Work in areas with a risk of falling through the roof



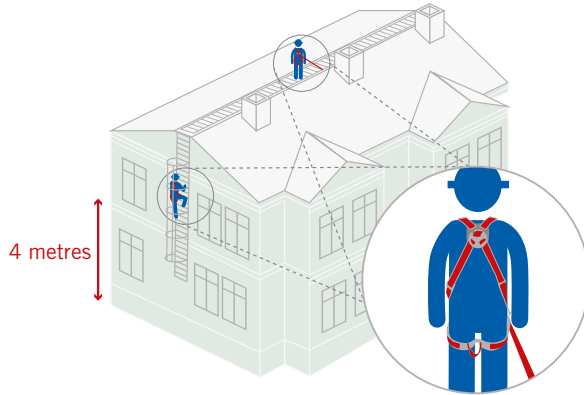
When there is a risk of falling through a roof, it must be investigated before the work can start. Areas where there is a risk of falling through a roof must be closed off with clear and durable barriers. Often, clear barriers on access routes are also required.

**More information can be found in the provisions:**

- Signs and signals



# Anchoring during work or transfer at over 4 metres



You who are going to climb more than 4 metres up on a ladder, a roof or suchlike, where there is a risk of falling from height must normally be anchored by means of personal fall protection equipment. This applies also if you move in several stages and the total height for falls from height is more than 4 metres. The requirement also applies for ladders with back protection. You can only anchor yourself to the ladder if it is approved for that. If it is not, special anchoring devices that meet the applicable requirements must be installed.

Anchor yourself on a continuing basis. This means that all the time you are either:

- connected via a gliding system or equivalent, or
- use two different fall energy absorbers that you in turn fasten yourself to on the way up (energy absorbers may not be parallel coupled).

If you work on a roof, other movements with lower level differences than 4 metres within the roof can require personal fall protection equipment if there is a risk of falling or rolling down to another level.

You must also use personal fall protection equipment when you move on a roof, gangways and other platforms where there is no other fall protection.

**More information can be found in the provisions:**

- Use of personal protective equipment

## Exceptions for work without fall protection and from a ladder

The Swedish Work Environment Authority's rules give certain possibilities for exemptions from using fall protection or working with the help of a portable ladder in order to:

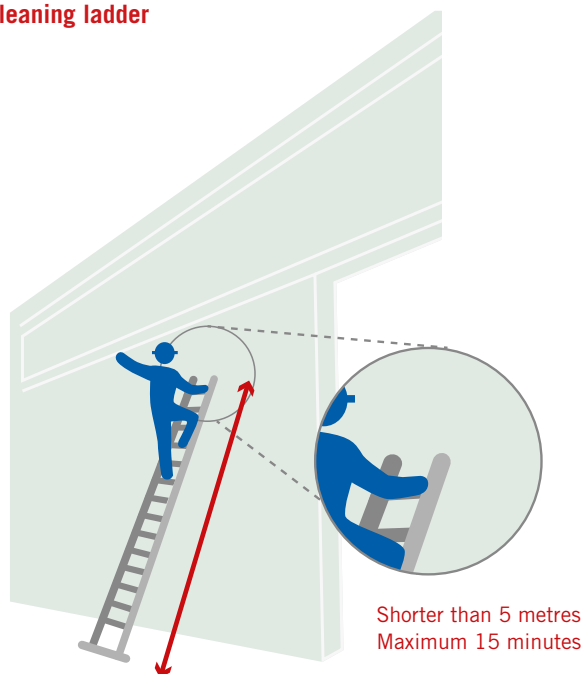
- Be able to carry out individual and short jobs from a portable ladder.
- Be able to begin certain work by either installing an anchor device, or by fastening yourself to an existing anchor device.
- Being able to work on a flat roof (maximum pitch of 6 degrees) without fall protection if the safety distance to the edge is at least 2 metres and no other risks, such as slipping, exist.

**Before you use the exceptions:**

Read page 19–21 in this brochure and the regulations about exceptions, point 3 in paragraphs 60a and 92a in the provisions about building and civil engineering work AFS 1999:3

# Exception

## – Work from a leaning ladder



If your choice of fall protection shows that you are able to use a leaning ladder, you should fulfil the following conditions:

- You can carry out the work with one hand. You must be able to hold yourself fast with the other hand.
- The ladder you use is shorter than 5 metres.
- Every ladder arrangement takes less than 15 minutes. This is the time it takes from when you put the ladder up, climb up to do the work and climb down again.
- That you do not do the work more than a few times.

