



Portable ladders and stepladders

Every year an average of 14 people die and 1200 are seriously injured at work by falling from a ladder or stepladder. You do not need to fall from a great height to get injured. More people break their arms or legs falling less than two metres from a ladder than falling from above this height.

By following the steps below, you can make sure you, your employees and colleagues do not have any accidents.

Step 1 Can I avoid working at height?

- You should avoid working at height if you can
- You may be able to use long-handled tools or other equipment (for example a long-handled brush or roller for painting) to safely carry out a job without using a ladder (see figure 1)



Figure 1 - This is an example of using suitable work equipment to avoid working from height

Step 2 If work has to be done at height, is a ladder or stepladder the best equipment to use?

- If you can, you should consider using another method of reaching the work at height, such as a tower scaffold, cherry picker or scissor lift
- If you need to reach high shelves, you could use 'airport steps' which you can move around but you can also fix in one place and fit with a handrail and platform
- As a guide you should only use ladders for light work that isn't likely to last longer than 30 minutes and where you can keep three points of contact with the ladder while you carry out the work (refer to Step 8)

Step 3 Who can use a ladder or stepladder?

You should only use a ladder or stepladder if:

- you have been trained and instructed in how to use the equipment safely
- you are fit and healthy and are not taking medicine which could stop you from using ladders. If you are not sure, you should speak to an occupational health professional



Step 4 Is the ladder long enough?

- You should make sure there is one metre of ladder length above the highest rung you use
- You should never stand on the top three rungs of a ladder
- Make sure extension ladders that have more than 18 rungs have an overlap of at least three rungs when they are extended
- Make sure extension ladders that have 18 rungs or fewer have an overlap of at least two rungs when they are extended
- The height at which you can work from a ladder will depend on how much space you have, the type of work involved, how much effort you need to put up the ladder and whether you can secure the ladder
- A 10-metre ladder is the longest length that one person can normally safely handle

Step 5 Is the ladder or stepladder safe to use?

- You should only use Class 1^{1,2} or EN 131³ ladders or stepladders at work because domestic (Class 3^{1,2}) ones are not normally suitable
- Make sure the ladder or stepladder is safe by:
 - examining it in line with the manufacturer's instructions
 - checking it before it is used each day - see the ladder safety checklist below
- Keep a record of the checks you make on your ladder or stepladder

Ladder safety checklist



Good condition (clean and dry, not covered in wet paint, oil and mud)	<input type="checkbox"/>
No cracks	<input type="checkbox"/>
No damaged or bent stiles	<input type="checkbox"/>
No warped or split wood	<input type="checkbox"/>
No corroded metal	<input type="checkbox"/>
No sharp edges or dents	<input type="checkbox"/>
No bent rungs	<input type="checkbox"/>
No damaged rungs, steps or top platforms	<input type="checkbox"/>
Caps or rubber fittings are in place and in a good condition	<input type="checkbox"/>

Useful tip - Never paint ladders or stepladders as you could hide dangerous faults. You can protect a wooden ladder with clear varnish or rot-proofer



Step 6 How do I position the ladder safely and properly?

- Leaning ladders are designed to be used at an angle of 75 degrees to the surface they are leaning on. You can judge this angle by using the one-in-four rule (one unit out for every four units up as shown in figure 2)
- Lean the ladder against a solid, secure surface
- Put the base of the ladder or stepladder on a firm, level, dry, secure surface and make sure that it can't slip outwards
- If you are using an extension ladder, always extend it before you use it

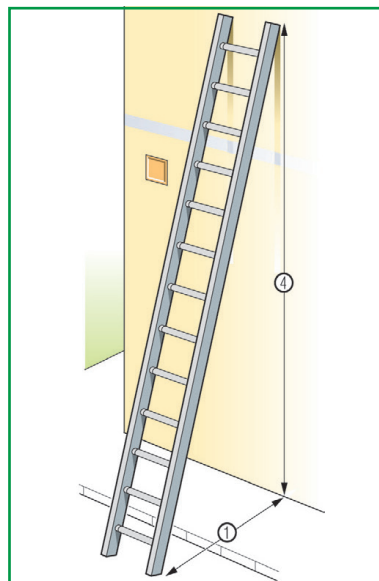


Figure 2 - This is an example of a ladder that has been positioned correctly using the one in four rule

Useful tip - Remember the 'one in four' rule

Do not position a ladder:

- where it can be knocked over by a door or window being opened
- where it might get hit by a passing vehicle
- within six metres of an overhead power line, unless the lines have been disconnected or insulated
- against a fragile surface such as guttering, plastic features or glass

Useful tip - Never use boxes or bricks to gain extra height

When putting up stepladders:

- make sure the stepladder is locked into position
- follow the manufacturer's instructions
- rest the stepladder on a firm, level base
- make sure the stepladder is facing the work

Useful tip - Use a large flat board to give a firm base on soft ground



Step 7 How do I make sure the ladder is secure?

