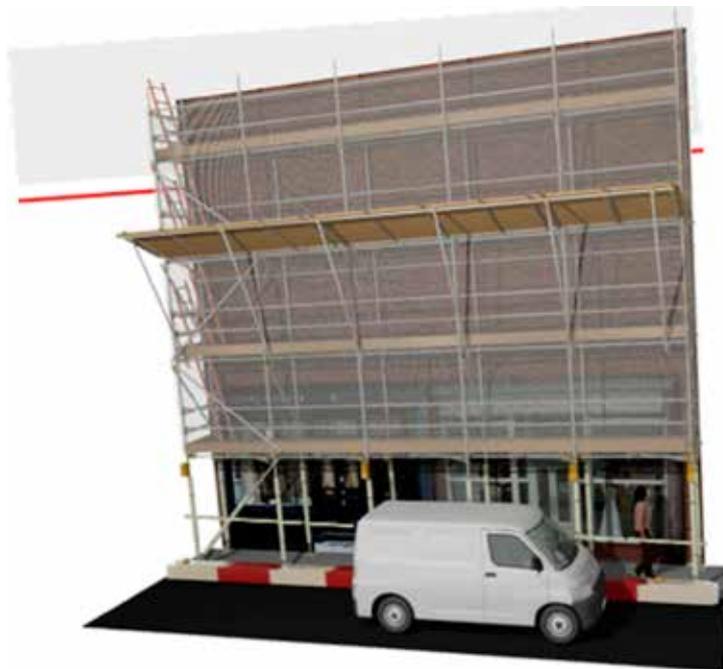


1. INTRODUCTION

Legislation, including the Construction (Design and Management) Regulations (CDM 2015) and Management of Health and Safety Regulations (MHSW 1999), outlines that clients, main contractors, designers, users (e.g. other contractors on site who will use the scaffold) and scaffold contractors have a duty to consider and control the risks to the general public as early as possible, at the enquiry stage, planning stage (i.e. planning, pavement license, traffic management, segregation, hoarding, lighting, signage, etc) and throughout the life of each project.

The general public will not be aware of the hazards associated with scaffolding activities making them more vulnerable to the possibility of injury; therefore adequate planning involving all parties is essential for the safe erection, use, alteration, maintenance and dismantling of scaffold structures in close proximity to the general public and others who may be affected by scaffolding operations.

This NASC guidance document has been produced to give an overview of the planning required and the range of precautions that need to be considered to eliminate the risk of harm (including that of controlling the risk of falling material and transport accidents).¹



¹ Many of the pictorials in this guidance document have been taken from existing NASC Guidance, such as TG20:13.

Please note that the TG20:13 illustration on the front page has been amended to show the provision of a single guardrail to control access and footfall under the scaffold, because of the risk of tripping over the baulk timber. Where guardrails are required (in consultation with the local authority issuing the Highway Licence) there may be a requirement for suitable breaks in the handrail and baulk (e.g. for escape route or for access) at intervals dependant on the length of the scaffold.

For further information regarding protecting the public from construction work, please also refer to current health and safety legislation, British and European Standards and Guidance information in the reference section.

2. WHERE INTERFACE WITH THE PUBLIC CAN OCCUR

Interface with the general public can occur in many different environments whilst carrying out scaffolding operations, including for example:

- On a public pavement or road;
- At a premises or location that is visited or accessed by the public;
- At schools and residential and care homes;
- At a domestic household for a private customer.

Every project will need to be risk assessed on its own merits and this document provides guidance on protecting the general public and others.

Please see example below from TG20 of a “pavement lift”, which pictorially documents typical safety requirements. A pavement lift allows members of the public – after erection – to walk under the first lift of scaffolding on a public pavement. Free passage is achieved by omitting the ledger bracing below the first lift and by increasing the first lift height to provide sufficient headroom, with additional ties or plan braces fitted to stabilise the scaffold.

The pavement lift may be supplanted with safety features such as lighting, protective boarding or foam padding around the uprights etc).



