HEALTH AND SAFETY AUTHORITY

Using Ladders Safely

Information Sheet

This information sheet is written for employers, the self employed and anyone who uses a ladder.

Falls from ladders account for up to two fatalities and 220 injuries each year. The total number of non-reportable injuries is higher again.

Most ladder injuries result from falls but other injuries are caused by lifting a ladder, slipping or falling when carrying it, or the ladder collapsing or falling.

This guidance covers the most common types of ladders such as straight ladders, stepladders/A frame ladders.

What requirements must I comply with?

Every time you use a ladder you must comply with the Work at Height Regulations:

- You must plan and organise the work
- You must carry out a **Risk Assessment**
- You must only use a ladder where a risk assessment shows the use of other work equipment is not practical
- You must select and use the most appropriate work equipment
- People working at height must be competent
- You must ensure that equipment used for work at height is inspected and maintained.

What is a Risk Assessment?

A risk assessment is a careful examination of what could cause harm to people as a result of a work activity. It allows you to take the necessary precautions to prevent harm occurring.

How do I do a risk assessment?

There are five steps to a risk assessment:

1. Look at the hazards.
2. Decide who might be harmed and how.
3. Evaluate the risks and decide whether the existing precautions are adequate or whether more should be done.
4. Record your findings.
5. Review your assessment**.**

What do I need to consider if I am doing a risk assessment?

If you are doing a risk assessment you need to consider the following:

- the work activity
- the equipment to be used
- the duration of the work
- the location of the work activity i.e. presence of hazards such as excavations, underground services, overhead power lines etc
- the working environment, e.g. weather conditions, lighting
- condition and stability of existing work surfaces
- physical capabilities of the workers

What is required when planning to do work at height?

Any work at height needs to be planned in advance of the work activity. Careful consideration should be given to the selection and use of the work equipment so that a safe system of work is adopted. This safe system of work needs to take account of;

- any supervision of workers that may be necessary, e.g. work equipment selected lower down the hierarchy of control, such as fall arrest equipment, will require a high level of supervision;

Figure 1a - avoid overreaching

Figure 1b - correct position

Figure 2a - avoid sideways loading

Figure 2b - keep belt buckle in the stiles

- any weather conditions that workers may be exposed to, e.g. carrying out work on a sloped roof in icy or rainy conditions;
- any emergency or rescue procedures that may be required, e.g. if persons fall how will they be rescued.

What do I need to consider when selecting equipment for working at height?

When selecting work equipment for use at height, the following need to be taken into account:

- the working environment: What are the ground conditions, are there space constraints, are other people working in the same area, will members of public be affected?
- the duration and frequency of use: Is the work activity of short duration, is it repetitive?
- the risks associated with the equipment during erection, maintenance and dismantling of such equipment.

When can I use a ladder?

Ladders should only be used as work equipment where a risk assessment shows the use of other work equipment is not justified. The work at height regulations do not ban ladders but do require careful consideration to be given to their use. As a guide, only use a ladder or stepladder:

- where the work is of short duration – ladders are not suitable where they are in one position for 30 minutes or more;
- where the risk is low, i.e. because the nature of the work makes a fall unlikely or where there is a fall that the nature of the fall would be unlikely to cause injury;
- for 'light work' - ladders are not suitable for strenuous or heavy work;
- for work that does not involve carrying heavy or awkward tools or equipment;
- where a handhold is available both for climbing the ladder and in the working position;
- where you can maintain three points of contact (hands and feet) at the working position. On a ladder where you cannot maintain a handhold, other than for a brief period of time, other measures will be needed to prevent a fall or reduce the consequences of one. On stepladders where a handhold is not practicable a risk assessment will have to justify whether it is safe or not.

Safe use of ladders

Many falls from ladders occur due to incorrect use of ladders such as:

- overreaching
- overloading
- not maintaining three points of contact
- poor positioning of ladder
- not securing the ladder.

