

# 11. Ladders and Step Platforms

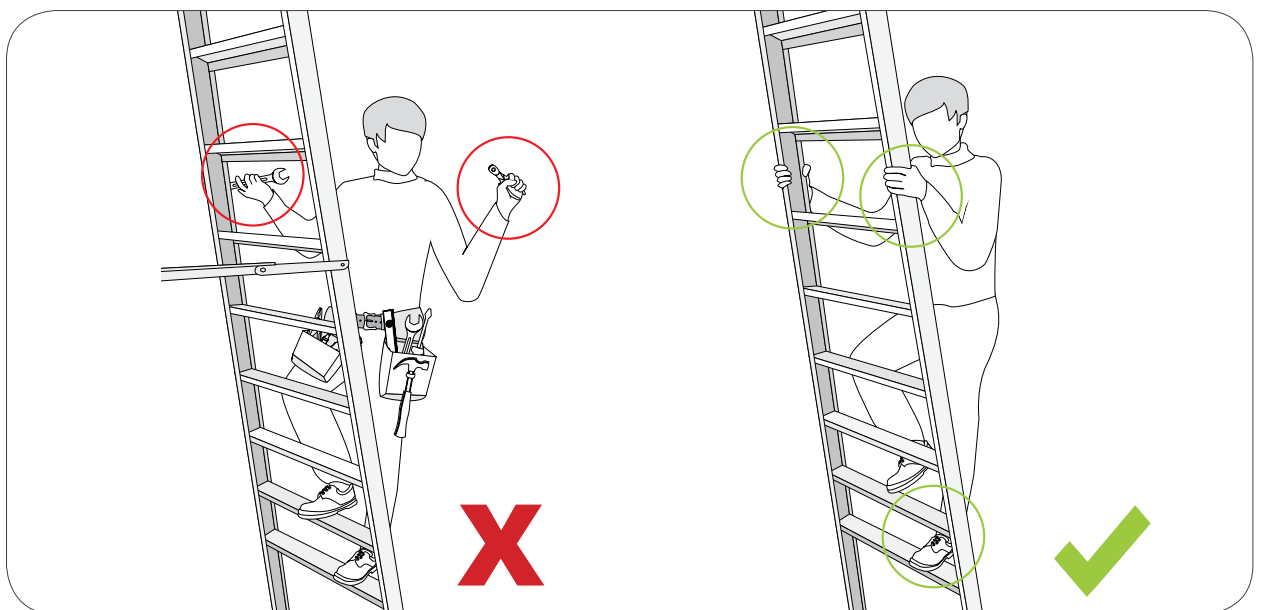
## 11.1 Safety Guidelines for Ladders

**11.1.1** Ladders can be broadly categorised as fixed ladders and portable ladders:

- A fixed ladder is an integral part of a building or structure, and cannot be readily moved or carried.
- Portable ladders are ladders that are designed to be mobile and can be carried and deployed at various locations. The two main categories of portable ladders are step ladders and vertical access ladders.

**11.1.2** Observe the following safety guidelines when using ladders:

- Do not use ladders that are of poor construction, unsound material or are of inadequate strength;
- Do not use ladders where a person or ladder may make contact with power lines. Do not use ladders that contain metal near live electrical equipment;
- Do not set up ladders in passageways, doorways, driveways or other places where a person, vehicle or crane lifted load can hit it;
- Do not use ladders near the edge of an open floor or on scaffolding to gain extra height; if a ladder topples in such a situation, the worker could fall over the edge;
- Do not work on ladders continuously for extended periods of time (maximum recommended time: 10-15 mins);
- Do not overreach – ensure that body stays within the stiles and keep both feet on the same rung throughout the task;
- Do not use the ladder unless slip resistant footwear is being worn; and/ or
- Do not carry materials and tools by hand when ascending or descending the ladder. Persons on ladders should maintain three points of contact at all times (see Fig. 11.1).



**Figure 11.1:** Tools and materials should not be carried by hand and should be in a tool belt or side pouch (left). Three points of contact with the ladder should be maintained at all times (right).

**11.1.3** Do not use ladders with any of the following faults:

- Metal stiles which are corroded, twisted, bent, kinked, crushed, or with crack welds or damaged feet;
- Rungs, steps, treads or top plates which are missing, worn or loose;
- Missing, broken or loose tie rods; and
- Missing, broken or worn ropes, braces or brackets.

**11.1.4** Ladders can be checked for serviceability by;

- Taking each end of the ladder in turn and trying to push the stiles apart and then together. Any movement indicates insecure rungs or loose tie rods;
- Laying the ladder flat, raising one end and attempting to push one stile while pulling the other. If the stiles move relative to each other, the rungs are loose; and
- Ladders should be inspected routinely to ensure that they are in good condition.