It is vitally important that, from the time of the initial scaffolding enquiry the scaffold contractor makes all parties aware of the hazards and risks as well as the control measures that will be required to ensure safe erection, use, alteration, maintenance and dismantling of the scaffold.

3. OVERVIEW OF TYPICAL HAZARDS, RISKS AND CONTROL MEASURES

The client, main contractor, designer, users (e.g. other contractors on site who will use the scaffold, such as bricklayers), scaffold contractor and other interested bodies (including the local authority where necessary) should consider the hazards, risks and control measures required for the works.²



Typically, the main phases are:

- Scaffold erection;
- The scaffold in use (after handover) by operatives working for the main contractor and other contractors;
- Scaffold alterations carried out by the scaffold contractor after initial handover;
- Scaffold dismantle phase.

Typically, the main scaffolding hazards and risks involving the public are:

- Transport (risk of scaffolding vehicles injuring pedestrians);
- Work at height during scaffolding operations (with risk of falling scaffold tubes, boards and fittings);
- Work at height during building works (other trades working on completed scaffold with risk of their materials falling e.g. bricks);
- Pedestrians (risk of personal injury walking into scaffolding structures).

Typically, the main control measures are:

- Client and main contractor control measures (e.g. hoarding, site segregation, pedestrian and vehicle segregation);
- Methodical scaffold erection/dismantle operations (promoted and driven by CISRS courses);
- Exclusion zones (sometimes with lookouts);
- Out of hours working;
- Protection gantries;
- Pavement scaffolds;
- Protection fans;
- System protection fans/nets installed and raise progressively with the rising scaffold and progressively lowered with the dismantled scaffold;

² Note: Scaffold contractors carrying out scaffolding operations on domestic properties may be the only contractor on site and therefore under CDM 2015 take on the duties of the main contractor/designer (as another contractor – e.g. a roofer – will subsequently work on site afterwards).

For domestic properties and clients, the NASC consider that the scaffold contractor's Risk Assessment/Method Statement (RAMS) incorporates the required elements of the CDM Construction Health & Safety Plan (e.g. induction, design, health & safety, security, first aid and welfare arrangements as per SG18) and no further paperwork (aside from a site visitors' book for longer term projects) is required for compliance with CDM.

- Brickguards; and
- Sheeting and netting.

4. SPECIALISED CONTROL MEASURES

DBS (Disclosure and Barring Service), formerly CRB³

Additional control measures may be required of scaffold contractors when working on schools, residential and care homes. There may be a requirement when working for local authorities to comply with the Safeguarding Vulnerable Groups Act 2006 as well as compliance with DBS, which was formerly the Criminal Records Bureau (CRB).

Tethering

Other control measures sometimes required for adverse weather conditions (e.g. very gusty weather) and/or for very high risk overhead projects (such as suspended/hanging scaffolds in built up city centres), may include, subject to a risk assessment, Tethered tools and Tethered tube, boards, fittings etc. Please see section **7. Tethering** for more information.

Note: Tethering of material should not be considered as a first option as it is labour intensive, introduces elements of complacency, and requires very high levels of supervision and there are often better ways to eliminate the risk of falling objects.

5. CLIENT, MAIN CONTRACTOR AND DESIGNER CONSIDERATIONS

The client, main contractor and designer should consider whether the risk to the public is high, medium and low and the required control measures that must put in place (e.g. physical protection methods such as protection fans, pavement lifts, protection gantries, pedestrian bridges and walkways or other methods to protect the public, such as exclusion zones).

Note: The client, main contractor, and designer have a duty to consider and control the risks involved in the erection and dismantling of scaffolding *and not just for the work to be carried out by their operatives on the completed scaffold.*

Where required by specific risks, clients, main contractors, designers and users should arrange for suitable control measures to be included at tender stage, such as for instance, protection gantries to protect the public during scaffolding operation. Such protection gantries should not be excluded from the tender because of a need to reduce the price or because the protection gantry is not required to prevent injury from, for example, painters' falling material.

