



HEALTH AND SAFETY EXECUTIVE AND LOCAL AUTHORITY SCAFFOLD PROTOCOL



Frontispiece

HSE : LOCAL AUTHORITY SCAFFOLDING PROTOCOL

1. Enforcement initiatives in 2003 and 2004 by Inspectors of HSE's Construction Division North West found significant shortcomings with work at height related issues that necessitated formal enforcement action at more than half of the sites visited. The Merseyside & Cheshire Inspection Group held a Safety Awareness Day at Aintree Racecourse in March 2004. It was attended by representatives of 34 local scaffold companies and a full and frank discussion of the reasons for the poor performance resulted. Scaffolders complained of time pressures from their clients and multiple demands from the numerous enforcement agencies with an interest in scaffolds in public places.
2. HSE addressed these problems by proposing a comprehensive guide to erecting scaffolds in urban areas. A working group was formed including representatives of; the Merseyside & Cheshire Inspection Group, HSE's North West Support Group, Wirral M.B.C., Liverpool C.C., Merseyside Police, Merseyside-based scaffold companies and contractors working on large projects in the area. The protocol document was produced over the latter part of 2004 and the early months of 2005. The aim was to highlight measures to be taken to comply with the law during scaffold erection and dismantling, concentrating on public protection. It did not replace any national guidance, nor did it constitute a risk assessment or safety method statement. It was intended to be a working document providing a structured approach to scaffolding in urban areas, and engender a consistent approach to permit application.
3. The initial draft was reviewed by local scaffolders and members of the Liverpool-based Association of Northern Scaffolding Contractors for practicality of the system(s) it introduced. A 6 month trial of the Protocol in Wirral and Liverpool was launched to an audience of scaffolders, principal contractors and other stakeholders at John Moores University 30 June 2005. With associated local and national press coverage. Keynote speeches were given the Chief Executive of Wirral M.B.C. and the Strategic Risk Manager of Liverpool C.C. An electronic version was placed on the Wirral M.B.C. website.
4. The results of the trial were evaluated by both observation of standards and discussion with the stakeholders. Results were used to compare standards in Liverpool both before and after its introduction and with standards in Manchester, a city of comparable size where no protocol had been in operation.
5. There is no doubt that the protocol had a beneficial effect on the planning, erection and management of scaffolds in public places in the two LA areas. Its consolidated guidance was welcomed by duty holders and regulators alike. Evaluation established that physical standards improved and on particular issues the improvement was due to more than just advancement in standards over time. The comparison between Liverpool and Manchester showed high standards were achieved on occasion in both cities. However the quality of planning and management of scaffolds was markedly better in Liverpool. Further, the protocol lifted awareness among Planning Supervisors and Contractors of scaffold related issues.
6. One remarkable success of the initiative was the level of engagement of local scaffold companies. They not only actively co-operated with the regulators to develop the protocol as a practical and realistic document, but have shown great commitment in adhering to it and encouraging others to do the same.
7. The construction sector and regulators of Wirral and Liverpool have shown that co-operation and commitment can make a big difference in improving standards and we all commend this approach to other regulators, local authorities and stakeholders.

Wayne Crumpton,
HM Principal Inspector,
Construction Division North West,

November 2007

Health and Safety Executive and Local Authority Scaffold Protocol

MISSION STATEMENT

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GUIDANCE - OVERVIEW

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GUIDANCE - OVERVIEW

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MISSION STATEMENT

The Protocol has been produced in consultation with Liverpool City and Wirral Metropolitan Borough Councils, the Health and Safety Executive (HSE) and Construction Professionals.

The aim of the Protocol is to highlight the measures that should be taken to comply with the law during the erection and dismantling of scaffolding, with respect to protecting members of the public. The Protocol does not replace any national HSE Information Sheet or HSE Guidance, nor does it constitute a risk assessment or safety method statement.

The Protocol sets out a framework for contractors to adhere to in order that:

- (i) dismantling and erection is properly planned
- (ii) scaffolding operatives are competent and have received sufficient training and instruction on the method and sequence of work
- (iii) there is segregation of the work, to protect the public

The Protocol is a working document, which sets out a structured approach when undertaking work in densely populated areas. It aims to produce a consistent approach to permit application.

How to use this document

Having read the Permit Procedures (Section 1), you should complete the Application Form (Section 2) and return it, with your Scaffold Plan and the appropriate Fee(s), to:

*****Address: *****

When planning your work you should use the 'Pre-start checklist for the planning and procurement of scaffolding' (Section 3), as well as the guidance on:

- the hierarchy of protective measures (scaffold erection and falling objects) (Section 4);
- competence (Section 5); and
- inspection (Section 6).

More detailed guidance is contained within Sections 7 to 16, and also the Annexes. This document does not replace any national HSE Guidance, etc., nor does it constitute a risk assessment or 'scaffold plan' (safety method statement).

NOTE

Any references to technical standards within this document are undated. Annex 19 gives the current version and will be periodically updated. You should ensure that you are using the standard that is current.

PERMIT PROCEDURES

When planning for, and making, an application for a scaffold permit the person in control of the work being undertaken from the scaffold, e.g. the Client or Principal Contractor, should carefully read the following 'Permit Procedures'.

1. PERMIT PROCEDURES

When planning for, and making, an application for a scaffold permit, the **person in control** of the work being undertaken from the scaffold, e.g. the Client or Principal Contractor, should carefully read the following 'Permit Procedures'.

HIGHWAY REQUIREMENTS FOR HOARDINGS AND SCAFFOLDING

The safety of the public and operatives working in and around hoardings and scaffolds erected adjacent to or on the public highway should be protected at all times.

The Local Authority is empowered under the provisions of the Highways Act, 1980, to require the placement of a hoarding or scaffold on the public highway to be licensed

Site meetings and inspections

The Local Authority is responsible for the protection of the general public and the highway. As required, both inspections and site meetings are undertaken, depending upon the location, that will ensure that the scaffold and/or hoarding complies with the licence issued relevant to the highway.

Local Authorities work in close liaison with the HSE. If it is identified that there is a potential issue with the safety of a scaffold or hoarding, either during erection, dismantling or use of the structure, the matter will be brought to the attention of the HSE.

Developers, architects and contractors will appreciate that whilst the Council's general requirements for hoardings and scaffolds are contained herein, additional discussions and site meetings may be necessary; particularly in the case of major building works, high risk/problematic areas, traffic sensitive locations, etc. to determine and agree the precise form of hoarding etc. to be erected.

Pre-start site meetings **must** be attended by **both** the person in control of the work and the scaffold company licensed to erect the scaffold. The hoardings, fence or scaffold shall be erected, maintained, lit and removed in accordance with the provisions of the Highways Act, 1980, and any other relevant statutory enactment. Every person who fails to comply with any of the provisions of these Acts, and associated licenses, shall be liable to the penalties thereby imposed as contained within the licence.

Further guidance on the issues to be considered during the planning, in particular, of any work is contained within the main part of this Protocol (Sections 7 to 16).

TRAFFIC MANAGEMENT ASSOCIATED WITH ERECTION AND DISMANTLING OF A HOARDING AND SCAFFOLD

Temporary footways

Unless otherwise agreed, a minimum 1.22 metres (4 ft) width of footway, clear of all obstruction, must be left alongside the hoarding/scaffolding during erection and dismantling of the structure, to comply with Chapter 8 of the Road Traffic Regulations Act 1984 (the 'burgundy book') and the requirements of Disability Discrimination Act 2003.

Where such minimum width cannot be provided, and also in cases where a width of 1.22 metres (4 ft) would be inadequate, a suitable platform may be required as an extension from the hoarding to serve as a footway, either wholly or as an addition to the remaining width of the permanent footway.

The platform must be properly constructed to provide a stable, unobstructed walkway of uniform level; particular care being taken, e.g. anti-skid protection, to prevent slips and trips in cases where the platform forms an extension of the permanent footway.

Well secured timber baulks or similar adequate protection shall be provided on the carriageway side of the platform to protect the walkway. If directed by the Local Authority, a continuous anti-splash panel topped by a smooth handrail shall be provided behind the timber baulks. These requirements should be consistent with the overall requirement to provide adequate pedestrian provision around hoarding and scaffolds at all times including during erection and dismantling, as detailed elsewhere in this guidance.

