

# Safe working on glasshouse roofs: Advice for growers

## HSE information sheet

## Agriculture Information Sheet No 12

### Introduction

Every year, people are seriously injured as a result of falling through glasshouse roofs onto wires, hooks, staging or the ground, and from being cut by glass.

This information sheet gives guidance to growers on how to reduce these risks. 'Grower' means the person responsible for management of the work on the premises, whether as employer, manager or self-employed person.

It contains advice on:

- the hierarchy of control arrangements required by the Work at Height Regulations 2005;
- physical precautions needed before accessing, and working on, glasshouse roofs;
- the type of supervision and information required;
- selecting workers to carry out the work.

By following this advice, growers will help to ensure they meet their general duties under the Health and Safety at Work etc Act 1974, and the Management of Health and Safety at Work Regulations 1999, as well as the specific requirements of the Work at Height Regulations.

It does not cover the precautions needed when erecting or demolishing glasshouses, nor those needed to protect against health risks when cleaning glass using acids etc. If these tasks are carried out then other legislation will apply and growers should contact HSE's Infoline (Tel: 0845 345 0055) for advice.

### Work at Height Regulations 2005

The Work at Height Regulations require a hierarchical approach to risk assessment:

- Avoid working at height where possible.
- If you cannot avoid working at height, then consider collective measures to prevent falls, eg permanent handrails.
- If this is not possible, then consider personal

measures to prevent falls, eg lightweight balancing frames.

- If you cannot do this, take other steps, eg safe systems of work and training.

### Avoid work at height

First of all, you must try to **AVOID** work at height in glasshouses by, for example, doing the following:

- use automated roof cleaning;
- use automated shading;
- reduce the need for cleaning, eg by managing leaf and other debris to lessen the need to clear blocked gutters;
- consider safe maintenance as part of the criteria for new or replacement buildings, eg positioning of motors;
- plan crop height, eg to avoid high-level picking.

If you cannot avoid working at height, then prevent falls by planning this work properly.

### Plan work at height properly

There are specific duties to manage the risks of working on or near fragile surfaces and also to have systems in place to safely rescue people working at, or falling from, height in an emergency.

#### Fragile surfaces

The Work at Height Regulations specifically address fragile surfaces. Where not reasonably practicable to work and avoid being on, near, or passing across these materials then:

- provide and use suitable and sufficient platforms, coverings, guard rails etc to ensure that foreseeable loading is supported; **and**
- where risks remain despite these measures, provide suitable and sufficient means to minimise the distance and consequences of any fall, eg where practicable, consider airbags.

## Hazards

Hazards arise when:

- getting onto the roof – slipping ladders or falling while moving from ladder to gutter;
- moving along the gutter – overbalancing or tripping;
- working on the sloping roof – falling through the glass;
- tools or equipment breaking the glass;
- glass handling – manipulation of the panes and breakages.

If possible, reduce hazards, for example:

- stop all production work activity below the area in which work is taking place;
- use roofing materials less likely to be damaged, such as acrylic or polycarbonate sheets;
- use mechanical washing systems or sprinklers;
- replace glass from below; and
- before handling, examine glass sheets for flaws.

If access onto the roof is unavoidable, safe systems of work will be needed.

## Systems of work

Before any work on a glasshouse roof begins, someone with a good knowledge of the work and its hazards, and the authority to set standards at the workplace should devise a safe system of work. It should:

- help those involved in the work understand the risks and how to overcome them;
- describe safe working methods, including measures to protect other people, eg the public or other workers;
- state the equipment needed and how it should be used;
- detail the training and competences required;
- explain the need to ensure the structure is free from obvious defects and has enough strength to support equipment and workers, using information from suppliers if necessary;
- aim to time work to maximise on the chances of fair weather;
- aim to time maintenance work when the crop house is free;
- consider how, or if, airbags or staging could be installed below the work area. On new glasshouses it may be possible to install nets;
- take account of the need for emergency or out-of-hours work, especially if lone working is foreseeable, when proper arrangements for the lone worker's safety should be made;

- include plans to safely rescue someone working at height if there is an emergency.