For domestic clients a simple SSOW detailed in the Risk Assessment/Method Statement may arrange for the work to be carried out while the occupants are at work, but for more complex works, such as scaffolding in a busy high street, more control measures will be required.

For more complex works, the client, main contractor, designers, users and scaffold contractors should:

- Assess the risks and decide on control measures in consultation with users (e.g. other contractors on site who will use the scaffold, such as bricklayers), designers, scaffold contractor and other interested bodies (including the local authority where necessary);
- Inform neighbours of the works (and seek, where applicable, permission for protection fans to be erected in their airspace if that is required to protect others);
- Decide on the requirements of the pavement licence (e.g. include in the licence any required protection gantries, scaffolds and pavement scaffolds and protection fans);

³ Please note that England, Scotland, Wales and Northern Ireland have slightly different rules for disclosure.



- Ensure the planning and design also takes into account those with disabilities, including blindness, and does not include any additional risks to the disabled;
- Decide who is responsible for pedestrian and vehicle management;
- Consider the additional hazards that are created while the scaffold is being erected, modified or dismantled by the scaffold contractor and decide on appropriate measures (ideally planned at pre-tender stage);
- Consider the use of protection gantries, pavement scaffolds and protection fans and the size of any required exclusion zones.
- Where possible, work should be undertaken at times that reduce contact with the public (e.g. engineering hours, weekend work) with input from the local authority regarding noise restrictions), and warning signs must be displayed at each end of the structure to warn the public that works are in progress above;
- Consideration must be given to suitable barrier systems, which safely separate the pedestrians from any hazards and provides sufficient access for people using wheelchairs and those with prams or pushchairs. The NASC also recommend the use of black and yellow tape where required, but the local authority's Highway Agency will need to be consulted about their particular requirements;
- Where the public will walk under the first lift of scaffolding, a substantial close-boarded overhead covering must be provided to protect persons below from spillage of materials. This covering should be suitable to support any loads to be placed above it or materials falling on to it from above;
- Decide whether the scaffold requires hoarding (or if other safety measures can be used such as hazard tape (or preferably foam) around the standards up to 2.0m high, including any required to guardrails ledgers and braces at pavement level);
- Inform designers, users (e.g. other contractors on site who will use the scaffold, such as bricklayers), scaffold contractor and other interested bodies (including the local authority where necessary) of the plans;
- Enforce zero tolerance on unauthorised alterations to scaffolding carried out by other trades.

SG36:12

Unauthorised modifications to scaffolds

NASC

1. INTRODUCTION OF SAFE STRUCTURES

The consequences of any unauthorised alterations/modifications to scaffolds could potentially result in a fatality or serious injury to contractors, the general public or yourself and may result in damage to adjacent property.

The practice of interfering or modifying of scaffolds by non-qualified scaffolding operatives is unacceptable under any circumstances and may lead to prosecution by the enforcing authorities. Scaffolds should only be modified by competent scaffolders who have been authorised to do so by the scaffold contractor. It is also unacceptable for the client/user to authorise alterations without prior consent from the scaffold contractor as it may invalidate their insurance cover and could be an offence under Section 7 of the Health and Safety at Work Act. Most principal contractors now enforce a zero tolerance policy in regards to unauthorised scaffold interference by their contractors, and work closely with the scaffolding contractor to ensure it is applied.

The most common types of scaffold interference are the removal of scaffold structural ties by other trades, the removal of handrails and toe boards to allow materials to be loaded directly onto the working platforms and the undermining of the scaffold foundations by utility contractors.

Good planning and communication with all contractors will help prevent unauthorised scaffold modifications.

The guidance below will help the user in assuring that scaffold structures are, and remain, fit for purpose.

All scaffolds shall be erected in accordance with statutory requirements and in accordance with the manufacturer's instructions when using system scaffolds. Wherever possible NASC approved companies should be utilised.

All tube and fitting and system scaffolding of any height shall be erected, modified & dismantled by a Construction Industry Scaffolders' Records Scheme (CISRS) qualified scaffolder or trainee under the supervision of a CISRS qualified Scaffolder.

