



# Preventing falls from fragile roofs in agriculture

## Agriculture Information Sheet No 32

### Introduction

Working on a roof can be dangerous. In the last five years, 13 people have died as a result of work on, or associated with, fragile roofs, and 1 in every 20 reported injuries in agriculture results from a fall through or from a roof. Many of those killed or injured planned to be on the roof for only a few minutes 'to do a quick repair' - but the risks of roof work are substantial, however long or short the work period.

This information sheet is aimed at farmers and their staff who carry out work on fragile roofs, such as inspection, small-scale repairs, maintenance or cleaning, or those who manage or supervise such work. It sets out key safeguards to help them comply with the law and work safely. It does not deal with more complex or longer term work such as erecting, demolishing or reroofing entire buildings, or disposing of fibre cement roof sheets.

### Which roofs may be fragile?

Most short-term agricultural roof work will be on steel-framed, wide-span buildings with roofs constructed of fibre cement material (commonly known as 'asbestos' roofs, although modern fibre cement sheets do not contain asbestos). These roofs are fragile, ie they will not safely support the weight of a person. However, the fragility of a roof does **not** depend solely on the type of material in it. The following factors are also important:

- the thickness of the material;
- the span between supports;
- the sheet profile;
- the type, number, position and quality of fixings;
- the design of the supporting structures, eg the purlins;
- the age of the material.

You must make sure you know whether a roof is fragile **before** work starts. Remember that sometimes:

- the entire roof surface is fragile, such as many fibre cement or corroded metal roofs;
- part of the roof is fragile, eg fragile roof lights in a profiled steel roof;

- the fragility of a roof can be disguised, for instance when old roofs (including metal roofs containing fragile roof lights) have been painted over.

Regard the roof as fragile unless you have confirmed that it is not. It is extremely dangerous to assume that a roof is non-fragile without checking this out beforehand. If you do not check whether a roof is fragile before work begins, or if you do not take proper precautions when accessing a known fragile roof, you or your staff are at risk of fatal injury from falling through it.

Falls may occur where the work is done or on the way to or from it, and may be:

- from the roof edge;
- through gaps or holes in roofs;
- through fragile roof materials and roof lights.

The law requires that you take precautions to prevent such falls.

### Precautions needed before any work on fragile roofs

#### Plan the work

Before planning any roof work, ask yourself the following questions:

- Is the work necessary? The best way to prevent a fall from or through a roof is to make sure nobody ever goes on or near it.
- Can the work be done without going on the roof? Many tasks do not require direct access; for inspecting a roof can be done from a telescopic handler with a purpose-made people carrier, and such mobile access equipment can provide both edge protection and a working platform. It can do away with the need for scaffolding and can be particularly appropriate for short-duration minor work. If using farm equipment, make sure that your working platform is safe to work from (see AIS 28 *LOLER: How the Regulations apply to agriculture*).
- Are you or your staff the right people to do the work? Do you have the right skills, training, information and equipment to do it safely or is it a job for professionals?

## Assess the risks

A risk assessment must be carried out for **all** roof work: it is all dangerous. It is essential that the risks are identified before work starts and that the necessary equipment, appropriate precautions and systems of work are provided and implemented. The process of preparing an assessment for the jobs covered by this information sheet should be straightforward and relatively quick.

### Method statements

Except for the simplest jobs where the necessary precautions are straightforward and can be easily repeated (eg use a proper roofing ladder to replace a ridge tile), you should prepare safety method statements relating specifically to the job in hand. They should describe clearly the precautions and systems of work identified during the risk assessment. Everyone involved in the work needs to know what the method statement says and what they have to do - if they cannot understand the precautions or systems needed then they should not be permitted to carry out the work. Make sure you have arrangements for supervision during the work to check that the laid down procedures are followed.

The method statement should cover the following areas:

- getting on and off the roof: safe access is essential. A properly secured ladder is the minimum requirement;
- edge protection: wherever anyone could fall more than 2 m the first line of defence is to provide adequate edge protection. The minimum requirements are:
  - a main guard rail at least 910 mm above the edge;
  - a toe board at least 150 mm high;
  - an intermediate guard rail or other barrier so that there is no gap more than 470 mm;
- protection against falling through fragile materials - adequate supports or covers must be used;
- reducing the need for workers to move about the roof, eg by arranging for the right materials to be lifted to the right place at the right time.

