Without fall protection, working on a sloped roof is one of the most dangerous jobs in construction. Just a small slip or loss of balance can lead to a life-altering injury or even death.

Whenever workers are exposed to a fall of more than 3 metres (10 feet) off the ground, they must be protected by a fall protection system and trained how to use it properly.

**Training**

Workers who may use a method of fall protection to protect themselves from a fall hazard must complete a working at heights (WAH) training program that has been approved by the Ministry of Labour, Training and Skills Development (MLTSD). To find an approved WAH training course provider in your area, visit the MLTSD website:

[labour.gov.on.ca/english/hs/wah_providers.php](labour.gov.on.ca/english/hs/wah_providers.php)

An approved WAH course will include classroom-based information on hazard recognition and safe work procedures as well as a hands-on practical component showing how to use fall protection equipment. A WAH refresher course must be taken every three years to keep this training up-to-date.

In addition to classroom-based training, employers must ensure that workers are given site-specific training, which includes proper oral and written instructions by a competent person. This includes making them aware of fall hazards at the project and providing instruction on the particular equipment they will be using.

To meet this requirement, employers should ensure that the site supervisor conducts a hazard assessment or job safety analysis (JSA) of the site and develops a Fall Protection Work Plan (BR005). The supervisor should review the assessment and plan with workers on the site.

For more information—including resources and templates to help you meet these requirements—visit the Fall Prevention and Working at Heights topic page at [ihsa.ca/falls](ihsa.ca/falls)

**Safe Work Procedures**

Following the steps below can help you work safely on a sloped roof.

**Step 1: Wearing the proper equipment**

Fall protection equipment must be approved by the Canadian Standards Association (CSA). The CSA logo means that the equipment meets the requirements of a national standard.

Working on a sloped roof generally includes the following CSA-approved equipment:

1. A **full-body harness** connected to a lanyard
2. A **lanyard** connected to a rope grab
3. A **rope grab** connected to a lifeline
4. A **lifeline** connected to an anchor point.

For more information about proper equipment, see the Fall Protection Equipment section on pages 3–4.
Step 2: Getting onto the roof using a ladder

Ladders are the most common way for sloped roofers to access a roof. Although falls from ladders are common in construction work, a ladder can be a safe means of access and egress if you follow proper safety procedures. However, you should not work from a ladder. It is not a work platform.

- Inspect ladder components such as rungs and hooks for damaged or defective parts before using it.
- Secure the ladder at the top and bottom.
- Set up the ladder at a slope of at least 3-to-1 but not more than 4-to-1 (one foot back for every 3 or 4 feet up).
- Make sure the ladder extends at least 90 cm (3 ft) above the access level of the roof.
- Keep the areas at the top and bottom of the ladder clear of debris.
- Maintain three-point contact when climbing up or down a ladder. (That’s two hands and one foot or two feet and one hand on the ladder at all times.)
- Never carry tools or material up or down the ladder. Instead, use another means to hoist tools and materials to the roof.
- Look for overhead powerlines before setting up a ladder. If overhead powerlines are close to the work area, we recommend using a non-conductive type of ladder (e.g., fibreglass).

For additional information, refer to IHSA’s Ladder Use in Construction Guideline and the Ladders chapter in IHSA’s Construction Health and Safety Manual (M029). These resources can downloaded for free from the Fall Prevention and WAH topic page at ihsa.ca/falls

Step 3: Installing anchors

If using a fall protection system on a sloped roof, workers must be tied off at all times. Finding an anchor point to tie off to can seem like a challenge, but it’s much easier if you plan ahead. Below are some options.

- Install temporary roof anchors and tie off to them along the way. There are many different types of temporary anchors including roof peak anchors. See the pictures below for examples.
- On newer homes, some builders leave a hole in the sheathing near the roof peak to give a worker access from a safe point inside the house to install a roof anchor. They can then tie off to that anchor and access the roof through the hole.

Depending on the size of the roof, you may have to install several temporary anchors before you reach the roof peak.

Ensure that your anchors are installed correctly. For example, use the proper screws as indicated in the manufacturer’s instructions. Always follow the manufacturer’s guide, and if you’re not sure about something, ask for help or advice.