All mobile tower scaffolds shall be erected by a competent person who is in the possession of a PASMA qualification or other recognised qualifications.

All structures must be handed over by a competent person to the customer, in some cases a "tag" type system is used at the ladder access points which clearly shows the validity / suitability of the structure. It is a legal requirement within the Work at Height Regulations 2005 that all scaffolds must be inspected:

- Before it is put into use
- At seven day intervals until it is dismantled
- After bad or excessively wet weather or high winds or another event likely to have effected its strength or stability
- After any substantial additions or other alterations
- After unauthorised interference

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January 2012

- Client, main contractor, designers, users (e.g. other contractors on site who will use the scaffold), scaffold contractor and other interested parties – should consider the use of Protection Pavement Gantries, Pavement Lifts (close boarded platforms at first floor level to protect the public), Protection Fans, Brickguards, Netting, Sheeting as well as exclusion zones and out of hours working;
- It is vitally important that the full scope of the works is understood and where required by the type of works being undertaken (e.g. demolition) the correct sources of information are sought (please see references for examples).

Exclusion Zones

- Ideally the public should be excluded from the area of work and a sufficient surrounding area, with barriers installed to prevent access to hazardous areas (which can be combined with work in quiet times, subject to noise restrictions).

Pavement Lifts

- When it is not possible to exclude the public it may be necessary to provide an adequately protected thoroughfare below the scaffold. This may be in the form of a pavement lift, which provides clear access below the first lift by excluding the ledger bracing and providing 2.44 m to 2.7 m of headroom.

Pavement Protection Gantry

- Alternatively, it may be deemed necessary through the risk assessment – or because the Local Authority requires it – to provide a *pavement gantry*, which will typically be wider than a five board wide pavement lift and will provide additional protection with hoarding (which will require a design).

Brickguards, Debris Netting, Sheeting

- Other physical protection methods may also be required to prevent the public from being struck by falling objects or being affected by the environmental effects of the works. This will usually require all working lifts of the scaffold to be clad with brickguards, debris netting or sheeting. The choice of cladding depends on the type of work to be undertaken and the associated risks (which needs to be specified by the main client and agreed);
- Consideration is required for wet trades such as stone washing where water and chemicals can pour under the pavement lift.

Note: The use of brickguards, sheeting and netting on scaffolds provide less protection from falling objects during scaffolding operations as they are erected after scaffolding is erected and removed prior to dismantling scaffolding.



- However, brickguards, debris netting and sheeting can provide excellent protection on completed gantries and on scaffolds for other contractors' works, including many types of scaffold alterations carried out by trained CISRS Scaffold Operatives.

Protection Fans

- Where there is a risk of objects being dropped onto pedestrians or vehicles from the scaffolding, a protection fan should be provided. The fan should be installed as soon as is practical and remain in place during the erection and dismantling of the scaffolding structure.

Further Information (Gantries)

