



Glass and Glazing Federation

Code *of Practice*

**Window
Installation
Safety**

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Window Installation Safety Code of Practice

- 1. Introduction and General Duties**
- 2. Specific Responsibilities under the Health and Safety at Work Act**
 - 2.1 Employer
 - 2.2 Employee
 - 2.3 To the customer
 - 2.4 Training
- 3. Hazards to be aware of**
 - 3.1 Handling Glass
 - 3.2 Removing Windows
 - 3.3 Lowering Materials
 - 3.4 Working at Heights
 - 3.5 Storage of Materials on Site
 - 3.6 Use of Power Tools – 110v
 - 3.7 Use of Hand Tools
 - 3.8 Care with Chemicals, Solvents, Flammable Liquids
 - 3.9 Asbestos – Identification and General Working
 - 3.10 Slips, Trips and Falls
 - 3.11 Correct Lifting Techniques
 - 3.12 Good Housekeeping on Site
 - 3.13 Personal Protective Equipment
 - 3.14 Waste Management
 - 3.15 Noise
 - 3.16 Access Routes
 - 3.17 First Aid
 - 3.18 Reporting of Accidents

Window Installation Safety Code of Practice

I. Introduction and General Duties

I.1 Introduction

This Code of Practice has been drawn up by the Glass and Glazing Federation to provide guidance of recommended best practice in the safe installation of windows. It addresses the general duties placed upon both employer and employee by the Health and Safety at Work Act 1974 and the more specific requirements of other relevant Acts and Regulations in being.

Adherence to this Code may be seen to demonstrate current best industry practice in meeting proper safety standards, irrespective of size, content or duration of proposed works.

I.2 General Duties

Employers must as far as is reasonably practicable safeguard the health, safety and welfare of their employees. The duty of care also extends to others e.g. visitors. Employees must take reasonable care of their own health and safety and that of others who may be affected by their acts or omissions. There is the added difficulty in normal circumstances of deciding what constitutes an “employee”. The views of the Health and Safety Executive may not always be similar to the Inland Revenue. If in doubt it is always wise to consider that a worker is an employee for health and safety matters.

2. Specific Responsibilities

The HASAWA details non specific duties to be complied with as far as is reasonably practicable both by the employer and employee. **Failure to comply with the Act can result in legal action being taken.**

2.1 The Employer’s Responsibilities

- 2.1.1 Provide and maintain plant and systems of work that are safe and present minimal risk to health and safety.
- 2.1.2 Ensure the safety and minimisation of risks to health during installation, handling, storage and transport of articles and substances.
- 2.1.3 Provide information, with consultation and undertake instruction, training and supervision for the workforce.
- 2.1.4 Provide and maintain safe means of access and egress (entrance and exit routes) in the workplace.
- 2.1.5 Provide adequate facilities for welfare at work.
- 2.1.6 Provide Personal Protection Equipment (PPE) as designated by the risk assessments having considered all other control measures.

2.2 The Employee's Responsibilities

- 2.2.1 Take reasonable care for the Health and Safety of himself/herself and others, to prevent injury to any who may be affected by his/her acts or omissions at work.
- 2.2.2 Co-operate with his/her Employer/Supervisor, as far as is necessary in the performance of tasks.
- 2.2.3 Ensure that no intentional or reckless interference or misuse of anything provided in the interests of Health and Safety is carried out.

2.3 Responsibilities to the Customer

- 2.3.1 At all times, care must be taken to ensure that householders/members of the public are not exposed to any form of hazards generated during any works controlled by the company. The use of signs and barriers should be considered as a minimum requirement. In addition householders should be requested to keep themselves and especially children clear of the area.

When glass is stored temporarily on domestic premises, it should be covered over and secured if left or the storage area protected to prevent people and especially children from being able to approach it, and the customer advised of the danger.

2.3.2 Clients' Property

The movement of clients' property to gain access to the work area should be avoided, particularly heavy or fragile items. The installer should request the client, where reasonable, to move items to allow safe access to the work area. All waste, particularly broken glass, should be cleared from the work area regularly at the end of the day, and the property left in a clean and tidy condition.

2.4 Training

Understanding and compliance with Statutory Regulations and Company Rules regarding Health and Safety can only be accomplished by training. This can take the form of induction training for new employees and regular "tool box" talks at the place of work to all employees and workers. All employees and workers must be notified of the workplace hazards and given adequate instructions for the supplied P.P.E.

In addition to health and safety training there is a need for specialist training for those employees using specialist equipment.

All employees should be trained to the appropriate level of competence for their role in the organisation. Records of this training will provide the company with valuable resources for ongoing improvements.

3. Hazards

3.1 Handling Glass

Glass is a potentially dangerous material. Training must be given to employees who will handle it, for their own safety and that of others working with them or in the vicinity of their work (public, householders, etc.). They should learn how to detect flawed glass, the correct way of lifting and setting down glass, what protective clothing should be worn and the procedures when using various lifting and carrying aids.