Traffic control and road closures

Where hoardings or scaffolds, inclusive of any additional safety zone or temporary footways, restrict the highway to less than 6.75 metres (in the case of two-way traffic) or 3.25 metres (in the case of one-way traffic), additional traffic controls and/or road closures will have to be considered as part of the application.

In the event of a road closure, an **additional six weeks** notification is required. This time is required in order for the Local Authority to advertise and seek legal agreement for the order.

Therefore, it is essential in the planning of works that require such structures to be erected in sensitive, high-risk, problematic locations are planned in good time.

There is an associated cost for the processing and agreeing of road closures, as set by the Local Authority.

Other miscellaneous costs

The granting of Hoarding and/or Scaffold Licences (and Skip Licences) on the Highway will, on occasion - dependant on the Local Authority issuing the licence and location of the hoarding and/or scaffold - result in potential loss of Parking Income associated with suspension of Pay and Display Control Parking Zones or yellow line restrictions (as authorised by the Road Traffic Act 1991).

On such occasions, each Local Authority will agree levels of loss or compensation in addition to the hoarding, scaffold or skip Licence Fee where appropriate.

Date, timing and duration associated with erection and dismantling

The date, timing and duration allowed for the erection and dismantling of the hoarding and/or scaffold shall be agreed with the Local Authority and shall be contained within the Scaffold Plan, required as part of the application.

This will have to be in agreement with the emergency services in certain instances, such as at sensitive locations and areas highlighted as 'high-risk' or 'sensitive locations'.

Within each Local Authority boundary there will be certain highways and pedestrianised areas that are considered high risk, sensitive or problematic areas. This may be due to the volume of pedestrians and traffic associated with city, district and local shopping centres or certain traffic sensitive streets, that at certain times of the day could cause problems for the timing of the erection and dismantling of scaffold and/or hoarding.

In such circumstances, the method, timing and duration required to erect any scaffold and/or hoarding will require careful and adequate planning to ensure that the highway and the general public are not put at additional undue risk during such erection and dismantling.

In areas of high risk or sensitive locations, as contained in the attached list (specific for each Local Authority), specific agreements on the erection and dismantling of the scaffold must be agreed in writing, with the authority, prior to erection.

Indemnity

The applicant shall indemnify and hold harmless the Local Authority against all liability claims and demands whatsoever in connection with, or arising out of, the erection, maintenance, existence and/or removal of the hoarding, scaffold, fencing, platform, handrail, etc. referred to.

HIGHWAY CONSIDERATIONS WHEN PLACING SCAFFOLDS IN AND OR ACROSS THE PUBLIC HIGHWAY

Sight lines and clearance

At street junctions where a hoarding and/or a scaffold could affect visibility, it may be necessary to splay the hoarding or to replace it with wire mesh to ensure adequate sight lines.

No part of any hoarding, overhead covering or fan shall extend over the carriageway except at a clear height of at least 6 metres. Below this height no part of the hoarding shall be nearer than 0.5 metres to a vertical plane based on the line of kerb.

Scaffold hoardings

Hoardings must be erected around scaffolds, where these deny highway users the use of part of the width of a highway.

In cases where highway users are not allowed to pass between lines of scaffold poles, precautions must be taken to ensure that clips and other fittings are not so placed as to cause danger or annoyance.

In all other cases, hoardings must be a minimum of 2 metres high (Ref. HSG 151), close-boarded or faced with plywood, etc. to provide a smooth face and painted in a light uniform colour, unless otherwise agreed with the Local Authority.

Where diagonal scaffold poles are required to be placed directly between lines of scaffold so as to cause obstruction, the remaining footway must be of adequate width to accommodate pedestrians, i.e. be no less than 1.22 metres (4 ft). If the remaining footway is less than the required minimum, then a suitable temporary footway must be provided (as outlined elsewhere in this document). Alternatively, the scaffold should be designed so as to not contain such obstructions, especially in areas where a temporary footway could not be accommodated.

Ideally this should be done by the erection of continuous panelling erected against the lines of poles to a height of at least 2.0 metres (6ft 6 inches) and of a type and finish similar to that specified for hoardings. The panelling shall be erected on both sides of the lines of poles where pedestrians can walk outside the scaffold.

To protect pedestrians walking between lines of scaffold poles a substantial close-boarded overhead covering at least 2.44 metres (8 ft) must be provided to protect persons below from spillage of materials.

Hoardings of a strictly functional character erected solely to prevent the use of part of the street by pedestrians and sometimes comprising merely of ropes and stakes, scaffold poles or corrugated iron sheets will be permitted only for operations of very short duration (max. 2 days) and/or in areas where a superior or more robust form of hoarding or protection could not be constructed.

USE OF FANS, NETTING, SHEETING AND APPROPRIATE PROTECTION TO ENSURE PROTECTION OF THE GENERAL PUBLIC USING THE HIGHWAY

Overhead coverings, netting, sheeting or fans, of adequate construction and projection and of a similar finish to the hoarding, must be provided, where necessary, to protect the public and prevent materials falling onto the footway or carriageway. See Section 12, *Protection Fans*.

Gantries over Carriageway

Overhead platforms in the form of gantries across the carriageway must also be close-boarded and provide a minimum clearance of 6 metres, unless otherwise agreed with the Local Authority.

Surface water drainage, fire hydrants and statutory undertakers' equipment, etc.

Proper precautions shall be taken to ensure that the surface water drainage of the carriageway is not interrupted by the platform or the hoarding and access to fire hydrants, lamp columns, manholes, junction boxes, etc. must be preserved.

Lighting

Hoardings and scaffolds must be adequately lit during the hours of darkness and wherever possible such lamps shall be electrically operated. They may be secured to the hoarding or scaffolding and must be regularly maintained.

Where highway users are required to pass under overhead coverings or gantries, special lighting may be necessary to ensure their safety and convenience.

Hoardings and scaffolds must be adequately lit at all times between half an hour after sunset and half an hour before sunrise. See Section 14, *Guidance on Lighting for Scaffolds and Hoarding*.

Reinstatement of highway

Upon the erection or removal of hoardings or scaffolds, or upon completion of the building operations which necessitated their erection, the highway must be adequately reinstated to the satisfaction of the Local Authority.

Where permitted by the Local Authority, flags or other re-usable paving materials taken up from the street to allow hoardings or scaffolds to be erected shall be stored by the applicant, who shall maintain and keep safe the disturbed highway during the progress of the work and after removal of the hoarding or scaffold.

The permanent reinstatement of the disturbed highway and the making good of any damage to the highway or other property of the Authority caused by the erection and or dismantling of the scaffold and/or hoarding will be carried out by the Authority at the cost of the applicant unless otherwise agreed. (NB The repair of highway damage will not be carried out by the Council in unadopted streets).

The onus of proof that damage to the highway, or other property of the Authority, was not consequent upon the applicant's operations shall be upon the applicant.

Advertisements

The Town and Country Planning (Control of Advertisements) Regulations 1969/1975, apply to the erection of advertisements on any building hoarding or scaffold.

No advertisement shall be placed on a scaffold or hoarding without such planning permission and the granting of a hoarding/scaffold license does not automatically give permission to erect such advertising. There will also be the requirement to gain a highways licence under S115E of the Highways Act for the advert to be placed on the highway.

Information to be displayed

The Principal Contractor, or person in control of the site, is required to make arrangements to ensure that the following information is made clearly visible at all times on site, in the form of an information board or sign:

- Local Authority with name who has given the authority
- Name of Client
- Name of Principal Contractor and Scaffold Company
- Emergency 24 hr contact number
- Number of ties, where required

See Section 8, *Information to be displayed*, for an example of the information required.

Street furniture

Where the erection of the scaffold is to encase, obscure or require the removal of any street furniture including bins, lighting, signs, seating, guard-railing, etc. then the costs of removal and reinstatement of furniture shall be borne by the licence holder. Street furniture will require to be securely stored and any costs associated with the loss or damage resulting in replacement shall also be borne by the licence holder.