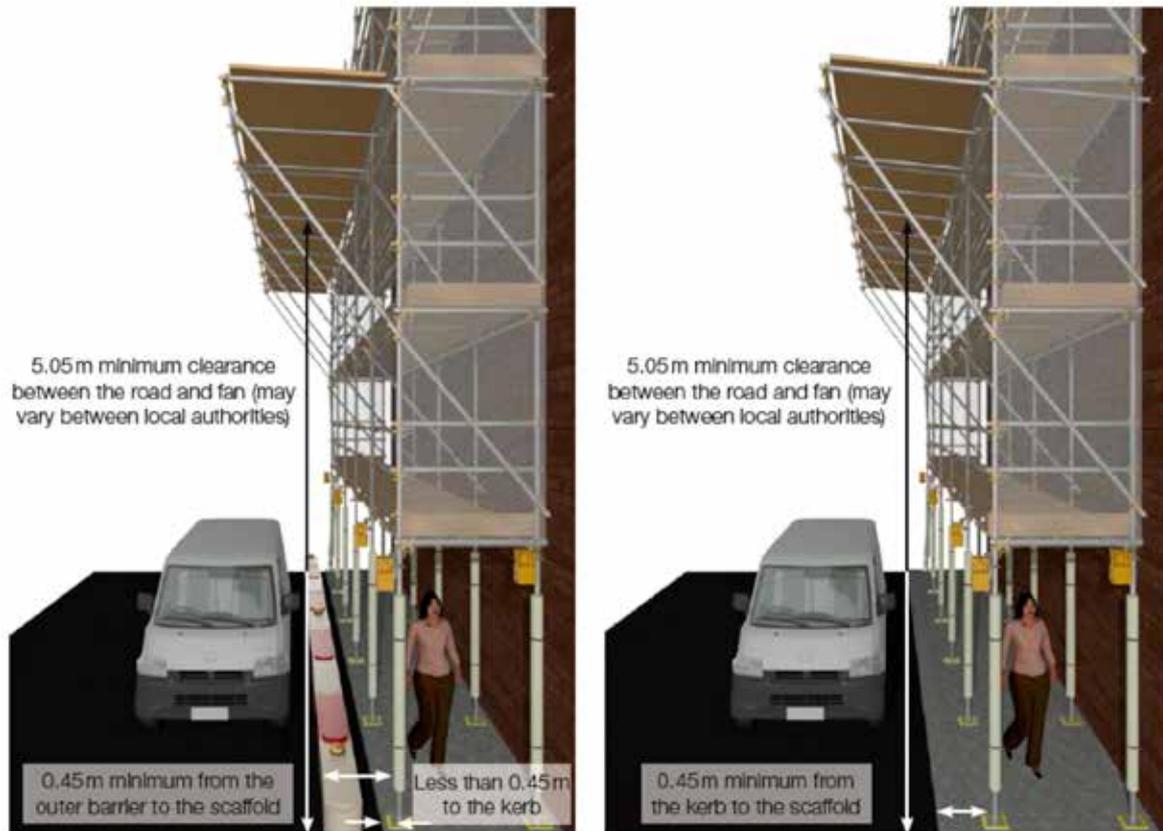
- Gantries are often the best option for providing protection for the protection of the public from falling material (and as such a scaffold will be typically wider than the independent access scaffold above it, enabling a greater thoroughfare for the public and a greater protection area);
- The thoroughfare should be constructed so that there are no tubes that impede the minimum 2.44 m headroom. If it is necessary to encroach on the clear thoroughfare for any reason, access to the area under the scaffold should be blocked and a safe alternative route should be provided for pedestrians. The alternative route should be at least 1.2 m wide and suitable for those with disabilities;
- The top lift of gantries are generally double boarded sandwiching a polyethylene sheet between the boards, preventing dust and fine materials from falling onto the pedestrians below with a perimeter guardrail with two to three toeboards high and/or with brickguards;
- Typically, a pavement gantry will be enclosed with hoarding;
- Where deemed necessary, hoardings and scaffolds must be adequately lit (electronically or battery) at all times between half an hour after sunset and half an hour before sunrise and fixed either end and at 4.0m centres (all projections must have red lights and white lights for pedestrians);
- Ensure minimum clearances are met (and please note that these may vary between local authorities);
- Sleepers or fenders may be required to be positioned independent of the scaffold against the kerb (especially in instances where the gantry is less than 450mm from the kerb).

Further Information (Pavement Lifts)

- Where not protected by hoarding, all standards that are adjacent to public access should be fitted with high-visibility hazard tape, or preferably foam padding, up to a height of 2.0 m;
- The scaffold should not have any sharp ends or unprotected nuts or bolts within 2.0 m of the ground level. This may be achieved by fitting plastic caps on exposed tube ends and using protective caps or wrapping for any fittings or threads that may cause injury or damage;
- The pavement lift must be free of trip hazards. Consideration is required for the sole boards, which are typically provided as high-visibility spreader plates under each standard. Alternatively, a continuous timber kerb can be provided that is 150 mm wide, to which the base plates can be nailed. The footway and carriageway must be maintained free of all equipment and materials;
- The needs of children, the elderly and the disabled should be considered, so for example ramps may need to be provided for wheelchairs and tapping boards may be useful to warn the visually-impaired of hazards. Tapping boards are a requirement of some local Highway Authorities so local regulations should be consulted.



