



Safety in window cleaning using rope access techniques

HSE Information Sheet MISC612

Introduction

This information sheet gives window cleaners guidance on the use of rope access methods and controlling risks. The contents should also be noted by clients, specifiers, managers and contractors.

It has been produced because rope access is increasingly used in window cleaning and it has become clear that not all window-cleaning businesses fully understand the complexities of using this access method.

Because of the limited range of tasks in window cleaning compared with rope access methods across all industries, less breadth of knowledge is required and only simpler rope access skills are generally needed. Nevertheless, full competence in those areas necessary remains crucial, as for all rope access work.

This guidance is not intended to apply to the use of bosun's chairs, although some of the information may be relevant (the use of an additional back-up line, for example).

This document provides summary guidance only. Anyone involved with rope access operations should familiarise themselves with the British Standard Code of Practice BS 7985: 2002: *The use of rope access methods for industrial purposes* (see 'Further reading').

Choice of access method

For any window-cleaning task, in the first instance an assessment should be made to establish whether rope access is an appropriate method for the work. For all work at height, the most intrinsically safe means of access should always be the first consideration. Other safer methods of access, such as cleaning from inside, suspended access equipment or mobile platforms, will often be preferable. In general, the most effective control for any hazard is to eliminate it and only if this is not possible should you then look to control risks to an acceptable level.

General requirements for a safe system of work

Rope access must only be used within a defined system of work. Elements of a safe system will include:

- proper management and planning including risk assessment and supervision;
- use of trained, competent persons;

- selection, maintenance and care of appropriate equipment;
- proper control of working methods, including:
 - use of work equipment,
 - emergency procedures,
 - protection for third parties.

Management and planning

Risk assessment

Factors to be considered include the likely duration of the work, the ease of access, the possibility of using an alternative, safer work method (eg work platform, work from inside the building) and the presence of any hazards.

Management

A nominated person should be identified, who is responsible for managing all aspects of rope access work. The nominated person must have experience and/or training in the type of work the company plans to undertake. Similarly, designated supervisors will be required to directly oversee and direct work in progress on all jobs.

Planning rope access operations

A system of work should be drawn up, taking account of risks from rope access operations generally and job-specific risks that are present and can be foreseen. The safe system should specify rescue arrangements, selection of correct equipment, selection of people with the necessary level of competence and arrangements for control and communication.

Personnel

Competence

A competent person may be defined as someone who is suitably trained or qualified by knowledge and practical experience to enable them to:

- carry out their required duties at the level of responsibility required of them;
- fully understand any potential hazards related to the work under consideration;
- detect any technical defects or omissions in that work, recognise any implications for health and safety, and be able to specify appropriate remedial action as necessary.

In other words, a competent person should be able not only to discover defects but tell what effect they are likely to have.

Safety in rope access work critically depends on high levels of competence in all staff.

Levels of responsibility for those involved in rope access work

For rope access operations, levels of responsibility are usually defined as:

- **rope access manager:** can define and operate a safe system applicable to all worksites;
- **supervisor:** can implement a safe working system for a particular worksite;
- **operative:** can carry out specific work tasks under supervision.

Managers

It is desirable for managers to have practical experience of various work methods. Necessary management skills will include knowing how to:

- create and operate a general system for management of rope access operations, to include as an absolute minimum the requirements set out in this information sheet;
- understand and recognise risks arising from different work situations;
- create and properly use generic and task-specific method statements;
- implement procedures for proper purchase, inspection and care of rope access equipment;
- compile method statements and ensure proper application on-site;
- decide on specific working methods for rope access techniques and work tasks;
- ensure supervision, work equipment and personnel are appropriate for the work to be done;
- monitor and review effectiveness of working methods.

Operatives

Operatives should be at least 18 years of age, normally with a maximum weight of 100 kg. They should have an aptitude for work at height and must be physically capable of carrying out the tasks required. They should be free from any impairment that may prevent them from working safely at height. No one suffering the following conditions should do rope access work:

- heart disease/chest pain;
- high blood pressure;
- epilepsy, fits, blackouts;
- fear of heights/vertigo;
- giddiness/difficulty with balance;

- impaired limb function;
- alcohol or drug dependence;
- psychiatric illness/undergoing counselling;
- diabetes.

