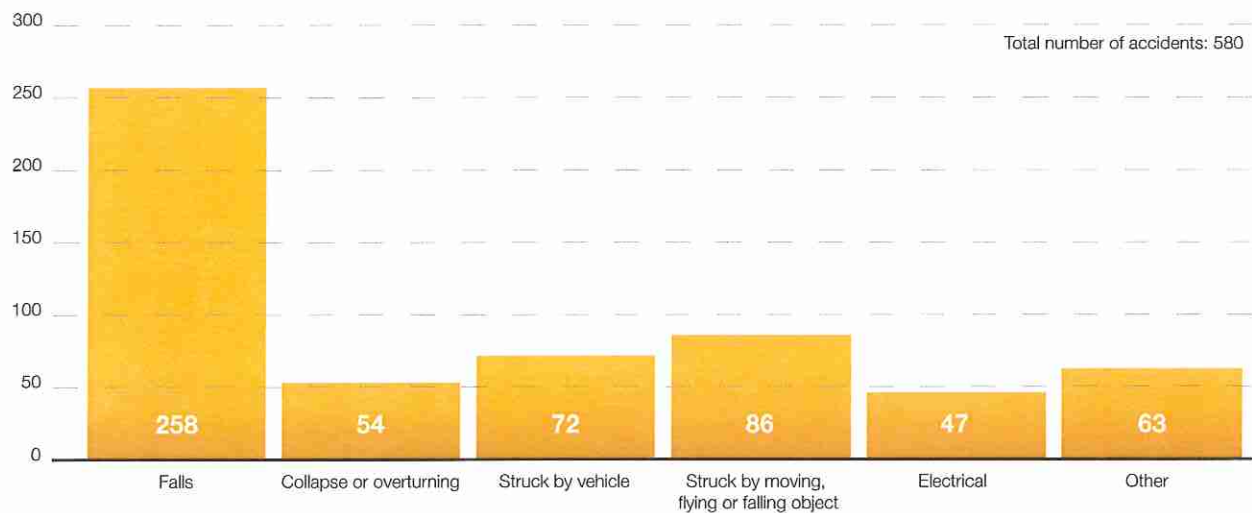


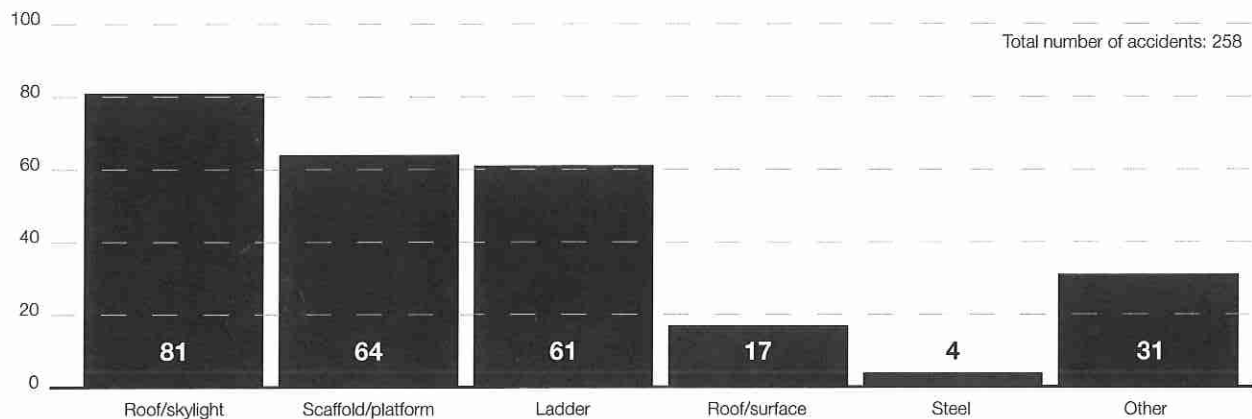
# Introduction

## Why is this guidance needed?

- 1 Working on roofs is a high-risk activity because it involves work at height. Roofers account for 24% of all workers who are killed in falls from height while at work. Falls through fragile materials, such as roof lights and asbestos cement roofing sheets, account for more of these deaths than any other single cause. There are also many serious injuries, often resulting in permanent disabilities.
- 2 Remember that not all those who are killed or injured while working on roofs are trained roofers – many people accessing roofs are in fact carrying out other tasks, ie maintenance and surveying.
- 3 These accidents occur across the whole range of roof work from the simplest repairs to large-scale construction projects (see Figures 1 and 2).