Scaffold & Hoarding Application Form

APPLICATION FOR PERMISSION TO ERECT HOARDING / SCAFFOLD

Highways Act 1980 Section 169

I hereby apply for consent / permission to erect and retain scaffolding / hoarding or other structure on or over the public highway.

*This form must be completed in every case where it is proposed to erect a scaffold or other structure on the highway (inclusive of grassed verges and footpaths etc) and returned together with a drawing / plan detailing the layout to: **NAME AND ADDRESS OF COUNCIL***

A minimum of seven days notice will be required to process this application and issue a permit.

Details of Applicant					
Name of Applicant / Organisation / Client / Contractor (as applicable)					
Address of Applicant Etc.					
Name of Contact Person		Telephone:		Fax:	
Details of Scaffold Company					
Name of Scaffold Company					
Address of Scaffold Company		Telephone:		Fax:	
Details of Scaffold or Other Structure					
Address / Location of proposed scaffold / hoarding					
For what purpose is it required?	HOARDING / SCAFFOLD <small>(delete as necessary)</small>				
Pavement type (flags, tarmac, other)		Length of scaffold		Width of scaffold	
For what period of time is it required? (Days / Weeks / Months)	From:				
	To:				
Type of scaffold to be erected?	Site working hours?				
How will it be secured / tied?	How long will the scaffold take to erect?				
Who will Supervise the scaffold erection?	Name:	Phone Number:	Competence level		

We hereby undertake to comply with the provision of the Acts in force, the conditions upon which any permission is granted and any pay any fees where applicable to erect and retain scaffolding on the highway.

Signed..... Name..... Date.....
(to be completed by representative of main contractor)

Appendix to Scaffold Permit No. (Permit number to be entered here when permit issued)

November 2007

Section 1- Contact details

*(To be completed by person or organisation in **control** of construction. applying for the permit and submitted to the Approved Permit Issuer)*

a. Details of company completing this appendix. Refer to section 1 of guidance.

Company Name: Address: Postcode: Telephone number: Fax: E mail Contact <i>(Name and number of person completing this appendix):</i>
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b. Name of scaffolding contractor Refer to section 5 of guidance.

Company Name: Address: Postcode: Telephone number: Fax: E mail Contact <i>(Name and number of contact person):</i>

c. Details of who is responsible for completion of weekly scaffold inspections Refer to section 6 of guidance

Nominated Name: Address: Postcode: Telephone number: Fax: E mail Contact <i>(Name and number of contact person):</i>

Section 2- Scaffold Details

1	Scaffold Plan	Refer to guidance under heading scaffold plan – see section 7. The Plan should be appended to this Permit.	Details of other reference documents / drawings.
2	Signage, lighting and guarding	See Section 1 – Highway Requirements Refer to guidance under headings Scaffold Sign, Security Procedures, Physical Protection, Raising and Lowering of Materials, Lighting for Scaffold and Hoarding, Electrical Hazards.- see sections	Details of other reference documents / drawings.
3	Method to tie scaffold to structure / building Including: details of type of ties and locations /number	Refer to guidance under heading Stability, Bracing and Testing – Section 10, Scaffold Design – Section 9. The scaffold plan <u>MUST</u> clearly show the position of the ties	Cross reference to drawings.

Section 3 – Confirmation of details

a. I hereby declare that the details in section 1, 2 and 3 are correct at the time of completion of this appendix.

Signature:		For and on behalf of:	
Print Name:		Date:	

GUIDANCE - OVERVIEW

In planning your work you should take into account the following guidance, as detailed under the headings:

- Pre-start checklist for the planning and procurement of scaffolding
- Hierarchy of protective measures (scaffold erection and falling objects)
- Competence
- Inspection Sheets

3. PRE - START CHECKLIST FOR THE PLANNING AND PROCUREMENT OF SCAFFOLDING

Before completing your scaffold permit application, or erecting/dismantling scaffold, you should consider the following:

Client/Principal Contractor

Planning

Have you applied for a Scaffolding Permit?

Have you consulted the Local Authority concerning: traffic restrictions and/or road closures, hours of work, exclusion zones, etc. (Do **not** assume that a road closure will not be granted).

Have you obtained information from the statutory undertakers and consulted them on any restrictions (particularly for overhead cables)?

Have you provided relevant structural survey information, including whether drilled ties or physical ties can be used (e.g. box or through ties)?

Prospective Scaffolding Contractor(s)

Can you demonstrate that you have selected a competent scaffolding contractor?

Tenders/Pricing

Has the scaffolding contractor been informed (preferably in writing) about the type and extent of work, including the required duty rating? What trades will be on site?

Have you included, as appropriate, the following requirements in your contract documentation (e.g. bill of quantities, specifications):

- Design criteria, e.g. type of scaffold, duty rating, Standard (viz. TG20, BS EN 12811, BS 5973, etc.)
- Service information (below and above ground)
- Weather conditions
- Information relating to below-pavement basements, retaining walls, manholes, etc.
- Security, hoarding and fencing (at least 2m high, unless specified otherwise)
- Lighting and earthing
- Parking and loading of vehicles
- Traffic management
- Signage (including the provision for advertising)
- Public protection, e.g. sheeting, debris netting, fans
- Exclusion zones
- Level of supervision
- Lifting and lowering of materials
- 'Attendances' (e.g. for the alteration of ties, etc)
- Debris chutes
- Stair towers
- Statutory inspections
- Site access and egress
- Welfare facilities and space to locate them
- Arrangements for ongoing statutory inspections of any scaffolding?

Have you informed the scaffolding contractor about **your** site rules?

Pre-Contract

Have you reviewed the Scaffolding Contractor's proposed system of work, risk assessment and scaffold plan (method statement)?

Have all emergency details been posted on the Information Board?

Have you made arrangements for electrical testing, e.g. lighting?

Scaffolding Contractor

Tendering/Pricing

When pricing the work, have you:

- visited site
- met the Client/Principal Contractor
- made an allowance for the requirements specified in the contract documentation, e.g. bill of quantities, specifications (see above)?

Have you confirmed (preferably in writing) the type and extent of work, including the exclusion zone(s) and duty rating?

Does the scaffold require a full structural design, e.g. by a competent scaffold designer?

Have you consulted any relevant statutory authorities concerning your proposed methods of work and any precautions required (particularly for overhead cables)?

Pre-Start

Have you requested a pre-start meeting with the Client/Principal Contractor?

Have you been informed about the Principal Contractor's Induction arrangements?

Have you proposed a safe system of work and prepared a risk assessment and scaffold plan ('method statement')?

In selecting an appropriate type of tie, have you:

- assessed the integrity of the structure to which the tie will be attached
- (for drilled ties) undertaken 'preliminary tie testing' (see NASC's TG4)?

Have you prepared a sketch or drawing showing the proposed tie sequence?

Is the job to be supervised by a competent scaffolder?

Do you have a written Policy for the testing of ties?

Is your testing equipment calibrated?

Erection/Dismantling

Have you arrangements for briefing your operatives? Have they signed any relevant documentation?

Do you maintain a record of competence and training for operatives and supervisors?

4. Hierarchy of Protective Measures (Scaffold Erection and Falling Objects)

Risk assessment

A risk assessment must be undertaken before working at height to determine what health and safety measures are required. After determining whether or not the work can be done in a different way, e.g. from a mobile elevating work platform (MEWP) or 'scissor lift', you should seek to: eliminate the hazard, reduce the risk, provide information and introduce control measures.

You should consider: the activity, the equipment to be used, the location, e.g. near or over roads, under power lines, etc., the environment, e.g. weather, temperature, lighting, the duration of the work, and the condition and stability of the work surfaces.

In deciding what to do, you should adopt a 'hierarchical' approach (see table, below). Where possible, eliminate the hazard (the top of the hierarchy). Where a risk remains, then steps should be planned and implemented in order to reduce or control that risk. The table gives examples of protective measures, which may be used in isolation or together.

Scaffold Plan ('method statement')

A good Scaffold Plan (sometimes referred to as a method statement) will be clear and concise, and laid out following the guidance contained in Section 7, *Scaffold Plan*. It will identify the hazards, assess the risk and specify the precautions to be taken.