3.1.1 Manual Handling

Working on Sites

A risk assessment must be carried out and recorded together with a safe system of work agreed with site personnel prior to work commencing.

The following criteria, over and above the normal storage conditions for glass as noted in 3.1 should be observed.

- (i) Site access is adequate to permit vehicles to approach.
- (ii) Storage position is accessible for delivery and distribution of materials.

- (iii) Bulk glass is safely distributed within premises or on scaffolding within the particular Safe Loading Capacity.
 - (iv) Suitable storage arrangements are made so that the glass is safely positioned and cannot be damaged by others working on site.
 - (v) Storage conditions are dry wherever practicable.
 - (vi) There should be room to manoeuvre the glass safely.
 - (vii) If glass breaks during handling it should be allowed to fall. No attempt should be made to intercept it.
 - (viii) In windy conditions the glass should be tied to prevent it blowing over.
 - (ix) A safe lifting posture must be used as per good manual handling techniques.
 - (x) When lifting, the glass should be kept upright and the movement smooth to avoid undue flexing.
 - (xi) The floor should be cleared of obstacles, and slippery areas avoided.
 - (xii) The correct protective clothing for the job as determined by company policies and/or risk assessments must be worn.
 - (xiii) Loads must be kept within the manageable capacity of those handling them.
- 3.1.1.1 **Straps or Slings** – Usually made of leather or plastic with timber handles at each end. They are used for handling large sizes of glass, with the slings passed under the bottom edge of the glass so that operators can share the weight of the load. Special care must be taken to support the top of tall plates.
 - 3.1.1.2 **Webbing lifts** – Usually cut to suitable length from 75mm – 100mm wide woven webbing. Used as slings when glazing shopfront plates. The flatness of the webbing allows it to be withdrawn from beneath the plate supported on its setting blocks.
 - 3.1.1.3 **Suction Pads (Josters)** – Two or three rubber pads per frame are placed on the surface of the glass and fixed by operating a small lever. When these are used in a lengthy operation it is recommended that they be released and refixed at frequent intervals. The surface of the glass must be clean and dry.

3.2 Removing Windows

Prior to any works commencing, hazards must be identified and the risk of accident/injury assessed by installers, and care taken to prevent or minimise such risks. The following paragraphs highlight the type of areas to be considered and the actions to be taken, although such a check list is not exhaustive.

- 3.2.1 The size of opening must be assessed with reference to the size and shape of the unit to be removed, and the number of installers to be utilised to ensure a safe system of work.
- 3.2.2 The type of unit, eg wood frame, metal frame, number of vents, etc must be assessed, and all identified components removed to reduce weight and increase the ease of handling. Where possible, glass should be removed.
- 3.2.3 The amount of working space must be assessed, and furniture, etc moved where possible to ensure that access to the frame can be safely achieved.
- 3.2.4 The internal sill height must be noted, to ensure that adequate protection from falling is maintained after frame removal. Any sill with a height below 910mm from the floor must be treated with extreme caution to prevent over balancing.
- 3.2.5 The area immediately below the opening must be barriered, or signs erected, and customers requested to remain clear of the area to prevent any injuries in the event of debris falling.
- 3.2.6 During removal of frames, and subsequent disposal of debris, Personal Protective Equipment (PPE) must be worn. Normal handling should include safety footwear, wrist guards and gloves. In addition, where operations such as breaking of glass or drilling are in progress, safety goggles for eye protection must be worn.

- 3.2.7 All debris must be controlled during lowering or carrying to the ground, not dropped or thrown.
- 3.2.8 No procedures must be attempted which would require installers to lean excessively out of the openings or balance on sills without protection. In such situations access equipment should be used.
- 3.2.9 If external access onto porch or sloping roof areas is necessary, access equipment such as Easi-Dec Dormer Extensions, roof ladders, etc, should be used, if practicable, in preference to any other method.
- 3.2.10 During frame removal, the use of the frame as a lever to assist in the breakage of fixings should not be attempted. This procedure can lead to a sudden release of the frame
- 3.2.11 Replacement frames and units should be fitted as soon as practicable, to prevent the opening remaining a hazard to all persons.
- 3.2.12 Replacement frames and units must be handled with care and positioned for fitment using similar techniques as practised during removal to minimise the hazards of falling or the dropping of equipment/materials.

3.3 Lowering Materials

No materials should be thrown or dropped in an uncontrolled manner from height. If ladders are used, excessive weights should not be carried down them. Heavy frames should be carried out through the property or lowered using ropes and pulleys.

If waste chutes have been fitted to scaffolding, care must be taken if glass is allowed to fall down the chute in case shards fly out of the skip.