**11.1.5** Fall prevention measures in association with the use of ladders should be in place if the risk assessment shows that additional protection is necessary (e.g., ladder lashing).

**11.1.6** Alternative safe means of access and work platform (example of a step platform shown in Fig 11.2) should be provided if the risk assessment shows that usage of ladder may be unsafe for the duration or height of the task.



**Figure 11.2: A step platform can provide a more stable work surface.**

## 11.2 Portable Ladders

### 11.2.1 Step Ladders

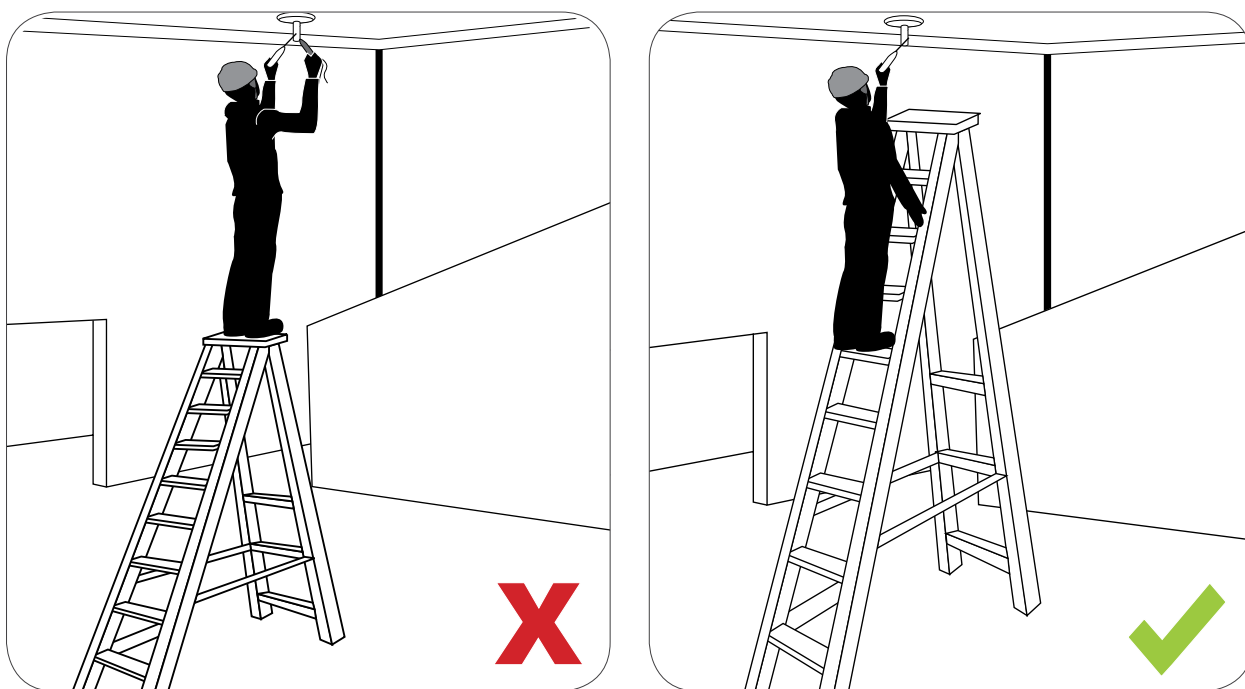
**11.2.1.1** Step ladders, commonly known as A-frame ladders, in general should not be used for access to another level unless they are designed for the purpose as specified by the manufacturer. Ladders used for access to another level must be properly secured.

**11.2.1.2** Step and trestle ladders should only be used when they are in the fully open position.

**11.2.1.3** Standing on top of a step ladder (see Fig 11.3, left) is highly unsafe and should never be done. If it is necessary to work from a step ladder, work a few steps below the top rung, so that a handhold can be maintained.