Avoid overreaching

Many accidents occur due to the ladder moving unexpectedly during use. This is often caused by the user overreaching. Set up your ladder so as to avoid having to overreach. Position yourself correctly on the ladder (see Figure 1a and 1b). If working on a stepladder, face the ladder towards the work activity, this will avoid side loading (see Figure 2a and 2b). On a ladder do not use the top three rungs, on a stepladder do not use the top two steps unless an appropriate handrail is fitted. Never straddle a stepladder/ A frame ladder(see Figure 3).

Don’t overload

Ladders like most equipment used to support a load have load capacities. Ensure that the manufacturer’s instructions are followed in this regard. Avoid carrying heavy or awkward loads on a ladder. Often it is found that ladders are not robust enough for the proposed work. Ensure ladders are of sufficient strength/class for the job. Seek information from the suppler or manufacturer on whether your ladder is up to the job.

Figure 3 - never straddle a stepladder

Maintain three point contact

Overreaching may cause the user to lose the three point contact which is required.

- Keep your belt buckle (navel) inside the stiles and both feet on the same rung throughout the task (see Figures 1b and 2b)
- On a stepladder where you cannot maintain a handhold (e.g. putting a box on a shelf), the use of a stepladder will have to be justified by taking into account:
  - the height of the task;
  - whether it is light work;
  - whether it avoids side loading;
  - whether it avoids overreaching;
  - whether the user’s feet are fully supported; and
  - whether you can tie the stepladder.

Figure 4 - use of standoff mechanism

Positioning of your ladder

Set up the ladder on firm level ground or use levelling device if fitted. Do not lean the ladder against a surface that may be slippy or not robust enough (gutter or glass) to sustain the weight of the ladder and you. Alternatively, you can use effective spreader bars or effective stand-offs(see Figure 4). Set up your ladder at the right angle and in the right location (avoid overreaching). Figure 5 gives guidance in relation to setting up ladders on slightly sloped ground. The correct angle for a ladder is 75 degrees or the 1 in 4 rule. (see figure 6) Again, refer to manufacturers instructions and risk assessment before any set up of a ladder. Other factors to be considered in relation to set up are:

- supporting structure
- weather
- work environment
- overhead lines
- other work activities.

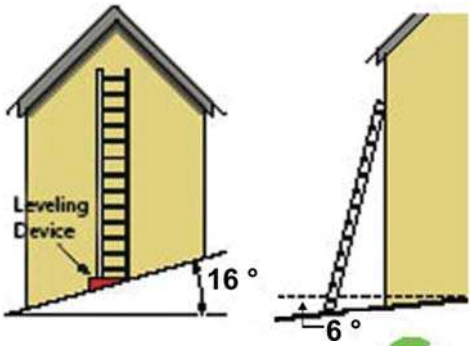

Figure 5 - correct ladder setting

Securing your ladder

Both ladder stiles should be tied to a structure capable of restraining the ladder. Securing ladders at the top is best; securing at the bottom or middle is not very effective to prevent sideways slip, unless it is done properly with equipment designed for this purpose. Alternatively use an appropriate ladder stabilising device as per manufacturers instructions. (see figures 7,8,9 and 10)

Maintenance and Inspection

Detailed Inspection

You must inspect and maintain the ladder at regular intervals to ensure the equipment is in safe working condition. The time between inspections should be based on risk assessment and the manufacturer’s instructions. Where exceptional circumstances have occurred (e.g. impact to ladder or tampering) the ladder should be inspected as soon as possible. You should keep a record of all maintenance and inspections carried out. Records should be kept of all maintenance and inspections carried out. Schedule 7 of the Work at Height regulations details the particulars to be included in a Report of Inspection.

The aim is to establish a system that is robust enough to intervene before ladders become dangerous.