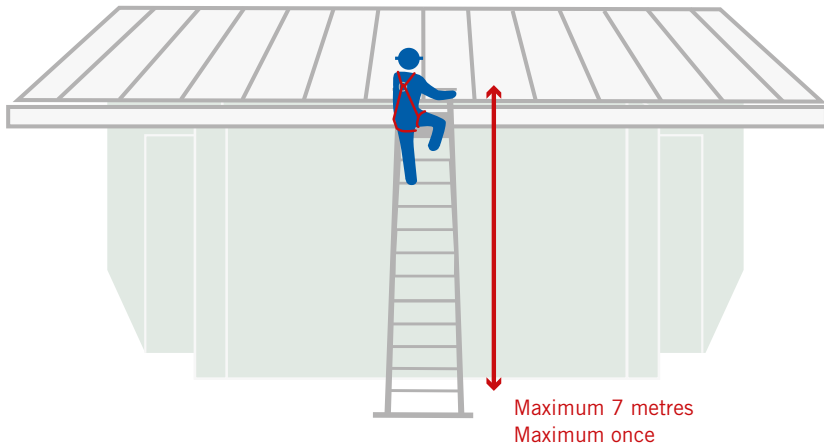
Do not forget that the ladder should stand steady and normally needs to be widened at the bottom, braced or anchored. Accidents with ladders that slide or flip are frequent.

**More information can be found in the provisions:**

- Ladders and trestles

## Exception

– During individual work to install an anchor device for a fall arrest system, or for the first time to connect a fall arrest system to the anchor device, maximum 7 metres over ground level.



You may start a job, by, for example, climbing up 7 metres to connect yourself to an existing anchor device, or to install an anchor device. Where you carry out work may not be a higher falling height than 7 metres from ground level or equivalent. If there are anchor devices at lower levels, you should use these.

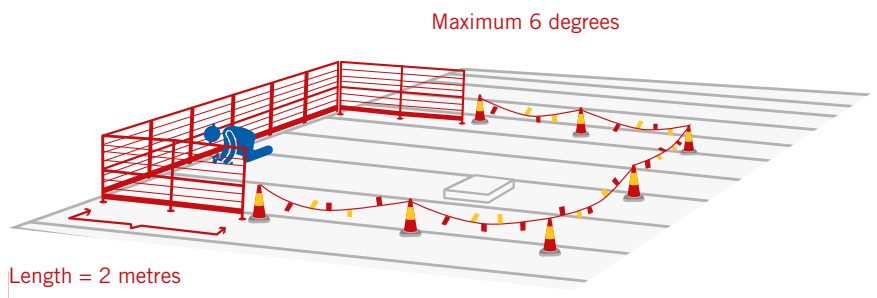
Don't forget that the ladder should be stable and often needs to be widened at the bottom, braced or anchored. Accidents with ladders that slide or flip are frequent.

**More information can be found in the provisions:**

- Ladders and trestles
- Use of personal protective equipment

# Exception

## – Work on a flat roof



**If the roof is flat with a pitch of 6 degrees at the most, you can choose a simpler protection against the risk of falling from height. The following must be fulfilled:**

- You are working more than 2 metres from the edge.
- There are no risks of falls from height or risks of falling over the edge of the working area.
- There are no risks of slipping.
- The working area is clearly closed off with durable and long-term barriers.
- Access paths to and from the working area are clearly closed off and, if necessary, equipped with guardrails or safely covered.
- All who work at the construction site should know where and why there are barriers on the roof.

If you work closer than 2 metres to the edge there must be fall protection that can catch a falling person by a good margin.

**If you cannot carry out your work according to the exception above, you must work according to the choice of fall protection on page 6.**

# Read more

Read more at av.se about:

- Building and construction work
- Falls from height – work carried out at heights of more than 2 metres
- Scaffolding
- Lifting – working with cranes and lifts
- Personal fall protection equipment
- Snow removal
- Sanction fees

At av.se you can test the digital support ‘fee avoider’. It gives you an overview of some of the work environment regulations in the construction sector that carry sanction fees, and calculates how big the sanction fees could be if you do not follow them.

Here you will also find:

## **Provisions**

- Building and civil engineering work
- Scaffolding
- Use of lifting equipment and lifting accessories
- Inspection of lifting equipment and other technical accessories
- Temporary lifting of persons with cranes and trucks
- Use of personal protective equipment
- Machinery
- Use of work equipment
- Ladders and trestles
- Signs and signals

## **Brochures**

- Protect yourself against risks of falling from height
- Scaffolding

## **Books**

- Safe scaffolding

## **Do you have any questions?**

Contact our answer service, telephone +46-10-730 90 00



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