**Figure 1** Falls are the biggest killer in construction (Fatal accidents in construction 1999 – January 2007)



**Figure 2** Most fatal falls are from roofs (Fatalities resulting from falls in construction 1999 – January 2007)

## Other useful information sources

8 This book does not repeat detailed guidance available about other topics or equipment common to construction work in general. However, the reference section gives a list of useful publications and indicates where you can find such advice.

## The law

9 There is a range of law relevant to roof work safety. The principal elements are:

- the Health and Safety at Work etc Act 1974;
- the Work at Height Regulations 2005;
- the Management of Health and Safety at Work Regulations 1999;
- the Construction (Design and Management) Regulations 2007;
- the Lifting Operations and Lifting Equipment Regulations 1998; and
- the Provision and Use of Work Equipment Regulations 1998.

10 *Health and safety in construction* HSG150<sup>1</sup> contains more information on these legal requirements.

# Planning for safety

11 Planning is vital to ensure safety in any size of building or roof work project, from short-duration minor work, such as replacing a few tiles on a house, to the major refurbishment of an existing property. Planning by all parties involved helps to make sure the work is carried out safely, efficiently and without undue delay.

12 Where they apply, the Construction (Design and Management) Regulations 2007 (CDM) identify the role of each party of a construction contract and set out specific guidelines for them to follow. For more information, see chapter 'Construction (Design and Management) Regulations 2007'.

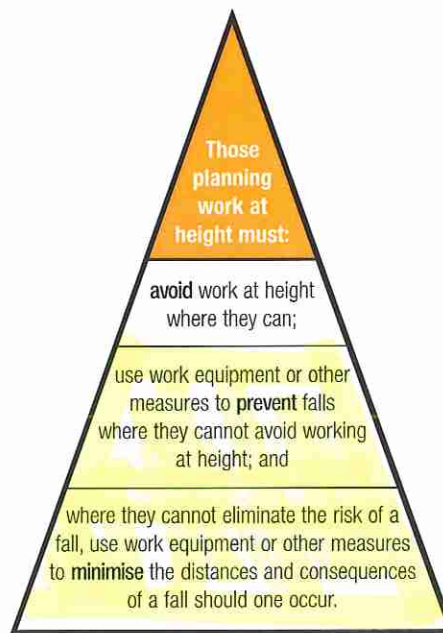
13 However, not all roof work is carried out as part of a construction contract and in many cases, if it was, CDM would not apply, especially in respect of repairs and maintenance. It is therefore essential that the hazards associated with working at height are recognised and understood by the client or customer who commissions or arranges for the work to be carried out and the designer, where there is one. (Note that a designer may be a contractor who produces a specification or scheme of work and may not be a professional design or architectural practice.)

14 The client or customer must make sure that the individual or company they have employed to carry out roof work is competent to do so and is aware of the hazards and precautions to be taken for the work to be carried out safely. (For more information see paragraphs 18–26 and 300–315.) They should also make sure that any materials selected will not create additional hazards for future maintenance, access or demolition of the property (see paragraphs 317–325).

15 Because roof work usually involves work at height, it is important to prevent or minimise risk when planning this work; take a sensible risk-based approach to identify suitable precautions. As part of this planning process, you must consider the Work at Height Regulations 2005 as falls are the biggest cause of accidental death in the construction industry, accounting for 50% of all fatalities. In these Regulations there is no distinction between low and high falls, so for any work at height, no matter how high or low, precautions are required to prevent or minimise the risk of injury from a fall.

### Hierarchy for work at height

16 The Work at Height Regulations 2005 set out a hierarchy of fall protection measures to be taken when planning work at height. The hierarchy has to be followed systematically and only when one level is not reasonably practicable may the next level down be considered.



**Figure 3** Hierarchy for work at height

17 Those in control of the work must also:

- always consider measures that protect everyone who is at risk (ie collective protection systems such as scaffolds, nets or soft landing systems) before measures that only protect the individual (ie personal protection measures such as harnesses);
- always consider passive systems such as nets (where the individual does not have to do anything to activate the system) before active systems such as harnesses (where the worker has to clip on); and
- make sure work is carried out only when weather conditions do not put the health and safety of workers in danger.

See Table 1 and paragraph 45 for practical examples.