A plan should also cover labour levels, tools and equipment to be used as well as what happens when work needs to be modified, e.g. review arrangements (perhaps by a supervisor, engineer, site agent, etc.). It should, where possible, be self-contained, but may cross-reference other documentation, e.g. drawings and specifications, risk assessments, permits this is to avoid repetition. Sketches are a useful way of disseminating information.

	Issue	Protective Measure(s)	Notes
Eliminate	<i>The following are examples of measures that may be used to prevent the risk of members of the public being hit by falling objects.</i>		
	Road Closure(s)	Apply for and implement a road closure.	Do not assume that a road closure will not be granted.
		Apply for and implement a partial road closure	
Reduce	<i>The following are examples of measures that may be used to reduce exposure to the risk of members of the public being hit by falling objects.</i>		
	'Off Peak' Working	Undertake any erection and/or dismantling during hours where there are fewer members of the public, i.e. 'off peak' working	Work during 'off peak' night time hours of darkness will need to take account of the hazard darkness
	Sheeting, Netting and Fans	Sheeting/netting should be used to enclose scaffolding on its public side to prevent loose materials from falling on to members of the public. Fans should be erected on the scaffold to supplement the sheeting. Consider whether these should be progressive, up the height of the structure.	These measures are particularly important where the scaffolding fronts on to a public access way. The scaffold supporting any sheeting, netting or fan(s) must be able to support any additional load(s). Where work is carried out close to pedestrian or vehicular access, scaffolds that are sheeted down to hoarding level can minimise both the risk to the public and the area lost to public access.
	Tunnels	During quiet hours, erect a protective 'Tunnel' (and/or Fan(s)) to protect members of the public during any erection ongoing.	
Inform	<i>The following are examples of the planning and information that should be provided when working in areas where members of the public can be hit by falling objects.</i>		
	Planning	Undertake and disseminate a risk assessment and 'scaffold plan' (method statement)	Ensure that workers understand what they have to do, when and where.
	Induction	Brief workers on site-specific issues, e.g. hazards, restrictions, etc.	
Control	<i>The following are examples of control measures that may be implemented to reduce further the risk of being hit by falling objects.</i>		
	Barriers	Provides barriers, e.g. edge protection, toe boards or mesh brick guards to prevent items from slipping or being knocked off the edge of a structure.	To prevent objects falling onto people a proper management system, with appropriate supervision, will be required.

Storage	Ensure that there are no loose objects and that any tools are properly secured.	<p>All materials at height should be stored where they can not fall on to workers.</p> <p>Materials should be kept tidy and secure making sure that all access routes are kept clear. Working platforms should not be cluttered with stored materials, and adequate space must be maintained to allow safe access.</p> <p>All loose materials should be removed on an ongoing basis.</p>
Loose Objects	Secure objects to the structure, e.g. lashing of scaffold boards.	
Lifting and Lowering	Use loading bays, mechanical hoists, etc.	Materials must be stored on platforms designed to take the applied loading, and not be placed in areas where the stored material itself becomes a hazard, e.g. not stored on working platforms so as to restrict safe access around the scaffolds.
Waste Chutes	Chutes should be used for discarding materials. The chute should extend down into a waste skip.	
Weather	In windy weather, all loose materials should be removed or tied down to prevent them from falling.	
Dropping Material	Materials should never be thrown to/from scaffolding.	Materials may be 'handballed' subject to an assessment of the required exclusion zone.
Danger Areas	<p>Danger areas should be clearly marked with suitable safety signs.</p> <p>When employees are working at heights above other work areas, safety helmets should be provided and used to protect workers below against falling objects.</p>	
Signs	Attach warning tags and/or warning signs such as 'Keep Out – Falling Objects' and 'Danger – Incomplete Scaffolding' in obvious locations to warn persons of hazards.	

5. Competence

A competent individual is one with sufficient professional or technical training, knowledge and actual experience to enable them to:

- carry out their assigned duties at the level of responsibility allocated to them;
- understand fully any potential hazards related to the work and the equipment to be used;
- detect any technical defects or omissions in that work and equipment, recognise any implications for health and safety from those defects or omissions, and be able to take remedial action to deal with these.

All workers should be trained in safe working practices (including those to protect the public, and particularly children). Managers and supervisors need competence to deliver safety standards on site and effective training of scaffolders is probably the most important factor in preventing accidents. Numerous courses are available, e.g. those organised by national or local Federations, industry training boards, etc.

Competent companies

The law requires that you appoint a competent scaffold erection company. It is recommended that you:

- obtain written detailed evidence of a company's competence;
- judge the evidence against a set of criteria.

Criteria

In demonstrating (or checking) the competence of a contractor the following should, as appropriate, be considered. The extent and detail of any checks should be proportionate to the risk.

- What is their past experience and track record (in similar work)?
- Does the contractor use workers registered with a recognised training scheme (e.g. CISRS)?
- Are they a member of a trade association (e.g. NASC¹, or similar²), or safety group?
- Are there appropriate levels of site supervision by those with practical experience and training; and is their skill level maintained?
- Are management and work systems subject to quality and safety audits?
- Are there procedures to ensure adequate design, checking (including conceptual errors) and 'change control'?
- What procedures are in place for the checking and maintenance of equipment?
- Do they have, implement and review policies for establishing 'safe systems of work' (including procedures for hazard identification, risk assessment and control of the work)?
- How do they ensure the adequate allocation of resources (including time, money, plant and equipment)?

¹ The National Access and Scaffolding Confederation (NASC) is a national representative employers' organisation for the access and scaffolding Industry, with members operating from locations throughout the UK.

² The Merseyside Scaffolding Group *****

- Do they have knowledge of a range of equipment and techniques?
- Is design, erection, dismantling and alteration planned, managed and undertaken by appropriately qualified and experienced personnel?

Individuals

The law requires that individual operatives be competent in scaffold erection, dismantling and alteration. A holder of a:

- CISRS Basic Scaffolding Card (or, for more complex scaffold structures, the Advanced Scaffolding Card); or
- OSAT NVQ

will normally be accepted as being competent to carry out scaffolding erection, dismantling and alteration. Scaffolders should at all times carry, or have ready access, to their Card.

Supervision

As a minimum, the supervision of scaffolding operations should be by a CISRS Basic Scaffolders (Part 2) or NVQ Level 2. For more complex scaffold structures, supervision must be by an Advanced Scaffolders.

Construction Industry Scaffolders Record Scheme (CISRS)

CISRS aims to ensure that operatives erecting, altering or dismantling scaffolds are properly trained and have sufficient experience to carry out work safely and correctly. The scheme is affiliated to CSCS. At present, there are over 25,000 scaffolders registered with CISRS. CITB issues record cards to operatives who have satisfactorily completed the required training, gained appropriate experience and achieved the relevant NVQ/SVQ.

There are three types of cards:

- **Trainee Record Card**
For operatives who have yet to complete Basic Part 2 training
- **Basic Record Card**
For operatives who have completed required training
- **Advanced Record Card**
For experienced operatives who have completed required training

The validity of a CISRS Record Card can quickly be checked by 'phoning CITB on: 01485-577-875.

Trainee record card

In order to obtain a Trainee Record Card, you need to:

- Register for a scaffolding NVQ/SVQ
- Pass the construction **Health and Safety Test**

Record cards issued since mid-1999 have a three-year expiry date.

Basic scaffolding card

In order to obtain a Basic Scaffolding Card, you need to:

- Achieve an NVQ/SVQ Level 2 in Scaffolding (where your training started after 01 September 1996).

- Complete Basic Scaffolding Part 1 and Part 2 courses, or Complete Assessed Route of Entry course at an Accredited Centre.

Record cards issued since mid-1999 have a five-year expiry date.

Advanced scaffolding card

In order to obtain an Advanced Scaffolding Card, you need to:

- Achieve an NVQ/SVQ Level 3 in Scaffolding (where your training started after 01 September 1996).
- Complete Basic Scaffolding Part 1 and Part 2 courses at an Accredited Centre.
- Complete the Advanced Scaffolding course at an Accredited Centre; or Complete an Assessed Route of Entry course at an Accredited Centre.