3.4 Working at Heights

3.4.1 General

Activities involving working at heights will require a specific risk assessment carried out by a competent person to determine the most appropriate access equipment to remove or reduce risk to the lowest level practicable

- Hazard identification and risk assessment must take place prior to the start of work and where possible the requirement for working at heights should be eliminated
- Persons involved in any work activities must be competent, being fully conversant with all appropriate procedures, work instructions, safe systems of work and manufacturers information. Certification may be required for certain equipment.
- The most suitable, safe and well maintained equipment based on the risk assessment must be selected for the job
- Use ladders only after a full risk assessment has been completed and all other forms of access equipment considered
- Ensure that all work equipment is secured and positioned safely prior to use

All persons working above ground level are warned of the dangers of falling, and of the potential for serious or fatal injury, either to themselves or others, while carrying out works.

During all works at height, safety signs must be placed to provide hazard warning information to any person who could be affected by such works, and barriers erected if appropriate.

All working areas/platforms must be maintained in a clean condition, with debris cleared on a regular basis. Strict attention must be paid at all times to tripping hazards caused by such debris and equipment accessories such as trailing cables, tools etc.

The use of any form of access equipment during inclement weather such as rain, snow, ice, high winds etc increases the danger associated with the hazards. As such, all persons must take such conditions into consideration when assessing the risks involved in working at height, and if such risks are unacceptable, the works must be aborted until environmental conditions improve.

Control Measures

The two main priorities in consideration of your control measures should be :

1. to prevent any person falling a distance likely to cause personal injury;
2. and/or any person being struck by a falling object likely to cause personal injury

These should be regularly reviewed throughout the life of the project to ensure they remain effective and should include the following stages :

Elimination of an activity where possible

Substitution for an alternative activity

Safe Systems of Work evaluation

Personal Protective Equipment maintenance

Safe System of Work

All safe systems of work should be specified, documented and adhered to throughout the life of the project. These may include the following:

Safe Erection, Use and Maintenance of General Access Scaffold & Ladders

Safe Erection, Use and Maintenance of Mobile Work Platforms

Safe Use of Fall Arrest Systems

Working on Fragile Roofs

Equipment

When selecting equipment for working at heights the following should be considered :

Space available on site

Length of project

Required maintenance of equipment

Ground conditions

Access points

Existing structures on site

Amount of weight placed on working platforms

Required erection of equipment

Volume of use

Presence of overhead cables

Materials to working location

Training required

3.4.2 Ladders

Ladders can provide a safe means of access providing:

3.4.2.1 The ladder is serviceable in all respects. Prior to use, all ladders must be examined for defects such as:

- Missing or damaged rungs.
- Cracks to the assembly.
- Damaged feet.
- Serviceability of locking/pulley devices for extensions.

3.4.2.2 All ladders must be of sufficient dimensions and positioned correctly, to allow persons a safe access to the working location without requiring over reaching leading to overbalancing.

- 3.4.2.3 All ladders must be footed or tied during use. This can be by use of suitable proprietary stabilisers.

Note: The practice of spiking rungs into soft ground is permitted providing such spikes do not exceed a depth of 200mm, due to the possibility of striking underground mains services.

- 3.4.2.4 Ladders must form an angle of approximately 75° to the horizontal. This equates to the HSE guidance on ladders, recommending that the base extends outwards approximately 1 metre for every 4 metres of ladder height. Such an angle minimises the potential for slippage when in use.
- 3.4.2.5 Extreme care must be taken to maintain a firm hold on the ladder when climbing, working on or descending.
- 3.4.2.6 Where practicable, ladders should only be used to provide access to differing levels of work, or for light working such as cleaning, finishing, or light repairs.
- 3.4.2.7 Metal ladders must not be carried upright, or used, when in the direct vicinity of overhead power cables. Such handling can lead to an electrical discharge, especially in damp or wet conditions, which can result in a severe or fatal electric shock to the user, being transmitted through the ladder.

3.4.3 Mobile Towers

- 3.4.3.1 All mobile towers must be erected as shown in the Manufacturers/Suppliers instructions, by a Competent Person.
- 3.4.3.2 The equipment must be examined for defects or damage prior to assembly, and any defective components replaced prior to use.
- 3.4.3.3 The maximum platform height of the tower must not exceed 3 times the minimum base measurement eg: tower length 1.5 metres, width 1.0 metres, maximum platform height – 3 metres.
- When used externally in conditions where more than light winds are experienced, the maximum height is reduced to 2 times the minimum base measurement ie: 2 metres platform height in the example shown above.
- Note:* The minimum base measurement can be increased to gain additional height by fitting proprietary outriggers or stabilisers to the base section of the assembly.
- 3.4.3.4 The tower must be erected on a firm, flat base capable of supporting the combined weight of the assembly, personnel, tools, materials, and equipment. The S.W.L (Safe Working Load) for the tower should be marked on the framework, for the user identification. Where any doubt as to the stability exists eg: on a grassed area or loose surface, scaffold or similar boards must be placed under the base/stabilisers/outriggers to secure and spread the load.
- 3.4.3.5 For enhanced safety, the mobile tower should be physically tied into the property, where practicable, and at all times when the required height/base rate cannot be achieved due to lack of ground space for the fitting of outriggers/stabilisers. The use of strong chains, wire cable or tubing attached to Hilti bolt connections, or the fitting of tubing into reveals, is recommended in such instances. At no time must fixings such as ropes be attached to downpipes or similar weak structures.
- 3.4.3.6 Equipment such as gin wheels or pulleys must not be fitted to the platform to lift or lower loads due to the risk of the tower toppling or tubing breakage. The light alloy construction is not designed for the fitting of such items.
- 3.4.3.7 Wheels fitted to mobile towers must be locked in position prior to use. During movement between locations, all equipment/materials must be removed from the platform. In addition, no personnel must remain on the platform during such movement.