### Training and competency

18 As stated in paragraph 1, roof work is a high-risk activity, so it is essential that anyone wishing to have roof work carried out makes sure that the contractors they choose to carry out the work are competent to do so.

19 A contractor should be able to demonstrate:

- sufficient knowledge of the particular type of roof work they are being asked to carry out and the risks it will entail; and



- current and sufficient experience of the latest techniques, standards and materials to enable them to carry the work out safely, including any relevant training or qualifications. This training should cover safe working practices and, if required, the selection, pre-use inspection and use of personal fall protection equipment.

20 It is important that contractors have up-to-date knowledge, experience and training, as although experience is a major factor, if it is based on poor or inadequate initial training or out-of-date knowledge it can be worthless. People must understand the reasons why safe working practices are necessary.

21 It is also helpful to ask whether the contractor has adequate resources to be able to complete the job safely, such as providing suitable on-site supervision and manpower.

22 Checking whether a contractor is a member of a reputable trade organisation is also useful as some provide guarantees, have a complaints procedure, and inspect the credentials of members and their work. Trade organisations such as the National Federation of Roofing Contractors, the Flat Roofing Alliance, the Single Ply Roofing Association, the Mastic Asphalt Council and the Rural and Industrial Design and Building Association offer such assurances.

23 For more information on competence and training see paragraphs 300–315. For work where CDM applies, a 'Core criteria for demonstration of competence' assessment has been produced in Appendix 4 of *Managing health and safety in construction. Construction (Design and Management) Regulations 2007. Approved Code of Practice L144*.<sup>2</sup>

### Method statements

24 A competent person should prepare a safety method statement before work starts on a roof. It needs to be appropriate to the scale and complexity of the work. In all cases, it should make sure that risks are recognised and assessed, and the appropriate control measures specified. It should identify working positions, access routes to the roof and on the roof, and show:

- how falls are to be prevented, or where this is not possible, minimised;
- how danger to those at work below, and to the public, from falling materials is to be controlled;
- how risks to health will be controlled;
- how other risks identified at planning and survey stages are to be controlled, eg handling hot bitumen;
- what equipment will be needed;
- what competence and/or training is needed;
- who will supervise the job 'on site';
- how changes in the work will be dealt with without affecting safe working; and
- who will check that the system is effectively controlling risk.

25 Safety method statements should be clear and illustrated by simple sketches where necessary. There should be no ambiguities or generalisations, which could lead to confusion. They should be produced for the benefit of those carrying out the work and their immediate supervisors and not be over complicated.

26 Equipment needed for safe working should be clearly identified and available before work starts. Workers should know what to do if the work method needs to be changed. This should then avoid 'ad hoc' methods of work on site and the use of improvised equipment, which can often lead to accidents. See Appendix 1 for further information.

## Fragility

27 Falling through a fragile roof is one of the main causes of accidents during roof work, occurring in both the construction of new roofs and maintenance of old ones, so it is important to consider fragility when planning any roof work task. Despite the fact that the installation of 'non-fragile' roofs, including roof lights, in new buildings is now commonplace, people who work on roofs should not be complacent, as eventually even these materials will become fragile due to a number of factors:

- the fixings were badly secured, leading to excessive wear around the fixing;
- the fixing washers have failed due to over-tightening, leading to sheet and fixing corrosion;
- the protective surface of the profiled sheeting was damaged by foot traffic during construction or during the roof maintenance phase, which will lead to an early breakdown of the sheet's performance;
- any slip or fall on to the roof may damage the assembly, which could lead to early corrosion failure;
- external atmospheric conditions (eg saline or factory processes) may lead to early failure of the sheet's performance; or
- the sheets and fixings have reached the end of their design performance.

**28 All roofs should be treated as fragile until a competent person has confirmed they are not (see Appendix 4).**

## Safe access to the roof

29 Safe access to a work area requires careful planning, particularly where work progresses along the roof. Typical methods to access roofs are:

- general access scaffolds;
- stair towers;
- fixed or mobile scaffold towers;
- mobile access equipment;
- ladders; and
- roof access hatches.

More detailed advice on the selection and use of access equipment is given in *Health and safety in construction* HSG150.

### General access scaffolds

30 A general access scaffold can provide safe access to roof level and a working platform around the edge of the roof, as well as providing space to store materials. Often, a loading bay can be erected and can help materials handling on the roof.