Record cards issued since mid-1999 have a five-year expiry date.

Construction Skills Certification Scheme (CSCS)

CSCS is 'owned' by the main industry organisations, such as the Major Contractors' Group. Many large clients, including many local authorities, are behind the scheme and an increasing number are demanding the proof of competence that CSCS offers before they allow firms to tender or workers onto their sites.

On-Site Assessment and Training (OSAT)

OSAT helps experienced workers get the qualifications to prove they can do the job. The process is carried out whilst your workforce is on site. With OSAT, existing skills and experience can be used to obtain a nationally recognised qualification such as an NVQ or SVQ.

6. Inspection

Although not a record of inspection a signed scaffold hand over certificate and scaffold plan should be obtained from the scaffold contractor before the scaffold is taken into use. The certificate should be retained on site and kept with the inspection records.

The scaffold should be inspected in accordance with the requirements of the Work at Height Regulations 2005, Regulation 12.

The scaffold should be inspected:

- Prior to being taken into use for the first time;
- After any alteration or adverse weather;
- After any event likely to affect its stability;
- Regular intervals not exceeding 7 days.

The inspection record should be made available on site.

A system should be in place to communicate (such as a scaffolding tag procedure) whether the scaffold is safe for use, its duty rating/suitability, i.e. access, general purpose or heavy duty.

GUIDANCE - DETAIL

In planning your work you should take into account the following guidance, as detailed under the headings:

- scaffold plan (often known as a 'method statement')
- scaffold sign
- scaffold design
- stability and testing
- security procedures
- physical protection
- raising and lowering of materials
- lighting, electrical hazards
- work near asbestos containing materials.

7. Scaffold Plan

In producing a scaffold plan you should identify any significant hazards, determining who can be affected and evaluate what risk the hazard pose in practice. This is called a risk assessment.

The scaffold plan should take account of the risks identified by the risk assessment and communicate the safe system of work to those undertaking it (SG4 and SG23).

The scaffold plan is an effective way of providing information to employees about how work is expected to be done and precautions that should be taken.

The scaffold plan, which must be site-specific, should address the following issues:

- Name of the scaffold supervisor and/or person responsible for managing work
- Name of the person responsible for managing the site
- Who is to use the scaffold and for what
- Programme and sequencing of works to ensure a systematic and logical approach
- Delivery arrangements for materials
- Where to start erection of scaffolding
- Proposed working hours for erection and dismantling
- Local factors such as overhead cables, roadways, schools, work close to water, etc.
- Public protection
- Fall protection
- How the scaffold is to be stabilised
- Ground preparation
- Is scaffold to be sheeted, if yes who is responsible for design?
- Is scaffold to be used for advertisements if so who is responsible for design?
- Waste removal
- Inclement weather
- Emergency procedures including out of hour telephone numbers
- Scaffolders' welfare arrangements
- Arrangements for handing over scaffold to use
- Pre-start briefing, so that the plan is communicated to all operatives

Your completed 'scaffold plan' should be appended to the permit application form.

8. Information to be displayed

A suitable sign must be affixed to part of the scaffolding structure in a position that can be clearly read by pedestrians.

Information to be contained on that sign must include the following:

- Local Authority with name who has given the authority
- Name of Client
- Name of Principal Contractor and Scaffold Company
- Emergency 24 hr contact number
- Number of ties, where required

Logo etc	Scaffolding Information
CONTACT DETAILS IN CASE OF EMERGENCIES	
Site Owner	Name: Tel no.
Principal Contractor	Name: Tel no.
Scaffolding Contractor	Name: Tel no.
Local Authority	Name: Tel no.

Scheme Ref.	SCAFFOLD	'x'-height15.0
Sign Reference	BLACK	SIGN FACE
Letter colour	WHITE	Width 585mm
Background	BLACK	Height 515mm
Border	non-reflective	Area 0.30sq.m

9. Scaffold Design

The Work at Height Regulations 2005 require that scaffolds be designed and constructed to a generally recognised standard, or be designed and calculated to ensure that it is fit for the intended use, stable and of adequate strength. In simple terms, scaffolds must be erected in accordance with British and/or European standards, national industry guidance or manufacturers' instructions. Adequate planning should foresee whether it would be possible to conform to these generally recognised standards and, if this is not possible (or as the standard dictates), then appropriate design is required.

Design and calculations

The level of design input required can vary significantly; from full engineers' calculations and drawings and design checks for complex or unusual structures, to a sketch showing a simple design detail to confirm a minor variation from the recognised standard.

Design competence

When selecting a scaffold design engineer a combination of engineering qualifications and scaffolding industry experience is required to be deemed competent.

Generally recognised standards

BS EN 12811, Part 1: 2003 *Temporary Work Equipment: Scaffolds Performance requirements and general design*, is a new standard within the UK and represents a significant change to the traditional way that scaffolds are designed and constructed. Officially the British Standard for traditional tube and fitting scaffolding, BS 5973: 1993 has now been withdrawn as it conflicts with the new European Standard. However, BS 5973 will continue to be a preferred specification, until BS EN 12811 becomes established.

The National Access and Scaffolding Confederation (NASC) has produced a new Technical Guidance Note on the use of BS EN 12811-1, TG20:05 – *Guide good practice for scaffolding with tubes and fittings.*

Proprietary system scaffolds (e.g. Kwikstage, Cuplok, Haki, Layher, etc) have to be designed and tested in accordance with BS EN 12810 and BS EN 12811: 2003. All manufacturers must provide detailed information for the safe erection and use of prefabricated scaffolding systems, usually in the form of instruction manuals and technical files. These instructions should include standard configurations and maximum loads that can be applied. Where the instruction can not be adhered to design advice should be sought from the manufacturer.

Design control procedures

Scaffolding contractors must ensure they make suitable arrangements to control the issue and use of drawings, manage variations to the design, competence of scaffolders and adequate supervision for the erection in accordance with the design and special arrangements for commissioning and handing over designed structures.

Designers' consideration of hazard and risk

Architects and designers must consider temporary access as part of their design considerations under the Construction (Design and Management) Regulations 1994.

10. Guidance on Stability, Bracing and Testing During Scaffolding Works

Scaffolds are only rarely independent structures. General practice is to attach a tie every 4 metres on alternate lifts. The ties are coupled to the scaffold as close to the junction of standard and ledger (node point) as possible. As many ties as possible should be 'positive' or 'two-way', rather than 'simple friction' or 'one-way'.

Due to the different nature of structures there are a variety of different ties to take advantage of the opportunities:

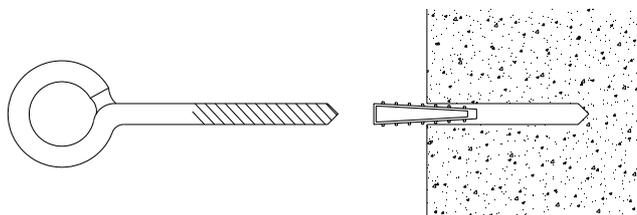
Selection of Ties

The stability of a scaffold structure is dependent, among other things, on the security of the anchors used to tie it back. The type of tie and anchor should be selected to suit the tying requirements and the nature of the building facade. Refer to TG4:04 — *Anchorage Systems for Scaffolding*.

Ties are a means of resisting inward and outward movement of scaffolds. They must be made using 'right angle couplers'. The strength of the structure being tied to must be established. This should be considered at the design stage.

Through ties

These are put through structure openings, such as windows. A vertical inside tube crossing the opening is attached to the scaffold by a transom and a crossing horizontal tube on the outside called a bridle tube. The gaps between the tubes and the structure surfaces are packed or wedged with timber sections, to ensure a solid fit. Safe working capacity, 6.25 kN.



Note: 100% proof testing is required with plastic inserts.

Box ties

These are used to attach the scaffold to suitable pillars or comparable features. Two additional transoms are put across from the lift on each side of the feature and are joined on both sides with shorter tubes called tie tubes. When a complete box tie is impossible an L-shaped *lip tie* can be used to hook the scaffold to the structure, to limit inward movement an additional transom. A *butt transom* is placed hard against the outside face of the structure. Safe working capacity, 6.25 kN; Double tied: safe working capacity, 12.5 kN (two tubes and couplers).