- 3.4.3.8 Access ladders to the working platform must be attached to the inside face of the tower assembly and must provide safe access to the platform by use of a trap door where possible. Such trap doors must always be closed when working on the platform. If a half platform is in use, a safety rail must be fitted, with toe-board, to prevent falling from the inside of the platform.

3.4.4 Traditional Scaffolding

- 3.4.4.1 All traditional fixed pole scaffolding must be erected by a Competent Person, and prior to use a signed hand-over certificate must be issued confirming that the equipment has been erected in accordance with Construction Regulations legislation and is safe to use.
- 3.4.4.2 Weekly inspections of the equipment must be carried out to ensure that the scaffold is safe to use, and such inspections certificated in the F91 Scaffold Register by a competent person.

Note: Such a Competent Person must have been trained in scaffold inspection, and hold the required certification.

- 3.4.4.3 All users must carry out additional inspections on the equipment on a daily basis before use. The inspection should include visual examination for:
- Stability and serviceability of all fixings/tubes/base plate/sole boards.
 - Ladder access/security.
 - Identification of any obvious defect in the general structure.
 - Serviceability of guard rails/toe-boards/platform boards.
- 3.4.4.4 On completion of daily works, base access ladders must be removed to prevent access by non-authorised persons. Base areas should be barriered or fenced at all times to prevent injury through unauthorised access.
- In most instances, the equipment should be contained within the customer's property minimising the action to be taken. However, if general external access is identified, the erection of chestnut pale fencing or security fencing around the base may be warranted.
- 3.4.4.5 Any scaffolding encroaching onto a public road or walkway must only be erected after the issue of a local authority licence authorising such a structure. The fitting of reflective tape and/or lighting up to a height of 2.5 metres on the structure, to provide a hazard identification, is a requirement in such instances. The provision and fitting of such items should be carried out by the supplier, in compliance with the terms of the licence.
- 3.4.4.6 The erection and use of hoists/gin wheels must only be sanctioned when the scaffold is physically tied onto the building.
- 3.4.4.7 Strict attention must be paid at all times to the potential hazards associated with working from scaffolding. The hazards when using such scaffold with other companies/trades increase the risks generated, and all personnel must maintain a high degree of Safety Awareness, especially in terms of housekeeping, the identification of moved or missing platform boards and general working conditions.
- 3.4.4.8 In the event of strong winds, additional mandatory inspections must be carried out on the scaffold equipment and such inspections certified in the F91 Register.

3.4.5 Specialist Equipment

Specialised equipment such as Easi-Dec, Mobile Elevated Working Platforms (MEWP) such as scissor lifts and Mast Working Platforms (MWP) should only be used to the manufacturers specifications and by trained personnel.

3.5 Storage of Materials on Site

3.5.1 Where glass storage on glazing installation sites is unavoidable, particular consideration should be given to the storage area so as not to cause obstructions or introduce unnecessary risks to others and to ensure that the proposed storage area is physically suitable. On construction sites the approval of the Principal Contractor will be necessary. As a minimum the following should be observed:

- the glass should be placed on edge, approx 3°–5° from vertical.
- timber or similar supports are required to protect the bottom edge of the glass.
- the glass should be restrained to prevent blowing over.
- the glass should be distributed to avoid excessive loading to the floor.

Further details can be found in the Glass Handling, Storage and Transport Code of Practice Para 3.3.

3.5.2 Ensure all portable equipment is locked in containers or removed from site during non working periods. Ensure as far as is practicable, that access by non-authorised persons is prevented to all storage areas.

3.6 Use of Power Tools

3.6.1 Where power tools are used on glazing and installation sites, these should be battery powered or of 110v rating. A centre tapped transformer must be connected between the source and tool to reduce mains supply to the required level. 240v equipment should not be used on construction sites. However, the use of 240v equipment if sanctioned for short term usage must be RCD protected at the source.

3.6.2 Electrical equipment should be inspected and tested as recommended in HSE guidance namely 3 monthly for equipment used on construction sites and 6 monthly for other usage within the industry with appropriate records maintained.