31 You should follow this good practice when using scaffolds:

- scaffolds should be designed, erected, altered and dismantled only by competent people and the work should be carried out under the direction of a competent supervisor;
- scaffolds should never be erected or dismantled over people or busy pavements. If the work presents a danger to the public you should apply for a road or pavement closure to eliminate the risk of a member of the public being injured. If this is not granted, erection and dismantling should be done inside a segregated area and during times when there are fewer members of the public in the vicinity;



**A managing director, aged 54, was killed when he fell through a fragile roof light panel as he was inspecting some repair work that had been completed on his premises roof.**

**88 Remember that all roof work is potentially dangerous, however short-lived.**

### Refurbishment and re-roofing

89 Roof refurbishment can be complex, is always high risk and demands careful planning – a high proportion of accidents occur where this work is being carried out.

- On any refurbishment or re-roofing job, all surfaces should be treated as fragile unless a competent person has confirmed otherwise (see Appendix 4).
- The precautions to prevent people falling through fragile parts of the roof should be clearly identified. They do not have to be complex but must be effective. The Work at Height Regulations 2005 require that no person at work should pass across or near or work on, from or near a fragile surface where it is reasonably practicable to carry out the work safely without them doing so.

90 To prevent accidents occurring:

- close liaison with the client will be necessary where premises remain occupied during refurbishment;
- a structural survey may be required to confirm the strength or stability of roof members; and
- a risk assessment should be carried out when deciding whether to refurbish or replace fragile roof coverings. For example, the decision on whether to clean and seal or replace an existing asbestos fibre cement roof should take into account the additional risks from work at height, exposure to asbestos fibres and cost of future maintenance (see paragraph 256). Where cleaning is being planned, consider whether it is necessary – is it only being carried out for aesthetic reasons? If it is required, you must use a safe system (see paragraphs 183–198).

### Ancillary works

91 There are many ancillary tasks carried out on roofs other than roof work, in particular, fitting or adjusting television aerials or solar panels to buildings. Anyone carrying out these tasks should have received relevant training for working at height on roofs to ensure their safety.

92 The Confederation of Aerial Industries Ltd has produced health and safety guidance and a code of practice for installation in the aerial and satellite industries.<sup>10</sup>

### Maintenance and cleaning

93 Many accidents occur during maintenance and cleaning of roofs. Often little attention is paid to this short-term, low-value work. It is often done by people with no experience in work at height and often takes place on older roofs where extra care must be taken.

**A casual worker, aged 23, was killed when he fell through a fragile roof light on an asbestos roof. He was power washing the roof of a farm building and stepped off one of the boards he was using as a work area on to the fragile roof light.**

94 A high proportion of deaths are caused by falls through fragile materials, as in the example above. Any work on fragile roofs, however trivial it may seem, should be carefully assessed, planned and supervised.

95 People on roofs should also be competent to carry out the work. If introducing inexperienced workers, give them formal training on health and safety (specifically including the hazards associated with roofing, eg fragile materials, weather conditions, roof lights, and personal protective equipment they are required to use) before they go onto a roof and make sure they always work in an area where the supervisor can see them and speak to them.

**96 Never allow inexperienced people to work on roofs unsupervised (see paragraphs 300–315 for more information).**

97 Factors to take into account when assessing the risk include:

- roof lights, which may have been obscured by paint, debris or vegetation;
- any repairs carried out in the past, especially if fragile roof sheets have been used for 'patching' an otherwise non-fragile roof. Such practices are highly dangerous;
- metal roof sheets, which may have deteriorated with age and become fragile;
- wood wool slabs, which may have been weakened by water damage; and
- safety systems that have been installed have been inspected and are ready for use.

For more information on fragile roofs see paragraphs 166–198.

98 A full survey, together with local knowledge, will help to identify such problems. In case of doubt, the roof should be treated as fragile. The precautions described for working on or near fragile materials should be rigorously followed whatever the size of the job.



**Figure 12** Powered access for inspecting a large fragile roof



### Roof cleaning

99 A typical example of cleaning on a roof is cleaning valley gutters on an asbestos cement roof or a roof containing fragile roof lights.

100 There are systems available that provide long-term protection for these regular operations, and you should consider them for existing roofs (see Figure 32). The alternative is to provide extensive temporary protection for each operation. This can be less cost-effective and requires rigorous supervision. Figures 13 and 14 show safe ways to both inspect and carry out some cleaning activities on fragile roofs.