Lip tie

This is an L-shaped arrangement to hook scaffolding behind building elements such as sills or lintels. Inward movement resisted by a butting transom. Safe working capacity, 6.25 kN.

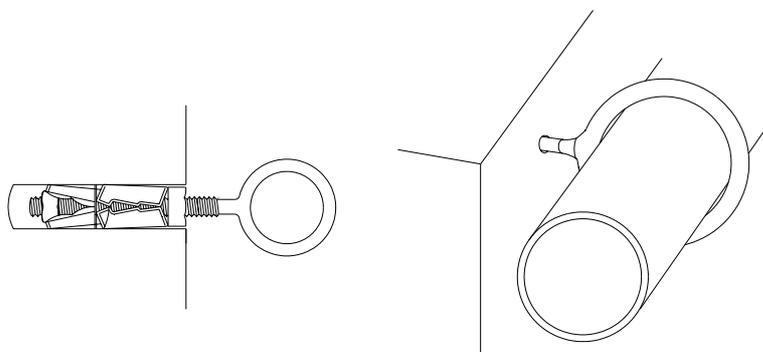
Reveal tie

This is the least 'invasive' tie. These use an opening in the structure but use a tube wedged horizontally in the opening. The reveal tube is usually held in place by a reveal screw pin (an adjustable threaded bar) and protective packing at either end. Transoms tie tube links the reveal tube to the scaffold. Reveal ties are not well regarded; they rely solely on friction and need regular checking so it is not recommended that more than half of all ties be reveal ties. Safe working loads: 3.25 kN (Friction); 6.25 kN (behind a load bearing feature).

Anchor ties

Also called *bolt ties*, these are ties fitted into holes drilled in the structure. A common type is a ring bolt with an expanding wedge which is then tied to a node point (Ref TG4:04, *Anchorage Systems for Scaffolding*).

- Provided by casting in, or drilling, and subsequently fixing a threaded anchor into the structure
- Attachment of the scaffold is by means of a ring bolt
- Dependent on the structural condition of the material
- Safe working capacity 6.25 kN, typically
- Pull out tests should be undertaken (3 ties must be tested if there is between 5, 6 up to 20 ties. After that it is 5% of the overall ties in the building if one fails then increase the percentage to 10%, if one still failing then investigate the cause and review the types of ties being used.)
- Useful at the design stage if further scaffolding is required during the life of the structure
- Screw ties in brickwork- take care to determine safe working load which may be less than 6.25 kN (**If in doubt** consult screw fixing supplier and/or manufacturer)



Expanding Anchor

Considerations for the selection of anchors for tying scaffold structures:

- Type of linkage to the scaffold structure
- Base material and suitability of the structure
- Working load compare with allowable load
- The need for testing
- The way loads are transferred through the ties and the direction they are applied.

If it is not possible to use a safe number of ties, **rakers** can be used. These are single tubes attached to a ledger extending out from the scaffold at an angle of less than 75° and securely

founded. A transom at the base then completes a triangle back to the base of the main scaffold.

Tie Patterns

The tie pattern will be determined by various factors such as the geographical location of the scaffold, the height of the scaffold, whether sheeting or debris net required, etc. Ties should be installed and tested progressively during the erection process.

Ties - General Rules

- Ties should be left undisturbed for the life of the scaffold
- *Moveable ties* should be replaced prior to moving
- Planning is essential as tie removal will make the scaffold less stable
- The spacing and number of ties should be specified in the design and stipulated in the scaffold plan
- Tie tubes should be clearly distinguishable e.g. painted or tagged.

Bracing

- Bracing is essential to stiffen the structure wherever practicable, be divided into a complete series of triangles by braces.
- Ledger bracing runs diagonally from ledger to ledger or standard to standard in zig zag fashion
- Facade bracing either runs across the face at 45° or zig zag fashion.
- For a long façade, bracing should return to the bottom of the scaffold. The number of un-braced bays should not exceed 4 in total.
- For long facades with many bays (greater than six bays) a plan brace must be introduced every four bays
- Bracing should be provided at 30 m intervals
- Joints in bracing should be made with sleeve couplers
- If a scaffold cannot be tied on every standard at the tying level, plan bracing can be substituted
- Bracing should not be removed to allow passage of materials

The loads are generally in accordance with BS EN 12810-1, 2003 (guidance on which is provided in NASC's TG20). **The maximum load capable of being carried should be drawn to the attention of the Client prior to erection of the scaffold.**

Note due to the technical complexity of the above engineering advice must be sought at all times, the above is merely guidance.

11. Security Procedures

Scaffold access should be secured when not in use to prevent un-authorised access onto scaffolding. Ladders should be kept in a storage compound or container.

Consider enclosing the base of the scaffolding to prevent climbing, especially near occupied premises.

Consider the environment particularly with respect to pedestrian and vehicle movements and during school holiday periods.

Debris chutes should be removed or protected either by providing lids or covers etc.

All tunnels should be adequately lit with an even surface.

Fence off the area and provide alternative routes, which are clearly signposted and avoid additional crossing of the road wherever possible.

The procedures should contain what arrangements are in place to maintain the measures in place for security.

Examples of what are considered to be acceptable standards are shown below:



12. Physical Protection

Scaffolding operations and the use of scaffolding in public areas can present significant hazards to the general public and users of the highway. High standards of physical protection, effective systems of work and supervision are required. This section of the guide highlights some of the main physical protection measures that must be considered for scaffolding on the public highway or other public access areas (e.g. pedestrian streets, courtyards, public parks and gardens etc).

Vehicles

Consideration should be given to providing additional protection against impact damage by vehicles. For example: Restricting the speed of vehicles and/or diverting traffic away from scaffolds; installing adequately anchored timber baulks as physical protection at vulnerable points. Care should be taken to avoid risk from projections at higher levels, taking account of the potential height of passing vehicles.



Scaffolding Operations

During the erection, altering and dismantling of scaffolding measures should be taken to exclude the public from the work area and where possible a distance around it. The principle hazards are falling materials as they are handled by the scaffolders and structural stability of the scaffolding during erection, altering or dismantle. The work should be adequately planned and the risks assessed to include all necessary measures to protect the public. The measures that should be considered include:

- Segregation of work area using barriers, fencing or hoarding.
- Temporary pavement or street closures (in accordance with Highways Act and Local Authority requirements).
- Quiet hour working where pedestrians and vehicle traffic is reduced.
- The use of suitable pavement frames and protection fans so work can continue above.
- Warning signs
- Use of temporary traffic management controls during hazardous operations (traffic lights, stop/go boards, sentries etc.)

Some specific protection measures will be specified in the scaffold permit and must be strictly adhered to. The work should be adequately supervised to ensure that the measures agreed are implemented satisfactorily and maintained throughout the duration of the works.

Pedestrian Access, Frames and Gantries

Where pedestrian access is permitted beneath a scaffold the following measures need to be taken:

Visibility and access for persons with disabilities:

Effective measures should be taken to ensure all elements of scaffolding that may be a hazard to pedestrians are clearly visible. There should be no projecting tubes or fittings that may constitute a risk to people or vehicles.

It should be noted that persons with visual impairment are at greater risk. Therefore measures should be taken to avoid these risks e.g. provision of tapping boards at ground level where the scaffold creates a sharp change in direction of the pedestrian route. Tapping boards should also be provided at the kerbside.

Wherever possible walkways should be kept clear of obstructions and changes of level that would create hazards for wheelchair users.

Protruding tubes etc.

Ensure there are no protruding tubes or fittings that could cause pedestrians injury or damage to property e.g. clothing. Use timber panelling (in accordance with the hoarding and panelling requirements), protective cladding, tube end-caps and thread caps on fittings, as appropriate. Where access proves hazardous e.g. diagonal braces causing an obstruction, then access must be restricted with guardrails or other suitable barrier.

Head clearance

A minimum head clearance of 2.4 metres (8 feet) should be maintained. (Note that the maximum height of base lift for pedestrian access of a tied independent scaffold is 2.7 metres unless otherwise designed.)