3.6.3 Supply leads must be correctly rated and wired to plugs and tools, free from any insulation breakdown, no bare wires in sight, in a dry condition and free from any form of twists, bends or kinks.

3.6.4 Only battery powered or correctly protected 110v tools should be used in damp/wet conditions.

3.6.5 Leads must be routed clear of walkways/working surfaces to prevent a tripping hazard.

3.6.6 Guards fitted to any tool must never be removed during use. (eg power saws, angle grinders etc.).

3.6.7 No maintenance is to be carried out, including the replacement of grinder discs (only by certified competent person), blades and drills, unless the power source has been disconnected.

Note: Switching off the power is not enough.

3.6.8 No power tools should be left unattended when switched on and should only be used in accordance with the purpose for which they were intended.

3.6.9 Power tools not in use must be removed from the working area and secured in a safe area.

3.6.10 Power tools must be maintained in a safe condition and any suspected faults must be reported to the Site Supervisor.

3.7 Use of Hand Tools

3.7.1 All cutting tools, eg. chisels (wood and cold), saws, knives, files, etc., must be sharp and free from chips, cracks, burrs and corrosion.

3.7.2 Striking faces for all hammers, chisels and similar tools must be kept polished and clean. No cracks, chips, burrs, corrosion, or similar defects, are permitted.

- 3.7.3 Tools not in use are to be stowed in tool-boxes/tool-rolls, or in a safe location away from the immediate working area.
- 3.7.4 Screwdrivers are only to be used for the correct task, using the correct size at all times. They are **not** to be used as chisels, punches, scribers, tin-openers, paint stirrers, or for similar acts of misuse.
- 3.7.5 Other miscellaneous tools must only be used for the task they have been designed for.
- 3.7.6 Never use the tool facing towards any part of the body, unless designed for use in this way.

3.8 Care with Chemicals, Solvents and Flammable Liquids

Chemical Substances Hazardous to Health are found in all forms of adhesive, sealing compounds, solvents, lubricants, and as fume, dust, and vapour generated during various processes. Before any item is used in this respect, the information issued on the material safety data sheets must be read and a COSHH assessment carried out. Relevant information and training should be given to employees and workers. Additionally, all containers are marked with codes showing the nature of the hazard, i.e. IRRITANT, and also, the preventive steps to take to minimise risks.

This can include information on Protective Clothing, Hygiene, Ventilation and actions to be taken in emergencies if spilt, in contact with skin, eyes, swallowed, etc. **On no account must any substance be used that cannot be fully identified** – return to the supplier and obtain a recognisable container. Guidelines for use of Chemical Substances are as follows:

- 3.8.1 Ensure all chemicals are stored securely on shelves in a specified materials container.
- 3.8.2 Ensure that when opening, using, or closing the container, precautions are taken as stated on labels and MSD Sheets.
- 3.8.3 Remember that brushes, applicators, cleaning rags, etc, once contaminated, are as potentially dangerous as the substance container. This should be remembered when tempted to wipe hands or face with rag, or when misuse of tools exposes others unaware of contamination.
- 3.8.4 Volatile substances can cause fumes to build up rapidly in confined spaces. Unconsciousness and possible death can result from inadequate ventilation. Smoking is prohibited in a contaminated area.
- 3.8.5 Barrier cream must be used to protect the hands. However, its use is very limited and to gain full protection, gloves **MUST** be worn. Before eating, drinking, or smoking, hands must be washed to remove all traces of the substance.
- 3.8.6 On no account should there be any form of unprotected hand/mouth contact with the substances, directly or indirectly (eg. smoking etc.).
- 3.8.7 An eyewash facility should always be available on site, either cold, fresh, running water, or a recommended eye bath.
- 3.8.8 In the event of eye injury through contamination, First Aid should only consist of irrigation with eyewash/water and immediate medical assistance is to be obtained.
- 3.8.9 Disposal of substances/empty containers/aerosols, etc, must be controlled, due to the potential danger. All items must be securely bagged or boxed, labelled, and disposed of into scrap skips or bins unless site instructions include the facility for Hazardous Waste disposal. Do not leave any substance lying around where it can cause a hazard, especially to children.
- 3.8.10 It is forbidden to grind PVC-u with power grinders due to the toxic fume generated.
- 3.8.11 Ensure all flammable substances are stored in a secure segregated and ventilated area, and that no means of ignition is present.
- 3.8.12 Ensure necessary safety signs (Flammable Stores) are positioned on the outside of storage containers.
- 3.8.13 Where you can exchange a flammable substance for a less flammable one, do so. If you can eliminate flammable substances from the process altogether, it will make the operation far safer.

3.9 Asbestos – Identification and General Working

3.9.1 Identification

All aspects of asbestos working are subject to The Control of Asbestos at Work Regulations. In practice, the types of asbestos likely to be encountered during Company works are either asbestos cement board (AC) or asbestos insulation board, (AIB) used for sheeting, panels, fascia board and soffits.