**Figure 13** Valley walker used during gutter cleaning. This provides a protective mesh covering to either side of the operative, which moves progressively along the roof as the worker moves forward. The protective covering eliminates the risk of a fall through the fragile material (Image courtesy of Safesite Limited)



**Figure 14** Access system for short-term maintenance work on a fragile roof

**A foreman was cleaning cement dust, which had spilled from a silo vent, when he fell 3.5 m through an asbestos cement roof. He was walking down the valley gutter, which was 300 mm wide. No protection had been provided for fragile material and no other precautions were taken to prevent falls. He died from head injuries.**

### Stripping and dismantling roofs

101 Stripping roofs to reclaim various roofing materials during demolition has often involved unsafe practices. An independent scaffold should be provided at eaves level to all elevations; this gives safe access to the roof and room for storage of materials. Inform the scaffolding contractor of the intended loading and take care not to exceed this. You may need to give specific guidance to site supervisors on the maximum number of tiles or slates per scaffold bay.

102 Timber battens deteriorate with age. Do not use them as footholds unless they have been inspected by a competent person who has confirmed that they are strong enough. If in doubt, regard them as fragile.

103 Never use timber battens as anchorage points for harnesses.



## Fragile roofs

166 Falls through fragile surfaces account for 22% of all the fatal accidents which result from a fall from height in the construction industry. However, deaths caused by falls through fragile surfaces don't just occur in the construction industry; those working in the maintenance sector are also affected and this involves a whole range of fragile surfaces.

167 The terms 'fragility' and 'fragile surfaces' are used in this book to describe roof assemblies that will not safely support the weight of a person and any materials they may be carrying.

168 The test to show non-fragility for a roofing assembly has been drawn up by the Advisory Committee for Roofsafety (ACR) and is published in *Test for non-fragility of roofing assemblies*.<sup>16</sup> The test is discussed in greater detail in Appendix 4.

169 All designers and contractors should make sure that any non-fragile roof assemblies they design or fix have been tested in accordance with the above standard and are classified non-fragile Class 'C' as a minimum for low-maintenance roofs, and Class 'B' for medium-maintenance roofs. Refer to the ACR best-practice guide *Recommended practice for work on profiled sheeted roofs*<sup>17</sup> for more information.

**170 Whatever roofing assembly has been specified, all non-fragile roofs will deteriorate with time and at some point the assembly will become fragile. All roofs, once fixed, should be treated as fragile until a competent person has confirmed that they are non-fragile.**

171 In particular, the following are likely to be fragile:

- old roof lights;
- old liner panels on built-up sheeted roofs;
- non-reinforced fibre cement sheets;
- corroded metal sheets, either as the primary waterproofing system or as the structural deck supporting a membrane roofing system;
- glass (including wired glass);
- rotted chipboard or similar;
- wood wool slabs; and
- slates and tiles.

172 Falls through fragile materials are a particular problem in both the roof work and building maintenance sectors. Everyone with responsibility for this type of work, at whatever level, should treat falls as a priority. This is particularly important for small, short-term maintenance and cleaning jobs. See ACR guidance note *Safe working on fragile roofs*.<sup>18</sup>

**A 60-year-old employee was killed when he fell through a fragile roof as he was helping to install a ventilation duct for a spray booth.**

**A self-employed builder, aged 52, fell while he was trying to repair damage to the asbestos cement roof of an industrial unit. He fell through a fragile roof light.**

**173 Fragile roof accidents are not inevitable. They can be prevented by careful planning, using suitable equipment and employing a high level of supervision.**

174 If possible, arrange the work to avoid working on or passing near fragile material. If this is unavoidable, you should identify all fragile materials and put precautions in place to prevent or minimise the effects of a fall. This applies to all operations on the roof, whether construction, maintenance, repair, cleaning or demolition.

175 The hierarchy for work on fragile roofs is:

- work from underneath the roof using a suitable work platform;
- where this is not possible, consider using a MEWP that allows people to work from within the MEWP basket without standing on the roof itself;
- if access onto the fragile roof cannot be avoided, perimeter edge protection should be installed and staging used to spread the load. Unless all the work and access is on staging or platforms that are fitted with guard rails, safety nets should be installed underneath the roof or a harness system used; and
- where harnesses are used they need adequate anchorage points. They also rely on discipline, training and supervision to make sure that they are used consistently and correctly.