- Keep the top of the ladder secure by tying it (from the stiles, not the rungs) with rope or straps to a secure, fixed object
- Tie the bottom of the ladder to stakes in the ground or use fixed blocks, sandbags or specially designed stabilisers to stop the ladder from slipping

Useful tip - If you can't make sure the ladder is secure, get another person to 'foot it' by standing with one foot on the bottom rung and holding a stile in each hand

Step 8 How do I use the ladder safely?

If you are using a ladder or stepladder you should know how to do so safely and how to spot any faults.

You should always:

- try to keep three points of contact with the ladder at all times, for example both feet and one hand (see figures 3a and 3b)
- use both hands to hold on to the ladder when going up or down, and take one rung at a time
- make sure you don't miss the lower rungs as you step off the bottom of the ladder
- tie a ladder if you can't stop it moving. You can tie it at the top, the bottom or both, but make sure that both stiles are tied. You should never tie a ladder by its rungs
- make sure you are wearing footwear that is clean and in good condition with tied laces

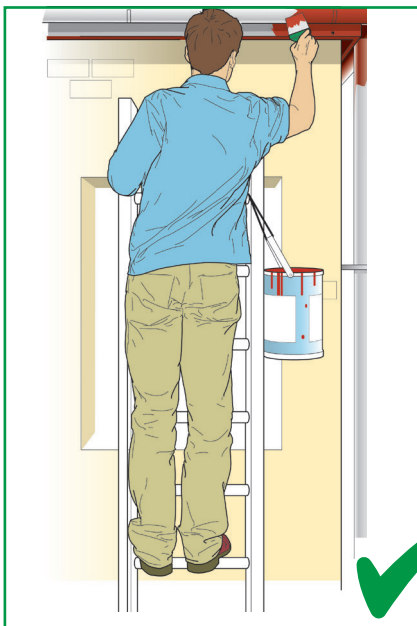


Figure 3a - This is an example of using a ladder safely by keeping three points of contact with the ladder (two feet and one hand)

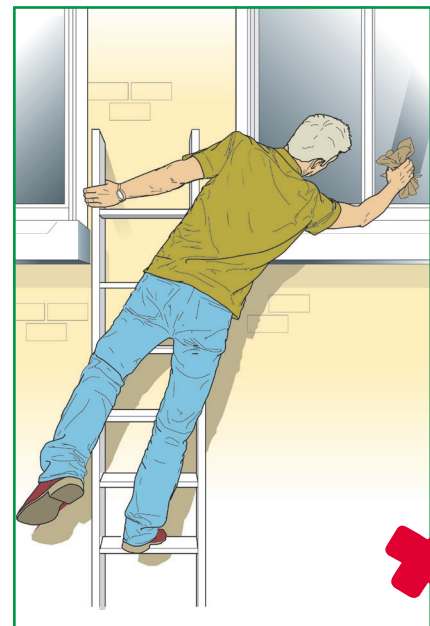


Figure 3b - This is an example of not using a ladder safely by reaching too far and not keeping three points of contact with the ladder



You should never:

- reach too far when working from a ladder
- use the top steps of a stepladder (so that you always have something to hold on to)
- stand on the top handrail of a stepladder
- allow more than one person on a ladder or stepladder
- work sideways from a stepladder (see figures 4a and 4b)
- stand with one foot on the ladder and the other on another surface
- carry anything heavier than 25 kilograms (kg) on a ladder - ideally you should not carry anything over 10kg
- carry awkward objects on a ladder. This includes long pieces of light material such as plastic guttering, which you should ask someone else to pass you up instead
- use a ladder in strong winds or near power lines
- use metal ladders or wooden ladders with metal parts near any electrical hazards
- use a ladder the wrong way round
- stand the bottom of the ladder on a kerb or road
- support scaffold boards on the rungs of a ladder
- move too fast when you go up or down a ladder



Figure 4a - This is an example of using a stepladder safely by placing it to face the work



Figure 4b - This is an example of not using a stepladder safely by placing it side-on to the work



Step 9 How do I store ladders and stepladders?

- Store ladders in a dry, well-ventilated area, away from the weather, dampness and heat
- Hang ladders horizontally or rest the stiles on the floor
- Never hang ladders or stepladders vertically
- Always store wooden ladders away from the ground

Case Study

A self-employed decorator died after his stepladder collapsed. One of the higher steps broke under his foot, which caused the lower stile of the ladder to break. The ladder was in a poor condition and the wood around the broken step was rotten, which was partly because the ladder was not stored properly.

For more information

- 1 Specification for portable timber ladders, steps, trestles and lightweight stagings (BS1129) 1990 British Standards Institution
- 2 Specification for portable aluminium ladders, steps, trestles and lightweight stagings (BS2037) 1994 British Standards Institution
- 3 Ladders. Terms, types, functional sizes (2007) (BS EN 131-1)
Ladders. Specification for requirements, testing, marking (1993) (BS EN 131-2)
Ladders. User instructions (2007) (BS EN 131-3)
Ladders. Single or multiple hinge-joint ladders (2007) (BS EN 131-4)

Health and Safety Executive NI

Falls from height topic page: www.hseni.gov.uk/articles/falls-height

Health and Safety Executive (GB)

Work at height topic page: www.hse.gov.uk/work-at-height/index.htm