Scaffold width

The minimum width of a scaffold base with pedestrian access beneath should be 1.1m unless otherwise agreed, however this is only suitable for areas with low pedestrian volume. In high pedestrian volume such as high streets and shopping areas this width may need to be up to 3.5metres. In such cases pedestrian frames and gantries to support structures or temporary office accommodation needs to be specially designed.

Crash decking

To prevent debris falling from the scaffold into the pedestrian access below, the lift above the pavement access, frame or gantry must be close-boarded for its full width and abut to the building/hoarding etc. The risks from falling objects need to be assessed when design or scaffold permit, a double layer of scaffold boards with an impervious membrane between (e.g. heavy gauge plastic sheeting) should be used. Hoard boarding or expanding foam may also be required to cover all smaller or odd shaped gaps. Drainage will also need to be considered.

Scaffold Fan, Netting & Sheeting

Falling objects from scaffolding presents a significant risk of injury to the users of the highway. Suitable and sufficient physical protection measures need to be provided to prevent objects falling from scaffolding and protection of the public if there is risk of falling objects.

Protection Fans

The design of protection fans required will depend upon the nature of materials likely to fall (e.g. paint drips, masonry, scaffold components, construction materials etc.). Fans must be designed and constructed strictly in accordance with NASC Technical Guidance Note No.20: 2005 (TG20:05), *A Guide to good practice for tube and fitting scaffolding*. Unless otherwise stated in the design or scaffold permit, a double layer of scaffold boards with an impervious membrane between (e.g. heavy gauge plastic sheeting) should be used. Net fan systems used for personal protection and falling objects must be tested and installed in accordance with BS EN 1263 Parts 1 & 2 and must only be used for the purpose they are designed.

13 Raising and Lowering Materials

The methods used to raise and lower scaffolding components will be determined by the safe system of work, i.e. undertaking risk assessment's and method statements etc and the extent & type of structure being worked on and the equipment available.

The methods available will generally fall into one or other of the following categories:

- Handballing ("chaining")
- Light line ("hand line")
- Gin wheel and rope
- Forklift truck
- Tower crane
- Goods hoist

Below is guidance for each of the methods. Legislation and company policies may dictate other methods.

Handballing

Sometimes called "chaining", this is the method normally adopted on the first few lifts of a scaffold. The team will form a chain up the face of the scaffold & pass tubes & boards from one to another.

It is imperative that operatives wear a safety harness and are attached to a suitable anchor point via their lanyard when necessary during this operation. When passing the equipment both hands should be used at all times to maintain full control of the equipment. A good method of communication to use is for the person receiving the equipment to call "*my tube and board*" when they are ready & in control.

Light line

Sometimes called a "hand line", is often used on scaffolds. Tubes, boards or sacks of fittings are tied to the lower end of a 13 mm fibre rope (suitably tested with relevant certificates) and then hauled up by hand. In addition, a safety harness and lanyard may need to worn suitably attached. It is essential to adopt a safe position when doing this. This involves using a standard for support, one leg being placed behind the standard to act as an anchor and prevent the lifter from overbalancing.

Knots

The main two types of knots used to secure equipment are the timber hitch this is used to secure scaffold boards and the rolling hitch this is used to secure scaffold tubes.

Fitting Bags

All loose scaffold fittings should be raised or lowered in a fitting bag with the appropriate safe working load (SWL) marked on them, and appropriate certification regarding their testing and examination.

Gin wheel and rope

Commonly used to raise and lower materials which are tied to the end of an 18 mm diameter rope (suitably tested with relevant certificates), passed over a single wheel pulley. The gin wheel (pulley), suitably tested with relevant certificates, is fixed to a horizontal cantilevered tube. The material is then hauled up by the person on the ground to working level. Two types

of gin wheel available are the "ring" type and the "hook" type. The ring type is designed to fit over a scaffold tube. The hook type only differs at the point of suspension; instead of a ring the pulley is suspended by a hook.

The gin wheel is usually suspended from a cantilevered tube. This should be properly fixed with right angle couplers, preferably to two standards, approximately 2 metres above the landing place. If the cantilevered part of the tube is unsupported, the point of suspension should not extend more than 750 mm. Check fittings should be fixed either side of the suspension point to ensure the gin wheel cannot move.

The fibre rope should have a minimum diameter of 18 mm and a stopper knot (usually a figure of eight knot) tied near the ends so that it cannot run through the gin wheel.

The maximum load that should be raised or lowered by a gin wheel at any one time is 50 kg. The load imposed on the scaffold will be double that what is being lifted. Reference should be made to the Manual Handling Regulations.

Care should be taken particularly when lowering materials. If the weight is too great either the person lowering the load will weigh less than the load and will be pulled off their feet; or the complete assembly may collapse.

Fork lift truck

These are frequently used to raise and lower scaffold material to and from the scaffolding structure. It is essential that the fork lift truck driver is made aware of the mass of the load. He should also know the load bearing capacity of the scaffold (which should be designed).

When a fork lift truck is used for loading a platform, a second front ledger is sometimes fitted, in front of, and below the main front ledger to provide extra protection from impact and as a "check fitting".

Tower crane

These are often used to raise and lower large loads of scaffolding material, during the construction of multi-storey blocks. The driver should be made aware of the weights involved again and it is essential to ensure that the scaffold is capable of bearing the load.

Extreme care should be taken by the person receiving the load. The crane driver has only a limited control and the receiver can easily be knocked from the platform.

Goods Hoists

These should only be used to raise or lower material that can be safely contained within the area of the hoist platform. This rule generally restricts the scaffolder to very short tubes, (transoms) and scaffold fittings however see NASC Guidance Note SG26.05 for guidance on long tube hoists.

14 Guidance on Lighting for Scaffolds and Hoarding

The council is empowered under the provisions of the Highway Act 1980, to require the erection of a hoarding at the site of building operations carried out in any street and, where necessary, the provision of a platform with handrail to serve as a temporary footway.

Lighting

- All scaffolds that are erected on the highway must be adequately lit, with the lights positioned at a height and spacing as agreed with the Local Authority.
- Red lighting must be used on the corners and at changes of direction.
- If the scaffold is situated on a pedestrian walkway white lights must be used and if on traffic side (within 0.5 metres of the kerb face) amber lighting is to be used.
- A safe pedestrian walkway must be provided at all times.
- Clips and other fittings must be placed so as not to cause a risk to any pedestrians.
- All lighting must be maintained at all times and ensured that it is effective particularly during hours of darkness.

15. Electrical Hazards

The nature of scaffolding operations greatly increases the risk of coming into contact with electric current from overhead electric power lines, lighting and alarm systems and lightning strikes.

Work near to or beneath overhead electric power lines should be carried out after the lines have been made dead, or otherwise made safe, to eliminate the risk of electric shock. Where this is not possible it should be recognised that scaffold structures erected underneath live overhead lines have increased risk because the safe clearances are reduced.

In cases where it is necessary to work near to or beneath live overhead lines, the owner³ of the line(s) should be consulted about the proposed working methods and additional precautions will be required when erecting and dismantling to avoid the use of components that can reach high enough to contact the overhead line⁴.

Where lighting is fitted to scaffolds, then the metal parts of the scaffold should be bonded and earthed to prevent stray current paths. Use of low voltage equipment and supplies, wherever possible, is good practice and the low voltage lead should be the longer, with a short mains voltage lead connected to the nearest convenient supply.

All scaffolding structures that are at risk from lightning strikes should be properly earthed, particularly those on the roofs of high buildings. Butting on to the building surface is not adequate to ensure that the lightning will not pass through a person's body if he is in contact with the metal framework.

Scaffold associated with power line construction or adjacent to power lines or electrical transmission feeders must be earthed.

Advice is available in BS 6651: 1999 '*Code of practice for the protection of structures against lightning*' and NASC Guidance Note, SG3:02 '*Earthing of Scaffolding Structures*' and HSE Guidance Note GS6, '*Avoidance of danger from overhead electric power lines*'.

WARNING

Advice on avoiding danger from underground services, whilst earthing, is available in HS(G)47, '*Avoiding danger from underground services*' (HSE, 2000).