Recognition as asbestos related material can only be confirmed by scientific analysis, and many similar materials and items in use contain no asbestos fibre whatsoever.

The structure of the cement board and insulation board is similar, with cement board containing 10–15% asbestos, and insulation board 16–40% asbestos.

The type of asbestos fibre could be chrysotile (white – low risk), amosite (brown – medium risk) or, for old properties, crocidolite (blue – high risk). Both types of board are normally grey in colour, approximately 6 mm – 12 mm thick and brittle. Cement board, due to its high cement content, is easier to break, and insulation board can be dented when a sharp implement is pressed into it.

Note: During all reference to asbestos related materials, cement board and insulation board hazards should not be confused with such extreme hazards evident when working with asbestos lagging materials, as used for pipework, boiler houses and furnaces. These types of lagging materials are virtually 100% asbestos and produce a dangerously high fibre level in the air whenever cut or removed, and such exposure can lead to asbestos related respiratory disease.

3.9.2 Basic Precautions

Sales/Pre-survey Stage

There is a need to ascertain from the householder/property owner as soon as possible if they know of the presence of asbestos.

When was the property built and has asbestos been encountered in the past? Use a visual inspection to check over the areas to be worked on and highlight any suspicions by recording “asbestos may be present” for the surveyor to check and sample if necessary.

Survey Stage

Surveyors are responsible for identifying asbestos and for removing samples for analysis and should be given training to the appropriate level of competence. Where any doubts exist all samples should be treated as asbestos until proven otherwise. Personal protective equipment in the form of an asbestos mask must be worn when taking a sample. This must be a disposable respirator, which complies with EN 149 and with a Personal Protection Factor level 3 (PPF3). The mask should be used only once and disposed of as asbestos waste with the sample.

Where practicable dampen down the area prior to removing the sample. The sample shall be the size of a postage stamp and shall be removed using a core tool sampler or a small set of pliers. The area where the sample has been removed must be cleared up and sealed or taped over where practicable.

The sample shall be double bagged and then placed in a pre-printed envelope (as produced by the company) and posted to the nominated laboratory that uses a United Kingdom Accreditation Services accredited procedure. The surveyor shall annotate the bag with:

- Customer Name
- Customer Job Number
- Other Code Number (as necessary)

Details of local laboratories where samples can be sent can be found by contacting the United Kingdom Accreditation Services Accredited Laboratories. Surveyors responsible for taking asbestos samples need to undertake the necessary training. Guidance on suitable courses will be available from the Asbestos Removal Contractors Association. This needs to cover safety awareness, what precautions and PPE are necessary, how to take the sample and what to do with the sample once taken. Records must be maintained of when training was undertaken and when refresher training will be needed.

Report Stage

When the results are received from the laboratory the householder/property owner should be told what type of asbestos was identified from the results of the laboratory analysis. After consultation, agreement must be reached as to whether :

- The customer wants the company to proceed with removal, possibly at an additional cost.
- The customer will arrange for the material to be stripped by a licensed Asbestos Contractor.
- The asbestos is left in situ and enclosed by the new product
- The job is declined

The necessary risk assessment and method of work must be documented and agreed with the team undertaking the job, including the necessary documentation to be completed and personal protective equipment to be worn. Guidance on undertaking risk assessments and producing method statements can be found in the GGF Health and Safety Manual Part I Section 2. Further guidance is also available in HS(G) 227 A comprehensive guide to managing Asbestos in premises, The control of Asbestos at Work Regulations 2002, HSG213 Introduction to Asbestos Essentials.

Installation Stage

The installation of the new product is the stage when the asbestos will be removed.

Installers responsible for removing asbestos cement products need to undertake the necessary training. This needs to cover safety awareness, what precautions and PPE are necessary, how to remove the AC and what to do with it once removed. Records must be maintained of when training was undertaken and when refresher training will be needed. Details of suitable courses will be available from the Asbestos Removal Contractors Association.

Installers must also know how to react when work has commenced assuming no asbestos present and it is then encountered.

- If fitters/installers discover asbestos during an installation they must stop work immediately and report to the client/agent/supervisor/management.
- The area must then be made safe until the analysis results are known. At the same time the householder must be informed of why the action is being taken.

Where the window installation company has decided to complete the removal of any asbestos materials it is essential that the HSE approved code of practice is followed completely.

The list given below illustrates the likely procedures although it is not exhaustive,

- 1 All removal activities must minimise the dust and fibres released
- 2 Water sprays should be used for wetting to reduce the spread of fibre and dust
- 3 All waste materials must be securely sealed at the point of removal
- 4 Disposable dustsheets used on working platforms or on the ground must be disposed of as asbestos waste
- 5 Personal Protective Equipment, P.P.E. must be used at all times when working with asbestos materials, as a minimum,
 - A disposable respirator, which complies with EN 149 and with a Personal Protection Factor level 3 (PPF3). Reference can be made to HSG53 Respiratory protective equipment.
 - Eye protection is to be worn if it is a requirement of the risk assessment.
 - A disposable overall should be worn, which, with the respirator must be disposed of in the last bag of AC waste after both the completion of work and cleaning of site.