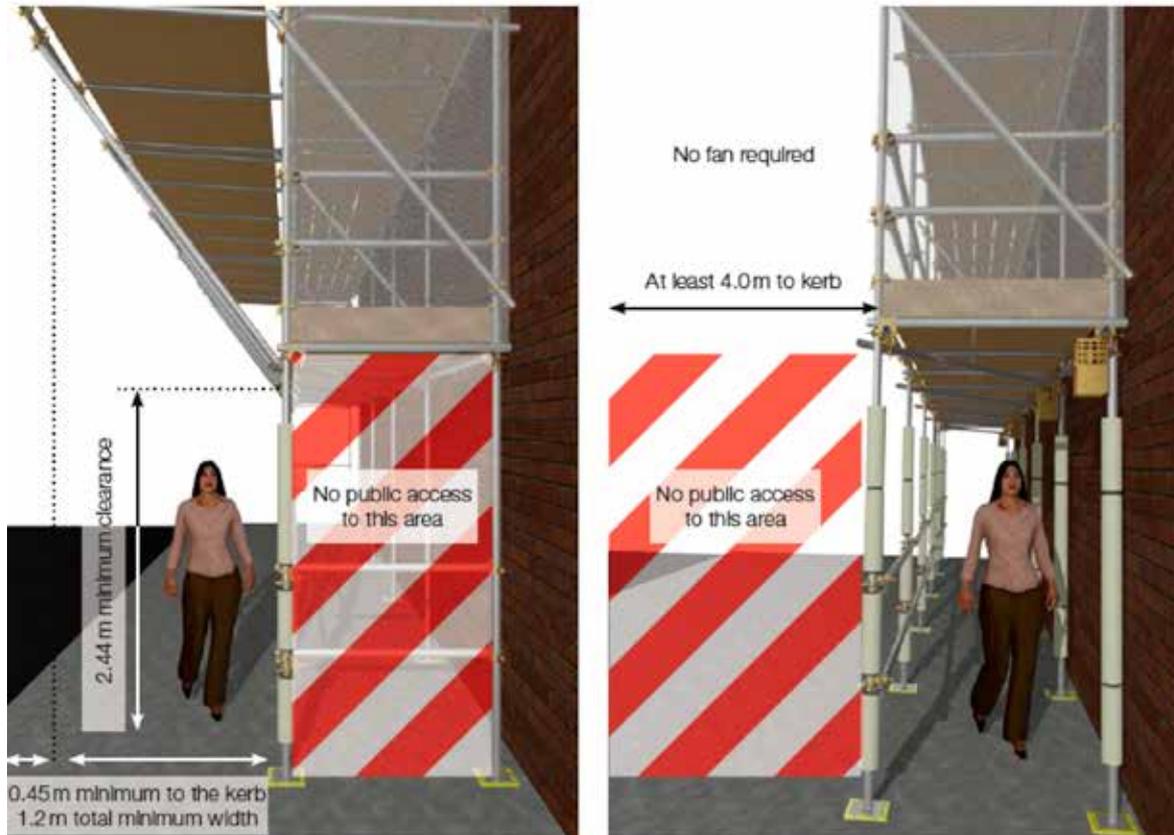
- Where deemed necessary, scaffolds must be adequately lit (electronically or battery) at all times between half an hour after sunset and half an hour before sunrise and fixed either end and at 4.0m centres (all projections must have red lights and white lights for pedestrians);
- Sleepers or fenders may be required to be positioned independent of the scaffold against the kerb (especially in instances where the external scaffold is less than 450mm from the kerb).