Employees should undergo regular medical examination to ensure they are reasonably physically fit.

Training and competence

All operatives should have received training in rope access work and should have appropriate knowledge, experience and practical skills for the type of work being undertaken.

Training should be carried out by a competent organisation, and should include assessment of specific skills and knowledge. The training programme should be formalised in both time and performance, and should be assessed by a competent person who did not deliver the training. Training schemes should clearly state the scope of the training provided, the intended duration of certification and any limitations to be observed, either of individual personnel or of working methods.

Companies should be aware that training is no substitute for experience. Newly trained individuals should be closely supervised and introduced to rope access work gradually, under carefully controlled circumstances. Practice of 'mock-up' work situations is recommended.

If access techniques have not been used for more than six months, refresher training must be carried out and the operative should receive a higher level of supervision until they have become accustomed again to this type of work.

Operatives should maintain a working record showing training received and details of subsequent work experience. This record will assist employers in assessing and verifying an employee's suitability for particular types of work.

Before starting any job, all operatives must be competent to:

- properly inspect access equipment before every use;
- understand all risks arising from the access method and work task;
- use all access techniques required by a particular worksite.

For window cleaning work, the minimum level of practical skills needed will include:

- controlled descent;
- use of back-up system;

- short ascent;
- change from one rope to another;
- knots, elementary safe rigging, rope management;
- selection of safe anchor points;
- equipment care and pre-use checks;
- safety of third parties;
- elementary rescue.

Supervisors

Every job must be properly supervised by people with experience and appropriate training in the type of access method to be used. In particular, supervisors should be fully conversant with the access techniques required for each job and should be aware of any limitations of those techniques. Supervisors should also be competent in rescue techniques for both general and specific situations and must have the appropriate interpersonal skills to perform their duties effectively.

Necessary skills can be summarised as follows. Supervisors should be able to:

- implement working methods set out by the manager;
- understand risks set out by different work situations;
- execute and direct all access methods required by a particular work task;
- plan for (and be able to carry out) any necessary rescue for a particular work situation;
- have experience of and competence in worksite and personnel supervision;
- eliminate or control hazards to operatives or third parties;
- properly manage and care for all access and work equipment on-site.

Access equipment

Selection

All equipment should be appropriate to its application. Almost all rope access equipment is classed as personal protective equipment and should therefore carry a CE mark. All access equipment should be supplied with a certificate of conformity, giving the specifications and performance characteristics where appropriate. If there is any doubt as to the suitability of equipment, obtain advice from a competent supplier. A list of relevant standards is given in BS 7985: 2002 (see 'Further reading').

Key requirements of rope access equipment

- The harness should be a sit harness conforming to EN 813.
- Descender devices should be of a type that will stop if the user loses control or allow only a slow, automatically controlled descent in the hands-off position.

- The back-up device should be capable of withstanding any foreseeable forces resulting from the rope access activity, without catastrophic damage to the line or device.
- Rope should be of kern mantel construction, semi-static (low-stretch) type, of a diameter between 10.5 mm and 11.5 mm, in accordance with EN 1891. Dynamic mountaineering rope (EN 892) is not suitable for suspension or as a back-up rope, but may be used for personal lanyards (cows' tails).

Certification, marking, trace ability

Equipment should be individually marked in a way that does not impair its function. Equipment should be properly maintained and stored, and should be traceable back to the manufacturer or supplier.

Inspection, care, maintenance, longevity

Equipment should be inspected before each use (pre-use inspection) and examined thoroughly by a competent person in accordance with a specified schedule, normally at intervals no greater than six months. If equipment is used in arduous environments, inspection should take place at intervals no greater than three months.

The results of thorough inspections should be recorded. Rope access equipment is classified as lifting equipment and therefore falls within the requirements of the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).