## Before beginning work

Ensure that:

- everyone involved understands, and will follow, the safe system of work;
- where possible the work will be done from inside the house;
- all tools and equipment are safe and suitable for the job;
- only essential tools/equipment are taken onto the roof (use a tool belt where possible);
- only one person is at the same place on the roof at any time (unless unavoidable when each person should use separately supported ladders or boards);
- personal protective equipment is provided and worn;
- regular checks are made on lone workers;
- there is effective communication between everyone doing the work, and others who may be at risk;
- help is available for awkward jobs such as lifting glass onto the roof, or manoeuvring hoses for washing down;
- no routine work takes place under a roof when work is being done above;
- electrical supplies to vents are isolated so that the vents cannot open;
- with 1 m wide glass, you consider using two half-width panes rather than one full-width sheet.

## Getting onto the roof

- Access ladders must be in good condition, with both stiles secured, positioned on level ground and at the correct 1 in 4 slope.
- Newer houses should have eye points for securing ladders.
- The ladder should extend at least 1 m above the gutter unless there is a suitable handhold or extended stile.
- You need to keep three points of contact as you climb.
- You need to consider how equipment is raised safely to the working position.

## Moving along the gutter

Use devices to help prevent falls when moving along, or working from, a gutter. If possible, use valley gutter protection such as timber bearers supporting runs of scaffold boards extending at least 1 m from the gutter

on each side. Many glasshouses will not support this weight, however, and other equipment should then be used, such as:

- permanent handrailing;
- a taut line with harness;
- ride-on trolleys;
- lightweight balancing frames; or
- a combination of the above.

It is never acceptable for a person to walk the length of a valley gutter without fall-protection measures in place.

The equipment used will depend on the type of glasshouse, the width of the gutter and the job to be done. All equipment should be properly designed, constructed and maintained, and ride-on trolleys and balancing frames should be:

- light and easily carried;
- robust and strong enough to support the loads they will be exposed to, eg the weight of a person;
- easily transferred from roof to roof without putting people at risk.

## **Working on the sloping roof**

Ensure everyone works from suitable access equipment such as roofing ladders or crawling boards. Work should never be done by lying directly on the glass itself. Glasshouse manufacturers should be able to give advice about suitable access equipment for particular glasshouse types, eg those with almost flush glazing bars, which can make positioning ladders etc difficult.

## **Selecting staff**

Everyone working on glasshouse roofs should be:

- adequately trained and supervised;
- physically and mentally able, and without obvious medical conditions which would make them unsuitable for the job;
- authorised by the grower.

## **Clothing**

A common hazard is snagging trouser legs on glazing bars. Those working on the roof should ensure trouser bottoms are not loose or flapping, eg by tucking trouser bottoms into boots or socks or wearing trousers with elasticated bottoms.

Make sure that:

- all footwear has slip-resistant soles – avoid boots with laces;
- those at risk from falling glass or other objects wear a safety helmet (with visor) and protective jacket (eg a thick ‘donkey’ jacket);
- those handling glass use protective gloves, glaziers’ fingerless mitts, or suction pads.

## **Weather**

Work on glasshouse roofs is more hazardous in adverse weather conditions. Only access roofs, or handle glass, in dry, still and overcast conditions. If this is not possible, be particularly careful if:

- it is slippery under foot;
- there is bright sunlight;
- it is windy;
- there is frost or ice; or
- it is raining.

## **Using contractors**

Although using contractors for glasshouse roof work may reduce the risks to their own staff, growers should:

- remember that they have legal duties to such contractors;
- ensure that contractors are aware of hazards specific to the premises (eg using particular chemicals at certain times, overhead power lines);
- ensure that contractors are not put at risk by other work activities on the premises;
- ensure that the workforce and the public, eg children, are not put at risk by contractors.

Contractors should ensure they:

- agree a system of work with the grower;
- notify the grower before beginning work;
- comply with their own legal duties.

Both grower and contractor should know what to expect of the other, ie the sequence of work and when/where it will take place.

## **What to consider when buying a new glasshouse**

Glasshouses as ‘structures’ will be subject to duties under the Construction (Design and Management) Regulations 2007. This means that structures being erected must comply with safe working practices during the build process. The structure must be designed so that it can be maintained safely.

The duties to provide a safe design will rest with the designer but the client (the grower) has duties to provide information to the designer about the proposed use of the structure as a workplace. This will include information on why access to the roof and valley gutters is needed, eg cleaning, applying and removing shading and changing sheets of glass etc.

The designer has to make sure the risks are minimised by the design of the building, in particular getting to and from the place of work safely. This also includes any safety control measures identified such as automated cleaning systems and guard rails.

## **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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