On most homes, you will need multiple anchor points to prevent a swing-fall hazard. Make sure to tie off to anchor points that are at a height and location to prevent you from swinging and striking the ground or a lower level if you fall.
Step 4: Working on the roof

If you are working above 3 m (10 ft), you must be protected from a fall at all times. For roofers, that means you must be tied off from the time you leave the ladder until you get back on the ladder.

If you have to move from one lifeline to another, use a Y-lanyard. It has two places to attach to a lifeline, so it will keep you tied off at all times.

Harness

- Inspect your harness before each use (e.g., check buckles and webbing).
- Adjust the chest strap so that it is snug and located near the middle of your chest. If you fall, a properly adjusted chest strap will prevent you from coming out of the harness.
- Adjust the leg straps so that your fist can fit snugly between the strap and your leg.
- Adjust the shoulder straps so that the back D-ring rests between your shoulder blades. A properly positioned D-ring will keep you upright during a fall.

Step 5: Getting off the roof

Getting off the roof while remaining protected from a fall can be difficult because the peak anchor has to be removed. This will happen on every job, so there should be a clear procedure to follow.

Find a method that works best for your situation and make a plan for getting off the roof before you start the work. For instance, there may be an appropriate anchor to tie off to at ground level. Or use the same method you used getting onto the roof, just in reverse. Remember to remove any temporary anchors on the way down.

Lanyard

A lanyard connects a harness to the lifeline and rope grab.

- Inspect your lanyard before each use (e.g., check if webbing is cut or frayed).
- Try to keep the length of your lanyard as short as you can while making sure you are still able to work. This will reduce the likelihood that you will fall over the edge or fall too far.
- In a fall arrest system, the CSA requires that a lanyard attached to a rope grab must not exceed 76 cm (30 in).

Fall Protection Equipment

Always inspect equipment before each use (every morning before starting work). If any part is damaged, remove it from service and use another one. Check to make sure equipment is CSA-approved (i.e., look for the CSA logo).
Fall Protection on Sloped Roofs

Energy absorber

In a fall arrest system, use a lanyard with an energy absorber (commonly called a shock absorber). It will absorb some of the energy exerted on the body while a fall is being arrested (i.e., stopped). This could save a life.

- Most energy absorbers come with the lanyard. Make sure that the end of the energy absorber connects to the D-ring on the back of the harness. The other end connects to the rope grab on the lifeline.
- In most cases, the energy-absorbing component is enclosed in a snug-fitting jacket to protect it from damage. Check the cover jacket for stress or tearing before each use.
- Many energy absorbers have a tag on the jacket that tears if the unit has been exposed to a shock load. Make sure this tag is intact.

Rope grab

A rope grab is used to connect the lanyard to a lifeline. When used with a rope grab, the CSA requires that the length of a lanyard in a fall arrest system must not exceed 76 cm (30 in).

Rope grabs move smoothly and easily up and down the lifeline, but will lock if a sharp tug or pull is applied. It will remain locked on the lifeline until the person is rescued.

- Inspect all connecting components before each use (e.g., check for rust or distortion).
- Each rope grab is designed and manufactured for use with a specific diameter (size) and type of lifeline. Make sure that the rope grab and lifeline are compatible. Specifications are usually listed on the housing or in the manufacturer’s instructions.
- When attaching a rope grab to a lifeline, always make sure the arrow that is marked on the side or top of the rope grab is pointed toward your anchor (i.e., up).

Lifeline (Rope)

- Inspect your lifeline before each use (e.g., check if rope is cut, burnt, or frayed).
- A vertical lifeline must reach the ground or have a positive stop (i.e., a manufactured termination) to prevent the rope grab from running off the end of the lifeline.
- A vertical lifeline is usually made of synthetic rope that is 16 mm (5/8 in) in diameter.
- The photo below shows a three-strand twisted rope made from a polypropylene/polyethylene blend. Different-coloured strands are a good indication that this is an approved lifeline. Always check the label to make sure that the rope is CSA approved.

Regardless of the safety methods you use, protect yourself from a fall at all times when on a roof.