Where cleaning companies employ subcontracted access technicians, they must confirm that the subcontractor carries out checks to ensure that all equipment used is fit for purpose and in good condition.

Other PPE

Some work tasks or work environments may require the use of other protective equipment, such as warm clothing, waterproofs, hearing or eye protection, gloves etc.

Control of working methods

Risk control measures that apply to all rope access work

- Operatives will always be attached to at least two independently anchored safety systems.
- Connection to the rope access system should be in an area where there is no risk of a fall from a height, unless there is protection by other means.
- Exclusion zones should be established as appropriate. This may require zones at locations other than top and bottom of the rope access work.

- An efficient communication system should be established, eg mobile phone, radio, whistle etc.
- All practicable measures should be taken to avoid injury-causing impact with the structure or obstructions.
- Operatives should be properly dressed and equipped, appropriate to the work situation and conditions.

Consideration of working methods

In addition to general controls for rope access, there will be specific considerations such as:

- type of access method, eg descent, ascent, traversing, suspension, aid climbing (see following section);
- ease of anchoring;
- ease of access to and egress from work position, eg flat roof, clear pavement;
- objective hazards during the work, eg wind, sun, rain (especially wind);
- dangers to third parties.

The level of skill required of operatives and the level of necessary supervision will be indicated by these factors.

Types of rope access methods

For window-cleaning companies to carry out rope access operations safely, it is essential that they are clearly aware of the different requirements of various access situations, and to consider whether they are competent for a specific technique. If, after such consideration, the cleaning company does not have sufficient experience or competence, it may consider one of the following: using a specialist contractor; employing an experienced supervisor; or additional training of personnel.

As a rough guide, the following situations may be considered to be of increasing difficulty and complexity and requiring correspondingly more advanced skills.

Working in suspension (descent and ascent)

This covers most situations, such as building exteriors. It can be broadly categorised as follows:

- **Straightforward:** rope follows simple path from anchor point to ground. Relatively simple techniques for descent/ascent and rescue.
- **With deviation:** rope pulled small distance away from vertical during descent. Requires slight increase in technique compared to the previous method.
- **With 're-belays':** intermediate anchor points required between top and bottom of descent. Requires significant increase in technique,

especially for rescue, because a single descent to the ground is not possible.

- **Without clear egress at bottom:** potentially hazardous - requires competence in long ascents and special rescue methods.

Any of the above methods may be complicated by additional factors such as difficulty in reaching the point of descent, lack of convenient anchorages, presence of sharp edges, complex structure, busy worksite, proximity of roads or other public thoroughfares, other objective dangers.

Aid climbing and traversing (atria and other interiors)

Aid climbing is a special access technique requiring additional training or experience. In addition, the work situations for which it is used may present additional hazards, such as heat exposure (glass atria), difficulty of rescue, and the possibility of falling. These methods should only be used by specifically trained and qualified operatives, following a thorough risk assessment. Appropriate access, rescue plans and equipment should be provided.

Specific requirements for rope access operations

- If the operative is in tension or suspension, there should be at least two independent anchor lines, one primarily as a means of access, egress and support (the working line) and the other as additional back-up security (the safety line).
- The operative should be connected to both the working line and the safety line via an appropriate harness, even if a workseat is being used. Measures should be taken to avoid inadvertent detachment from the working and safety lines.
- There should always be at least two attachments to the structure when aid climbing.
- The back-up device should be kept as high as possible to prevent or limit a fall (limited free fall).
- Anchor points should be unquestionably sound and ropes should be arranged to avoid abrasion.

Use of work equipment

Steps should be taken to ensure that any work equipment (eg cleaning tools, buckets, squeegees etc) is properly secured and used safely. All items must be attached so they cannot fall, and large items (over 8 kg) should be suspended on an additional haul rope. Tool bags or pouches may be appropriate for some work.

Rescue

The provision of adequate emergency measures is of prime importance when carrying out rope access work. There should be a specific rescue plan for each

worksite, with on-site practice if appropriate. In any case, work teams should practice rescue techniques from time to time. Operatives should always be in a position to recover themselves, or to be recovered quickly and efficiently by the immediate work team or by a dedicated on-site rescue team.