176 Some roof coverings can give a false sense of security to those who are working on or passing by them. They may be capable of carrying some distributed load, giving the impression that they can bear a person's weight, but they might not carry a concentrated load, eg the heel of someone walking or someone stumbling and falling. A stumble may cause the roof to fail instantly like a trap door. For example, asbestos cement and other non-reinforced fibre cement sheeting are liable to shatter without warning under a stumble. They will also become more brittle with age.

177 A common but fatal belief persists that it is safe to walk along the line of the roof bolts above the purlins. In practice this could be the weakest part of the roof:

- some roofing sheets (eg roof lights, asbestos cement and fibre cement) have their weakest point of impact within 150 mm of the purlin line since the purlin provides an edge to tear the sheets; and
- on occasion, the original sheets are of a length so that the sheet end overlap does not coincide with the purlin line. When this occurs, and to avoid end lap leaking, the end laps are stitched together using simple bolts. To the unwary, this appears to be the line of a purlin, when in fact there is no support underneath at all.

178 So walking the purlins is walking a tightrope: one false step or loss of balance can lead to disaster. Do not assume that double-skin roofs are safe – each layer can fail independently.

179 Roof lights discolour with age. They may have been painted to reduce glare, making them difficult to identify. In some cases, insulation may have been applied externally to a roof that is generally load bearing but contains fragile roof lights; this can obscure the roof lights. Roof surveyors should look for signs of repair etc (see Figure 30).

**A labourer cleaning a gutter was seriously injured when he fell 9 m after stepping onto a roof light.**



180 If any material is applied that may disguise fragile parts of a roof, the fragile parts should be clearly marked and the information recorded. It should be included in any health and safety file for the building or any permit-to-work system for the roof. Warning notices should be erected at all access points (see paragraphs 197–198).

181 Wood wool slabs may fracture beneath someone's weight. You should treat the following as fragile:

- wood wool slabs less than 75 mm thick without a nylon net reinforcement;
- wood wool slabs with a nylon net reinforcement but less than 50 mm thick;
- wood wool slabs that are wet or previously damaged;
- all straw boards, but especially those affected by water; and
- all slabs where it is not possible to determine either their condition or the specific type that has been used.

182 In some situations the structure supporting the roof covering may deteriorate so much that the roof becomes 'fragile' and could fail catastrophically. In such a situation a thorough survey is essential.

### **Preventing falls through fragile material**

183 Carefully consider whether the task warrants the risk involved in working at height on a fragile roof assembly. Can the work be avoided? Or can you provide a better job and longer-term solution by:

- over-roofing or re-roofing with a non-fragile assembly, instead of multiple repairs that may fail in the short term;
- replacing sheets, instead of using patch repairs; or
- where practical, replacing roof lights from below, using a proprietary replacement and fixing system.

184 Always make sure that the workers carrying out the tasks on the fragile roof are adequately supervised and trained, understand and follow the method statement they will be working to and have a thorough knowledge of the materials, equipment and tools they will be using.

185 A safe working platform on the roof and safe access to the working position must be provided when working on fragile roofs:

- platforms or coverings spanning the purlins must be provided and used to support the weight of anyone on the fragile material; and
- guard rails or coverings are required to prevent someone who is passing or working near fragile material from falling through.



**Figure 30** In some light conditions, it is difficult to distinguish the roof lights from the metal sheets on this type of roof. The valley gutter is very narrow and roof lights extend down to gutter level. Both of these features increase the risk during cleaning, maintenance or refurbishment

186 The platforms or covering must be adequately secured against slippage.

187 Boundaries can be established identifying 'safe' areas containing the workplace and routes to and from it. If these are used:

- the boundary should be at least 2 m from the nearest fragile material;
- the boundary does not need to comply with full edge protection standards, but there should be a continuous physical barrier (a painted line or bunting is not acceptable); and
- tight discipline is essential to make sure that everyone stays within the safe area at all times.

188 Stagings of a suitable and sufficient width fitted with guard rails meeting the standard in paragraph 121 can be used where the roof pitch permits. The roof structure needs to be strong enough to take the combined weight of the staging, guard rails, workers and any materials or equipment used. There should be enough stagings available to allow the work to be carried out safely. Workers should not have to move stagings continually to progress over the roof. Stagings should also be long enough to provide adequate support across roof members. They should span across at least two purlins.