- Gloves may be cleaned and reused again if they are cleaned with a damp cloth after use and kept in a sealed container/bag for future similar work.

Care must be taken to minimise and remove any contamination of clothing and particular attention paid to personal hygiene by washing of hands and face after the completion of work and particularly before eating, drinking and smoking,

Installation records are to be annotated with details such as the number of bags, and warning labels are highlighted with job number etc.

To avoid spreading AC contamination, the waste material must be double bagged and securely sealed at the point of removal using strong polythene bags or sheeting and clearly labelled “Warning – contains asbestos”. Where appropriate, use disposable dustsheets on working platforms or the ground and dispose of as asbestos waste.

All debris/dust must be removed by using a type H(BS5415) vacuum cleaner or use alternative cleaning methods such as damped cloths to remove any dust from ledges, sills etc, and dispose with AC in double wrapped sealed polythene bags. Avoid sweeping, which will make the dust airborne.

3.10 Slips, Trips and Falls

3.10.1 Slipping

During wet weather extra care must be taken when climbing and descending ladders and other steps. Also prevent the build up of PVCu swarf and silicone etc on walkways and working platforms.

3.10.2 Tripping

The possibility of tripping can be greatly reduced if the following procedures are followed:

- All debris should be cleared regularly from the working access and storage areas.
- Cables should be routed clear of walkways.
- Tools, materials, window and door units and glass should be stored away from walkways and working areas unless being used.
- Householders should be advised to stay clear of working areas.
- Safety signs should be erected in working areas to highlight the tripping hazard to all persons.

3.10.3 Falling

The falling hazard can be greatly reduced if the following procedures are followed:

- All scaffold equipment working areas where practical must be fenced with 1.5 metre high chestnut fencing (as a minimum requirement) to prevent access by unauthorised personnel.
- When using MWP's all base areas must be fenced with 2 metre high security fencing.
- When using MEWP's where equipment is being constantly moved, Barrier tape, as a minimum, must be placed to identify non-entry zones for unauthorised personnel. Equipment must not be left unattended, to prevent access by children, etc.
- Ensure all scaffold is erected to British Standards, with specific regard to toe-boards, tied-in ladders, end-boards, Hilti-ties and rakers.
- Ensure that ladders are adequately footed, tied and only used for access – **not working from** – unless for short term work as authorised as the result of Risks Assessment and Safe Working Procedures issued.
- Ensure that all scaffold is close boarded. Additional plywood sheeting can be placed on platforms where immediate works are taking place, to further reduce the risk of hazardous debris falling.

- Ensure that working platforms are kept clear of all debris to prevent tripping.
- Ensure that no materials are placed on exposed balconies or propped against safety rails.
- Ensure that MWP/MEWP platforms are fully enclosed by use of mesh guards.
- Ensure that, when used, mobile towers and Easi-Dec equipment is correctly erected and stable at all times. Where outriggers cannot be employed, equipment must be tied into the building using proprietary fittings.
- Check that there is a safe method of getting to and from the work area.

3.11 Correct Lifting Techniques

All points should be covered in a Manual Handling Risk Assessment.

Back injuries, often caused by poor lifting techniques are one of the most common types of serious occupational injury. The correct way to lift is to bend the knees and let your legs, not your back, do the work. Where practicable the loads to be carried should be kept to a minimum and other means of mechanical handling equipment used. Points to be noted are:

- A minimum of 2 personnel must be used to carry units when assessed as hazardous due to weight, size or bulk.
- Where possible, units must be deglazed to reduce weight.
- Suitable hand/foot/wrist protection must be worn during all handling operations. In addition, full clothing must be worn to protect from body cuts and abrasions.
- Periods of rest must be maintained during excessive handling operations.
- If a load appears too big or heavy to carry without strain – seek assistance to lift.
- The use of mechanical hoists for lifting and lowering materials must be instigated on properties above ground level where scaffolding is fitted.