Make sure that appropriate warning signs are displayed on existing roofs, particularly at roof access points.

### Precautions needed during work on fragile roofs

At **no** time may anyone work on, from or pass over fragile material, unless platforms, coverings or other similar means are provided that adequately support

them. **No one should ever walk along the lines of purlin bolts - this gives no protection whatsoever.** It is like walking a tightrope and must never be allowed.

Working platforms or staging (also known as crawling boards):

- should be at least 600 mm wide (see 'Method statements' for information on edge protection);
- should be long enough to provide adequate support across roof members. They should span across at least three purlins. Using a platform may spread the load, but that will not provide enough support if the only thing supporting it is the fragile material;
- must be arranged up, and not across, the gradient of the roof;
- should not be constantly moved about the roof. It is not acceptable to rely on using a pair of boards to 'leapfrog' across a fragile roof. Make sure there are enough platforms provided to avoid this.

Precautions are needed to prevent a person falling from the platform. If possible provide the platform with edge protection comprising a top rail, an intermediate rail (or equivalent protection) and a toe board.

### Precautions needed during work near fragile material on roofs

Protection is needed when anyone passes by or works within 2 m of fragile materials, eg:

- during access along valley gutters in a fragile roof;
- when fragile roof lights or smoke vents are contained in an otherwise non-fragile roof;
- during access to working areas on a fragile roof.

Wherever possible make sure that all fragile materials 2 m or closer to the people at risk are securely covered. Alternatively, provide full edge protection (ie a top rail, an intermediate guard rail or equivalent and a toe board) around or along the fragile material to prevent access to it. Make sure that you take appropriate precautions when installing such protection - or use specialist contractors and make sure they do.

Demarcation can identify 'safe areas' of the workplace and routes to and from it. If you mark out such areas:

- the 'safe area' boundary should be at least 2 m from the nearest fragile material;
- the boundary does not need to have full edge protection, but should be a physical barrier (a painted line is not adequate);

- discipline and supervision are essential to ensure everyone stays inside the safe area at **all** times.

Often, repair work on agricultural roofs takes place because of storm damage - make sure that you do not work on roofs in rain or freezing or windy conditions. One added danger is the risk of anyone carrying a roof sheet being blown off the edge if they are caught by a gust of wind.

### **Fall arrest equipment (nets and harnesses)**

In some cases you may have to work:

- from a crawling board or staging (perhaps when removing a sheet); or
- next to an opening (perhaps created by removing the roof sheet)

without adequate edge protection.

If there is a risk (eg if you slipped off) of falling more than 2 m from the crawling board or staging through the roof, or through the opening, you will need to provide a safety net directly beneath the roof. This will prevent anyone falling through the roofing material or the opening you created (eg to replace each sheet).

Safety nets should not be installed by people who are not competent to do so, such as most farm staff. You may need therefore to take independent advice or help.

Safety harnesses are not suitable for use by people who have not been trained in their use, nor without constant supervision by a competent person. Unless you are confident that you have the right staff, equipment and systems of work you should not use harnesses.

### **Training**

Some people are not suited to work at heights and could put others at risk, eg if they suffer vertigo. They should not be asked to do this type of work. Those who are suitable need appropriate knowledge, skills and experience to work safely, or must be under the supervision of someone else who has it. They need to be able to recognise the risks, understand and follow safe systems of work and be competent in skills such as:

- installing edge protection;
- operating a mobile access platform.

Training will usually be required to achieve competence. It is not sufficient to hope that workers will 'pick up' safety on the job. Consult a training provider such as an agricultural college or a training group.

### **Further reading**

*Health and safety in roof work* HSG33 HSE Books 1998 ISBN 0 7176 1425 5

*LOLER: How the Regulations apply to agriculture* AIS28 HSE Books 1998

### **Further information**

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This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

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