189 In most situations additional measures (usually in the form of fall arrest such as safety nets or harnesses and running line systems) are required to protect those using trolley systems from falling through a gap created when replacing an old sheet or roof light.

190 Where it is not practicable to maintain guard rails on both sides of the staging, other collective fall protection measures will be required, eg:

- birdcage scaffolds;
- MEWPs;
- mobile towers or scaffold used as a crash deck;
- safety nets (as long as there is adequate clearance below) (see Figure 31); and
- a soft landing system.

These give the most freedom to workers on the roof and can protect people working below, such as during a refurbishment project, particularly if debris netting is also used (see Appendix 2).

191 Harness and line systems can also form part of the system of work but they are lower down the hierarchy for work at height as they rely on operator training and a high level of supervision. The quality of the attachment system is critical. There are also minimum heights below which the system will be ineffective; in this case, someone may hit the floor before the restraint is fully operational. See Appendix 3 for further guidance.



**Figure 31** Safety netting used to provide protection for roof lights during minor roof works



**Figure 33** Typical fragile material warning sign



### Profiled sheeting

199 This section deals with all roof work that uses large-element profiled sheeting, which typically will be industrial, large retail, commercial, sports complex and agricultural buildings.

200 The roofing system will generally be on a pitched roof of the following typical construction:

- built-up on-site assembly of liner, insulation and outer sheet;
- factory-assembled composite panel and laid as single unit; or
- single-skin application for unheated buildings.

201 The large-element sheeting will be fixed to steel or timber purlins.

202 Properly erected safety nets should be the preferred solution in conjunction with edge protection around the perimeter of the roof. When using nets, additional leading edge protection (this is not edge protection on the perimeter of the building – it is protection at the moving edge of the work area) will not normally be required.

### Design issues

203 Designers need to consider the following three factors which will influence safety during construction, maintenance and demolition phases of profile sheet roofs:

- **non-fragility:** most industrial-grade profiled sheets, including roof lights, are now available to achieve a non-fragile status when installed. Designers should make sure that such specifications are followed during procurement and construction. A reduction in the thickness of the profiled sheeting, to save on cost, may result in a non-fragile specification becoming a fragile construction;
- **longevity:** whatever roofing assembly has been specified, all non-fragile roofs will deteriorate with time, and at some point the assembly will become fragile. Designers should therefore determine the design life of the roof and specify the roofing materials that will provide non-fragility for this period. Such information must be included in the health and safety file for the building. Environmental issues may also affect longevity;
- **material weight:** with an increasing need to provide better-insulated and more airtight buildings there is a growing need for thicker, longer and therefore heavier roof panels. Designers must consider the safety issues with handling the materials that they specify.

### Systems of work

204 Falls from profiled sheeted roofs commonly occur:

- through roofing that is or has become fragile;
- through gaps in partially completed roofs;
- through lining panels that were not designed to be non-fragile as a single underlay;

- prepare clear, simple safety method statements that can be used and understood by site workers.

312 First-line supervisors need to be able to interpret a safety method statement and explain and follow a safe system of work.

313 Managers and supervisors who control roof work require specific training. For example, the Construction Skills 'Site Management Safety Training Scheme' five-day course for site managers, or the two-day 'Site Supervisors' Safety Training Scheme', or equivalent courses.

314 Everyone who uses personal protective equipment should know how to use it effectively, eg:

- how to inspect the equipment to make sure that it will operate satisfactorily (see *Inspecting fall arrest equipment made from webbing or rope* INDG367<sup>24</sup>);
- how to fit and use a safety harness, following the manufacturer's recommendations; and
- how to check the face fit of a respirator or dust mask.

315 Every contractor carrying out roof work needs to make sure that a named individual is responsible for the health and safety functions. The named individual may need extra training in health and safety to meet their responsibilities properly. Contractors also need to have access to competent advice.

## Construction (Design and Management) Regulations 2007

316 This section describes what clients, co-ordinators, principal contractors and contractors need to do to comply with the Construction (Design and Management) Regulations 2007 (CDM).

### The role of the client

317 Those who own, occupy or have responsibility for a building have an important role to play when arranging for roof work to be done. This includes considering the design and specification of a new building, appointing a contractor for refurbishment, or organising for an emergency repair.

318 CDM applies to all construction projects, with the exception of domestic clients. If you appoint someone for a project, you should take reasonable steps to make sure that they are competent for the job they are to do.