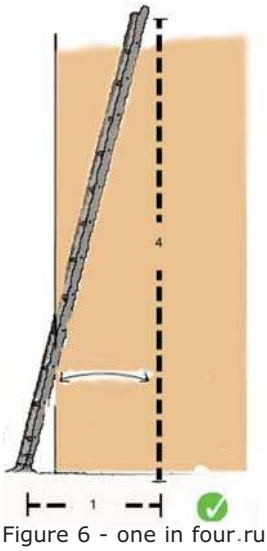

Figure 6 - one in four rule

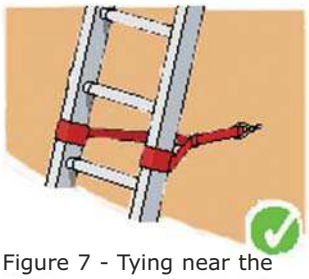

Figure 7 - Tying near the base of the ladder

Figure 8 - ladder tied midway

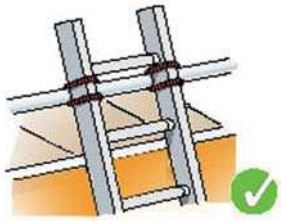

Figure 9 - ladder tied at top

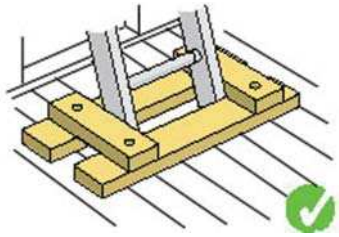

Figure 10 - support at base

The record of inspection should include the following:

Inspection
1. The name and address of the person for whom the inspection was carried out.
2. The location of the ladder.
3. A description of the ladder (type and identification).
4. Date and time of the inspection.
5. Details of anything that may be a risk to any employee.
6. Details of any action taken
7. Details of any further action considered necessary.
8. The name and position of the person making the report.

Pre-use checks

Before using the ladder you must visually check it at least daily. To enable the user to carry out checks training is required in relation to what to look for. A person should only use a ladder if competent to do so. The inspection does not have to be recorded but should pick up obvious defects such as:

- ▲ cracked or bent stiles or rungs;
- ▲ corrosion;
- ▲ defective or missing fittings or ties.

Training and Supervision

Training

Training is a key element to the safe use of ladders. Employers must ensure that employees are provided with training and information in relation to safe ladder use. Ladder users must be competent in their use. They must know how to check it, carry it, erect it, use it, and move it all in a safe manner.

Supervision

A lack of adequate supervision can lead to deterioration or misuse of equipment. Supervisors should ensure that inspection and maintenance regimes are implemented and recorded. Supervisors should ensure that misuse of ladders is not taking place and that all users have received the appropriate training in relation to safe use of ladders.

Do's

- ✓ Do a daily pre-use check.
- ✓ Do secure it.
- ✓ Do set up on firm ground, never on a movable surface such as tower scaffold, MEWP, pallets, blocks etc.
- ✓ Do have a strong upper resting point
- ✓ Do have ladder at a safe angle (1 out for every 4 units up)
- ✓ Do use for short duration work only
- ✓ Do use for light work only
- ✓ Do grip the stiles while climbing

Don'ts

- ✗ Do not overreach, keep your belt buckle between the stiles, both feet on same rung.
- ✗ Do not carry out work which causes sideways loadings.
- ✗ Do not work on top three rungs, or top two steps for stepladders.
- ✗ Do not straddle an A frame ladder
- ✗ Do not move a ladder while standing on the rungs.
- ✗ Do not slide down the stiles.
- ✗ Do not extend a ladder while standing on the rungs.

Where can I get further information?

The Guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007, Part 4: Work at Height, will provide you with more detailed information. It is available on our website at www.hsa.ie

The relevant legislation includes:

- ▲ The Safety, Health and Welfare at Work (General Application) Regulations 2007 Part 4: Work at Height
- ▲ The Safety, Health and Welfare at Work Act 2005
- ▲ The Safety, Health and Welfare at Work (Construction) Regulations 2006

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