**11.2.1.4** Ensure that both spreaders are locked firmly in the open position.

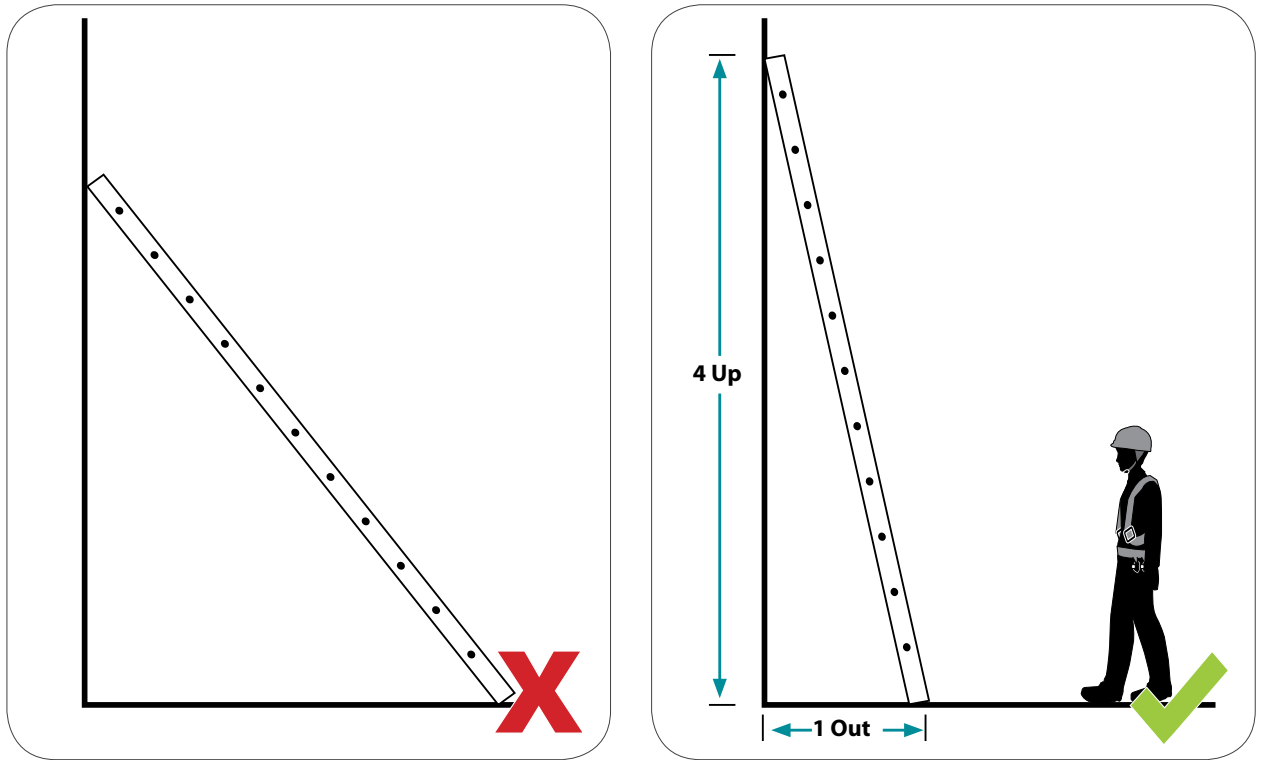
**11.2.1.5** Avoid work that imposes side loading. If side loading cannot be avoided, ladder must be properly secured using tie backs or other suitable means.



**Figure 11.3:** If it is necessary to work on a step ladder, work a few steps below the top rung, so that a handhold can be maintained.

### 11.2.2 Vertical Access Ladders

**11.2.2.1** Ladders leaning against a supporting structure should be set up on a level area on firm footing and the base should be located a distance from the wall approximately a quarter of the vertical height of the ladder (see Fig 11.4).

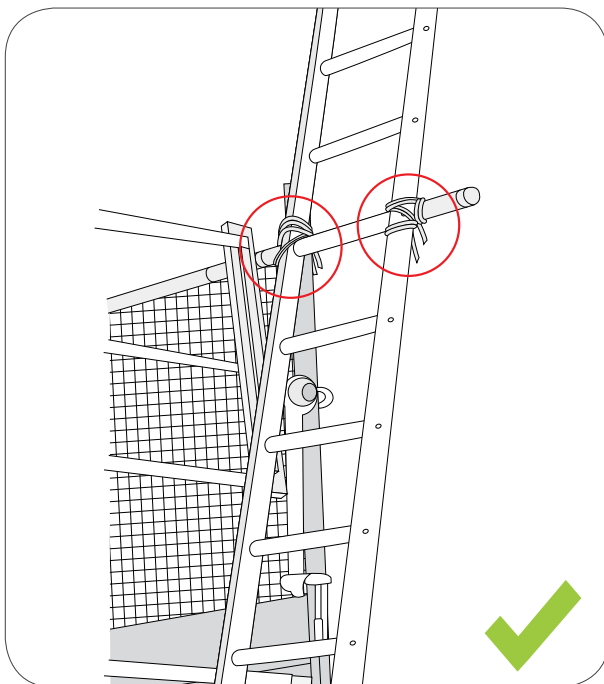


**Figure 11.4: The ratio of the height to the base for a correctly positioned ladder is 4:1.**

**11.2.2.2** Where a ladder is used as a means of access or as a working place, adequate handholds should be provided to a height of at least one meter above the place of landing of the highest rung to be reached by the feet of any person working on the ladder.

**11.2.2.3** When securing a ladder:

- Ensure that the ladder is on firm ground or the user can spread the load, for example, by placing a board at the bottom of the ladder;
- Tie the ladder to a suitable point making sure that both stiles are tied (see Fig 11.5).



**Figure 11.5: An access ladder with secure handhold and both stiles tied.**