319 Assessment of competence is a two-stage process:

**Stage 1:** Assess the company's organisation and arrangements for health and safety to determine whether they enable them to do the work safely and without risk.

**Stage 2:** Assess the company's experience and track record to establish that it is capable of doing the work safely.



A set of core criteria for assessing competence are given in Appendix 4 of *Managing health and safety in construction* L144. Stage 1 and 2 assessments should be made against these criteria.

320 The client should make sure that relevant pre-construction information is provided to those who need it, so that work can be carried out safely. This could include information on:

- what an existing roof is made of;
- the age of an existing roof;
- previous modifications to an existing roof;
- existing arrangements for access to the roof;
- restrictions on availability of space for cranes;
- any relevant permit-to-work arrangements operated by the client;
- fire precautions on an occupied site; and
- areas where contractor access is prohibited.

321 Where a project is notifiable (ie where the client is not a domestic client, and the construction phase will last more than 30 days or more than 500 person days), the client must appoint a CDM co-ordinator and a principal contractor. The co-ordinator should act as the client's key advisor for health and safety matters so it is important that the co-ordinator be appointed as soon as possible.

322 There are no duties placed on domestic clients. However, other clients should take reasonable steps to make sure that the contractor's arrangements for managing the project allow the work to be carried out without risks to health and safety. (If the project is notifiable this will include a construction phase plan by the principal contractor.) There should also be suitable arrangements for the welfare of construction workers (toilet, washing and rest facilities).

323 If clients dictate the design details (eg that specific materials will be used) then the client should comply with the duties placed on designers by CDM (see paragraphs 326–349).

324 Unrealistic building or refurbishment programmes can lead to undue pressure on those carrying out the work. This can make it harder for contractors to plan for safe working, to prepare quality safety method statements and to review and amend systems of work. Clients have an important role here – they must not place unreasonable demands on the project.

325 Under CDM, clients have a role to play in construction work including roof work. They must:

- provide enough time and resource to allow the project to be delivered safely;
- take reasonable steps to make sure that management arrangements, including their own, are suitable so that construction work can be carried out without risk to health and safety so far as is reasonably practicable;
- make sure that welfare facilities are provided on the site;
- the structure that has been designed complies with the Workplace (Health, Safety and Welfare) Regulations 1992;<sup>25</sup>
- provide pre-construction information about the project to interested parties. This should be project-specific health and safety information and be provided to designers and contractors at an early stage;
- check the competence of those whom they appoint;
- co-operate; and
- co-ordinate their activities.

- information from the designer on sequence of erection, temporary stability and bracing of trussed roofs;
- presence of asbestos insulation board in soffits;
- presence of sprayed asbestos on trusses or purlins;
- position and type of overhead power lines, including those associated with railways; and
- information on the design of fixing details necessary to ensure non-fragility.

### **Principal contractors**

355 Principal contractors set the practical on-site safety standards and make sure that they are actually followed. They should:

- make sure that those they appoint are competent for the type of work;
- make sure that the overall work programme gives enough time for work to be done safely by the roofing subcontractor, taking account of likely weather conditions;
- allow time to consider method statements and liaise with the CDM co-ordinator on the implications of design changes;
- devise a work programme that reflects the need to control access to areas below roof work where there is danger of falling materials;
- clearly specify at the tender stage the resources allocated to control and manage risks such as falls from height; and
- make sure that relevant information is passed to the roofing contractor.

356 Principal contractors need to make sure that a suitable construction phase plan is in place before construction starts. The plan should state how health and safety will be managed during the construction phase, identify risks specific to the type of work, and include suitable and sufficient measures to address the risks, including any site rules. Any work at height is potentially high risk, so the plan should include enough detail for the risks to be controlled.

357 The principal contractor may require contractors to submit written safety method statements. The method statements can help the principal contractor assess the contractor's competence, and can help plan and co-ordinate work on site to minimise risks to health and safety for all site workers. Where written safety method statements are submitted, the principal contractor should have arrangements to review and approve them.

358 Principal contractors need to monitor contractors to make sure they comply with the construction phase health and safety plan and should take positive action to remedy matters if risk is not being effectively controlled.

### **Contractors and subcontractors**

359 Contractors need to:

- implement a safe system of work. A site-specific safety method statement can help with this;
- make sure that they and their employees are competent to carry out their specific tasks safely, including supervision on site; and
- co-operate with the principal contractor, and help develop and implement the construction phase plan.