3.12 Good Housekeeping on Site

Housekeeping is the term used to describe those general practices common to all activities undertaken by persons, in keeping the working areas clean and tidy. By planning the work to be done, and ensuring that only the equipment required to be used is brought into the immediate area, the potential hazards are reduced. By then following basic rules, these hazards can be minimised. All employees must ensure that the following procedures are followed to maintain a good standard of Housekeeping:

- Do not leave tools and equipment on floors, ledges, scaffold boards, chairs, tables, etc, when not in use – place in one defined area, away from both the work area and walkways.
- Route power cables overhead, where possible, to reduce the likelihood of tripping hazards. Failing this, ensure that tools using cables are kept to a minimum, cables are separated, and are routed away from busy areas.
- Ensure that bins are placed in the working area for immediate disposal of all forms of rubbish/debris – plastic bags are not sufficient and should NOT be used.
- Ensure Protective Clothing is used when collecting debris.
- Do not work around debris/rubbish – **pick it up** – regardless of who put it there.
- Reduce the amount of debris to a minimum by maintaining good working standards and emptying bins regularly.
- Treat each occupied residence as your own home, and ensure that dust sheets/covers are used. This should include outside areas such as gardens, grass, etc. Any dangerous debris such as glass shards, wood splinters, chemical substances, spent nails, screws, and brick chippings, must be removed totally before leaving the area.

3.13 Personal Protective Equipment

The necessary level of PPE will be decided following the detailed risk assessment for the required task. Suggested requirements are as follows:

- 3.13.1 Eye Protection – irreparable damage can be caused to the eyes if exposed to any form of debris or harmful substance ie flying glass, brick dust, wood splinters or chemicals.

Simple but effective protection can be offered by the current type of safety glasses and/or goggles. Spectacle wearers must obtain prescription safety lenses from their optician which comply with current relevant European standards or use safety over-glasses.
- 3.13.2 Foot Protection – good quality safety boots or shoes with steel toe caps side supports and anti slip, reinforced soles give a high degree of protection and must be worn, (some boots have kevlar inserts).
- 3.13.3 Hand Protection – the correct type of gloves give good protection against broken glass, brickwork and chemical substances. In addition the use of barrier cream ensures such diseases as dermatitis are kept to a minimum.
- 3.13.4 Head Protection – the wearing of safety helmets is a mandatory requirement under the Construction (Head Protection) Regulations 1989 where risk assessment confirms a foreseeable risk of head injury.
- 3.13.5 Respiratory Protection – during operations where dust is generated, the minimum protection to be worn will be a nuisance grade dust mask. Appropriate grades should be used to afford degrees of protection relevant to the task and dependent on the risk assessment of potential hazards.
- 3.13.6 Wrist Protection – kevlar sleeves provide considerable protection to the wrist and arms from lacerations, foreseeable when handling glass, removing debris or when using hand tools, and should be worn.

3.14 Waste Management

All waste generated from site must be stored and collected in accordance with the Environmental Protection Act requirements. Since 1 April 1992 no waste can be removed from site unless by a party registered to carry and dispose of waste and in possession of a waste carriage licence. Subsequent disposal of the waste must be made at a registered site. In addition:

- All skips must be enclosed and kept locked when not in use.
- Separate skips are required for controlled and special waste.
- All debris must be disposed of into skips and such skips must be regularly emptied to prevent a build up of debris on site.
- Ensure the locating of skips does not constitute a hazard to vehicles or persons and that such areas chosen have been sanctioned by the client.
- Ensure that lighting/reflective tape is fitted when skips are located in areas liable to cause a potential restriction or access hazard.

3.15 Noise

Prolonged exposure to excessive noise can cause permanent deafness. 85dBA is the level at which protection is mandatory. If in doubt about noise level eg. drilling, grinding, hammering or chiselling operations, use protection.

- 3.15.1 It is a fact that any prolonged noise above that normally heard in a busy street can cause deafness, unless some form of hearing protection is worn. Most noise is generated short term by power tools. However where other contractors are operating, a possibility exists of the noise becoming continuous. Persons must therefore ensure the correct type of ear plugs/defenders are worn in defined hazardous areas at all times.
- 3.15.2 Ensure that all deliveries of containers, skips and materials are timed to arrive on site at convenient hours during the working day to prevent upsetting or annoying tenants.

3.16 Access Routes

- 3.16.1 Ensure sufficient safety signs are erected at hazardous locations to inform all persons affected by the site works/arrangements of the inherent dangers.
- 3.16.2 Ensure all vehicles making deliveries are controlled when manoeuvring.
- 3.16.3 Ensure children are kept clear from all vehicle movements.
- 3.16.4 Ensure highways are not obstructed.
- 3.16.5 Walkways should be kept clear of tools, equipment and debris at all times.

3.17 First Aid

First aid kits must be available at all working sites, and persons must be aware of how to obtain medical aid in the event of serious injury.

A localised plan must be produced at large sites prior to work commencing, to include the identification of medical and emergency service locations.

All persons should be aware of action to be taken in the event of an electric shock accident.

3.18 Reporting of Accidents

All injuries or incidents however small must be reported at the earliest opportunity and injury details recorded.

Since 1 April 1996 the new reporting requirements for injuries and diseases and dangerous occurrences have been in effect. All companies and individuals, must be aware of the need to comply with RIDDOR 1995 with regard to the reporting of all specified injuries and occurrences to HSE or Local Authority Enforcement Agencies.



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