Fall Protection – Safety Net Systems



When should a safety net be used ?

Safety nets are one option that can be used as part of a fall protection plan. Workplaces that have the risk of falling should have a fall protection plan that outlines the policy and procedures involved in assembling, maintaining, inspecting, using, and dismantling equipment such as ladders, scaffolds, or platforms used for working at heights as well as any fall protection equipment.

Safety nets are classified as a passive fall protection system which can be installed as either a barrier to prevent a fall, or beneath the work to catch a falling worker. Safety nets are designed to decrease the fall distance, to absorb the energy of a fall, and to reduce the likelihood or seriousness of an injury.

However, safety nets do not stop the worker from falling. Installing a fixed barrier such as guardrails, opening covers, or walls are always the preferred method to prevent a worker from falling. Safety nets are most often used when it is impossible or impractical to install fixed barriers or to use an anchored and lifeline system (fall arrest system).

What does your jurisdiction require?

Occupational health and safety laws generally require action when a worker has the potential to fall about 3 metres (10 feet). Check with your jurisdiction as exact requirements do vary. Note that most jurisdictions require the use of specific fall protection measures before, or in addition to, personal protective equpment (PPE).

When deciding on the use of a safety net, check your local legislation for requirements such as:

- Is there a specified standard that your safety nets must meet such as ANSI/ASSE A10.11-2010 (R2016) Safety Requirements for Personnel Nets – Construction and Demolition Operations?
- Is a qualified installer or a professional engineer required to certify the installation of the safety net?
- Is testing by a professional engineer or other competent person required before the safety net can be used?

- Is there a requirement to conduct any testing or for record keeping when using safety net?
- Is there a requirement for fall protection training for workers?

What should be done before using a safety net system?

Create and follow a fall protection plan that outlines the various ways fall hazards will be controlled or eliminated at each worksite. The nature of the work and the worksite itself will determine whether safety nets can be used as a fall protection method for that specific situation. For example, a fall protection plan should specify all procedures for:

- assembling, maintaining, inspecting, using, and taking down the fall arrest system or personnel safety net
- rescuing of a fallen worker suspended by a fall arrest system or caught by the safety net (if the worker is unable to return themselves to the ground or another safe surface)

When selecting a safety net, consider:

- whether it is being used to catch falling people or objects, or as a barrier to prevent falls
- what is located in the areas above, below and around the safety net
- the weight and type of load a safety net will need to support
- the length of time the safety net will be used and the possible local weather conditions during that time
- all manufacturer’s specifications
- local requirements for your jurisdiction related to safety net systems specifically, and fall protection in general

Only use safety nets to catch falling workers when the drop area is clear. If a falling worker could come into contact with surrounding structures or objects (including sharp edges), it is a good practice to evaluate other fall protection methods that will minimize the potential for injury.

What should be done when using a safety net system?

When using a safety net system:

- Install all safety nets at the distance beneath the falling hazard as required for your jurisdiction. For example, Workers Compensation Board of PEI requires personnel safety nets to be installed within 4.6 m (15 feet) below the work area
- Make sure there is sufficient clearance below the net so a falling worker does not come into contact with the ground or other objects as the net sags when supporting the forces imposed on it
- Look at the entire potential fall area and make sure it is unobstructed. Falls are not always a direct drop from an opening or edge. This factor can be important on bridges or when working at heights on construction sites with lots of sharp edges and structural elements that jut out.
- Make sure the safety net extends beyond from the boundaries of the work surface area. For example, Safe Work Manitoba’s Fall Protection Guide states that the net extends at least 2.5 m beyond the borders of a work area.

It is good practice to:

- Follow the manufacturer’s recommendations when installing, using, and maintaining a safety net.
- Only use or rely on a safety net after it has been properly installed.
- Place the safety net so it avoids contact with sharp edges.
- Clear the net regularly and do not allow debris to accumulate in the net.
- Visually inspect safety nets before each shift to make sure it remains in good repair.
- Test the safety net regularly for its integrity and strength. Deterioration from exposure to ultraviolet (UV or sunlight) light, other weather elements, and regular wear and tear can weaken a safety net. When testing, make sure the material maintains the minimum energy absorption capacity specified by the manufacturer.
- Test safety nets after they are moved to a new location or repaired.
- Do not jump or throw objects into the net.
- Do not drag nets across the ground.

What should be done when safety nets catch debris?

Safety nets often catch falling debris or equipment, which impacts their ability to safely arrest a fall. If left in the net while work is ongoing, debris can damage a safety net system or become a hazard to the worker if they fall. Debris may:

- injure a person who falls into the net
- overload the weight or size capacity of the net
- cause the net to sag, increasing the distance between workers and the location of the net meant to break their fall

Stop all work above and below the safety net to remove the fallen debris. Accumulation of snow or ice should also be removed before work can begin or continue.

What are tips for maintaining a safety net system?

When maintaining a safety net system, follow all the manufacturer’s specifications. Safety nets should be checked daily, or as recommended by the manufacturer or as required by law.

Never use a safety net system with damaged components. Make sure a damaged safety net is immediately taken out of service and repaired before work continues. Safety nets can be damaged during use or storage by:

- UV exposure
- adverse weather such as strong winds, ice, or snow
- sharp objects or other abrasions
- sparks or exposure to heat (such as near an area where welding, grinding or burning is taking place)
- wear and tear from previous loads or a specific impact.

Visual inspections include checking for:

- correct installation
- abrasions, cuts or similar damage in the material or mesh

- heat or friction damage
- damage to the stitching
- damaged or deformed fittings
- debris or equipment in the net
- defects in the knots of a knotted mesh
- other signs of deterioration or damage

Regular testing of the safety net system includes:

- when the net is installed
- before the work shift
- on a regular schedule by a supervisor or a competent person assigned to the task to ensure inspections before each use are being performed adequately
- after any being in severe weather conditions

Have the required person (e.g., a competent person or professional engineer) check the safety net after any impact from heavy objects or people.

Keep records of all inspections and tests performed. Also record all repairs or replacements, showing the date of any repairs or replacements and who did the work.

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