³ Normally the local Distribution Network Operator.

⁴ Or going close enough to it to cause flashover.

16. Guidance on Scaffolding Works and Asbestos

Ancillary Licence

An Ancillary Asbestos licence issued by the HSE, Asbestos Licensing Unit (ALU) will be required by the scaffolding organisation for the erection, modification, maintenance, inspection or dismantling of a scaffold if:

- The scaffold will form any part of the framework or all of the support from which an asbestos enclosure will be built for the purposes of "working with asbestos".
- The scaffold is to provide access/egress (on asbestos or otherwise) where it is foreseeable that asbestos is likely to be disturbed by the scaffolding activities.

A licence will not be required for normal scaffold operations on a location that is likely to have asbestos present unless the work falls into the above criteria.

If the company is undertaking the scaffolding works **and** the asbestos related works, there is only a requirement to notify the enforcing authority **once**; stating both the scaffolding and the asbestos details.

However, if the scaffolding company is acting as a sub-contractor providing the scaffolding **only** and it falls into the above criteria, they will need to notify the scaffolding works separately via an ASB5 notification form.

Notification of scaffolding work must be given to the relevant enforcing authority **14 days prior to commencement**; documents to be included in the notification are the ASB5, Plan of work (method statement) copy of asbestos licence.

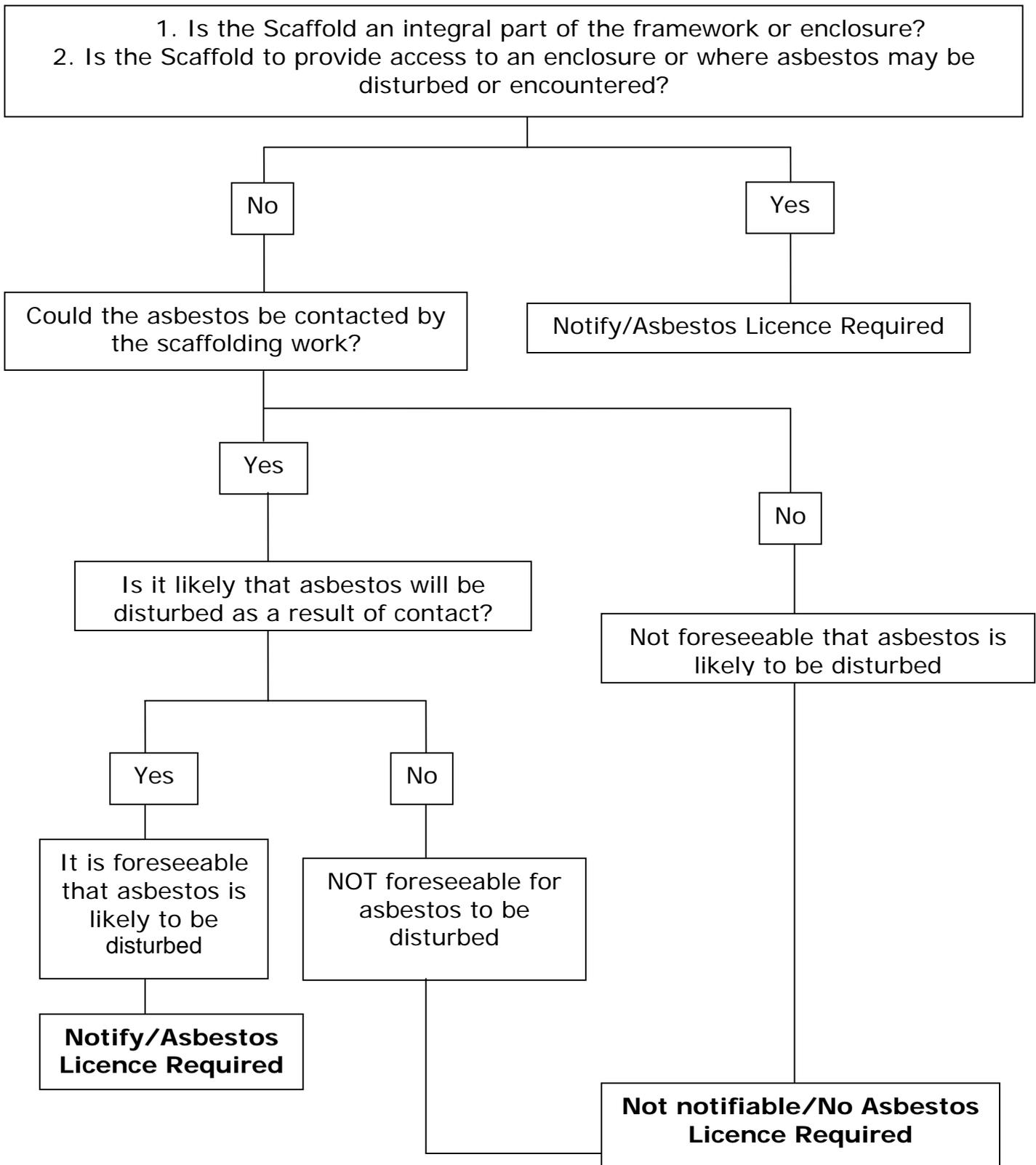
Training

Asbestos Awareness Training

- Hazards of asbestos and Asbestos related diseases
- Use, inspection and maintenance of RPE
- Decontamination procedures
- How to wear and remove disposable overalls to prevent further contamination
- Disposal procedures
- Emergency procedures
- Guidance on the building of enclosures

Further clarification can be sought by obtaining a copy of memo 3/03 from the Asbestos Licensing Unit (HSE) on the subject of Asbestos Licensed Scaffolders

When to Notify



ANNEXES

Powers and Duties
Emergency Procedures
References

20. Powers and Duties

Local Authority

(To be added).

Health and Safety Executive

(To be added).

21. Emergency Procedures

In the event of an emergency, the following contact numbers may prove useful:

Local Authority

(To be added).

Health and Safety Executive

(To be added).

22. References

Acts

Highways Act, 1980

Road Traffic Act, 1991

Road Traffic Regulations Act, 1984 (Chapter 8)

Disability Discrimination Act, 2003

Regulations

Town and Country Planning (Control of Advertisements) Regulations, 1969/1975

Work at Height Regulations, 2005

Construction (Design and Management) Regulations, 2007

Guidance

GS6, *Avoidance of danger from overhead electric power lines* (HSE)

HS(G)47, *'Avoiding danger from underground services'* (HSE, 2000)

HS(G)150(rev), *Health and safety in construction* (HSE, 2001)

HS(G)151, *Protecting the public: Your next move* (HSE, 1997)

HSE Information Sheets

CIS10, *Tower scaffolds* (HSE, 6/02), <http://www.hse.gov.uk/pubns/cis10.pdf>

CIS49, *General access scaffolds and ladders* (HSE), <http://www.hse.gov.uk/pubns/cis49.pdf>

Standards

BS EN 1263, Part 1: 2002, *Safety nets – safety requirements – test methods*

BS EN 1263, Part 2: 2002, *Safety requirements for erection of safety nets*

BS 6651: 1999, *Code of practice for the protection of structures against lightning*

BS EN 12810-1: 2003, *Facade scaffolds made of prefabricated components. Products specifications*

BS EN 12811-1: 2003, *Temporary Work Equipment: Scaffolds Performance requirements and general design*

Industry Guidelines

TG4:04, *Anchorage Systems for Scaffolding* (NASC)

TG20:05, *A guide good practice for scaffolding with tubes and fittings* (NASC) REVISION

SG4:05, *The use of fall arrest equipment when erecting, altering and dismantling scaffolding* (NASC)

SG23:03, *Safe System of Work when Erecting and Dismantling Birdcage* (NASC)

SG3:02, *Earthing of Scaffolding Structures* (NASC)

NASC Guidance Note SG26.05 entitled Scaffolding & Hoists.

Addresses

Construction Industry Training Board (National Construction College), www.citb.co.uk/ncc

Health and Safety Executive, www.hse.gov.uk

National Access and Scaffolding Confederation (NASC), www.nasc.org.uk