Rescue equipment should be appropriate to the nature of the workplace, eg length of ropes, availability of extra anchor slings, hauling equipment etc.

First aid

Every worksite should have access to reasonable first-aid provision and at least one member of a work team should have received first-aid training.

Legislation

- The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) contain wide-ranging requirements on all aspects of carrying out 'lifting operations', including all rope access.
- The Management of Health and Safety at Work Regulations 1999 (MHSWR) specify general requirements for identifying the nature and level of risks associated with work operations.
- The Provision and Use of Work Equipment Regulations 1998 (PUWER) apply to all work equipment, which is required to be suitable for the intended purpose. Personnel must be properly trained to operate the equipment with which they are provided.
- The Construction (Health, Safety and Welfare) Regulations 1996 C(HSW)R contain specific requirements on the prevention of falls (Regulation 6). 'Construction' includes cleaning and maintenance work.

Further reading

BS 7985: 2002 British Standard Code of Practice *The use of rope access methods for industrial purposes* British Standards Institution (contains a full list of relevant European Standards for personal protective equipment)

Safe use of lifting equipment. Lifting Operations and Lifting Equipment Regulations 1998. Approved Code of Practice and guidance L113 HSE Books 1998 ISBN 0 7176 1628 2

Management of health and safety at work. Management of Health and Safety at Work Regulations 1999. Approved Code of Practice and guidance L21 (Second edition) HSE Books 2000 ISBN 0 7176 2488 9

Safe use of work equipment. Provision and Use of Work Equipment Regulations 1998. Approved Code of Practice and guidance L22 (Second edition) HSE Books 1998 ISBN 0 7176 1626 6

Simple guide to the Provision and Use of Work Equipment Regulations 1998 Leaflet INDG291 HSE Books 1999 (single copy free or priced packs of 15 ISBN 0 7176 2429 3)

Personal protective equipment at work. Personal Protective Equipment at Work Regulations 1992. Guidance on Regulations L25 HSE Books 1992 ISBN 0 7176 0415 2

A guide to the Construction (Health, Safety and Welfare) Regulations 1996 Leaflet INDG220 HSE Books 1996 (single copy free or priced packs of 10 ISBN 0 7176 1161 2)

Guidelines on the use of rope access for industrial purposes Industrial Rope Access Trade Association (IRATA) 2000

Industrial rope access: Investigation into items of personal protective equipment CRR364 HSE Books 2001 ISBN 0 7176 2091 3

Five steps to risk assessment Leaflet INDG163(rev1) HSE Books 1998 (single copy free or priced packs of 10 ISBN 0 7176 1565 0)

COSHH: A brief guide to the regulations: What you need to know about the Control of Substances Hazardous to Health Regulations 2002 (COSHH) Leaflet INDG136(rev2) HSE Books 2003 (single copy free or priced packs of 10 ISBN 0 7176 2677 6)

Inspecting fall arrest equipment made from webbing or rope Leaflet INDG367 HSE Books 2002 (single copy free or priced packs of 10 ISBN 0 7176 2552 4)

Further information

National Federation of Master Window and General Cleaners, Summerfield House, Harrogate Road, Reddish, Stockport, Cheshire SK5 6HQ
Tel: 0161 432 8754

Industrial Rope Access Trade Association (IRATA), Association House, 99 West Street, Farnham, Surrey GU9 7EN Tel: 01252 739150

Height and Access Safety Group, Tamesis House, 35 St Philips Avenue, Worcester Park, Surrey, KT4 8JS
Tel: 020 8330 6446 (www.hasg.org.uk)
e-mail psma@tamgroup.co.uk

British Standards are available from BSI Customer Services, 389 Chiswick High Road, London W4 4AL
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Website: www.bsi-global.com

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For information about health and safety ring HSE's Infoline Tel: 08701 545500 Fax: 02920 859260
e-mail: hseinformationservices@natbrit.com or write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

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

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