- Maintenance must be arranged for lighting, protection equipment (including hazard tape around standards up to a height of 2.0m or preferably foam around scaffolding, barriers, cones etc) during the life of the scaffolding on the project.

Note: The NASC recommend that the client and/or main contractor retain responsibility for maintenance for lighting and protection – especially for foam around scaffolding – as they can readily carry out daily monitoring and instigate repairs immediately.

- Protection for the public walking under pavement lifts (and sometimes gantries) are likely to require:
 - Protective caps or wrapping for any fittings/ threads at low level (to prevent injury or damage);
 - Fitted plastic caps on exposed tube ends.
- Ensure minimum clearances are met (and please note that these may vary between local authorities):

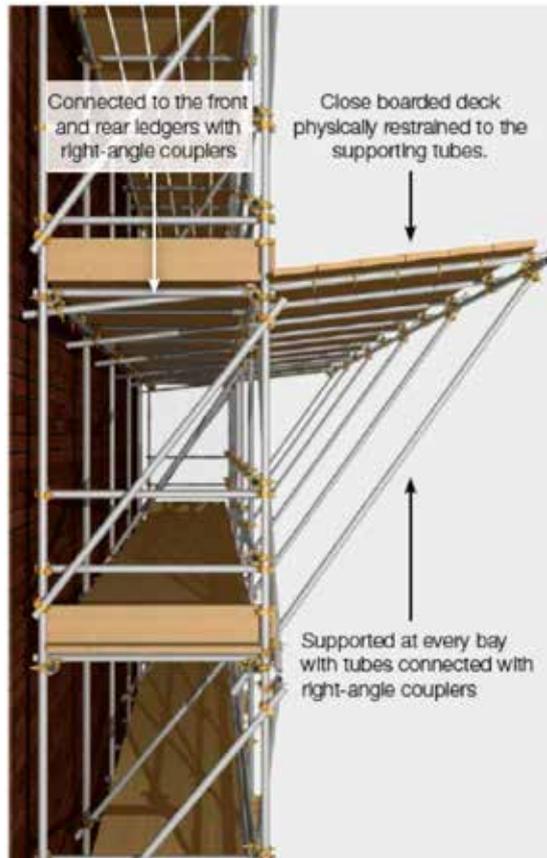


- Where Chapter 8 public management is introduced and a temporary walkway surface is provided it shall be of suitable materials that provide a slip resistant surface;
- Consider if the scaffold needs earthing (consult SG3 Earthing);
- Consider precautions to ensure that the surface water drainage of 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;
- Consider if the control measures required for scaffold operations are sufficient for other trades' activities or whether the finished scaffold needs to be sheeted/netted or have other additional control measures introduced.

Further Information (Protection Fans)

- Where required by the Risk Assessment, fans of adequate construction and projection should be provided, where necessary, to protect the public and prevent materials falling onto the footway or carriageway and some of these may require a design (unless the specification required is detailed in TG20);
- Protection fans should not inhibit the passage of pedestrians or vehicles. A fan that is installed to protect pedestrians only should be at least 2.44 m above the pavement level, with a minimum clear distance of 0.45 m between the end of the fan and the edge of the pavement;
- A fan that does not provide this clear distance of 0.45 m from the road must be installed at a height of at least 5.05 m, measured from the highest point of the road or kerb so as to clear tall vehicles, although some local Highway Authorities may require a greater height;
- Consider how many protection fans may be required (e.g. the Risk Assessment may require a protection fan every 6.0m in the scaffold's rising height);
- The Risk Assessment may also require toeboards and/or double boarding/plywood cover (which will require a design as this falls outside of TG20);
- Boards must be restrained from wind dislodgement;

- Please see an example below of a TG20 compliant protection fan fixed to a TG20 compliant scaffold.



- Where required by the Risk Assessment, system protection fans should be erected in compliance with the manufacturer's safety manual, which has been manufactured in accordance with relevant standards (see references for further information);
- Such system protection fans can be raised with the erection process and subsequently lowered for the dismantle operation (for further information about safety nets please contact FASET (Fall Arrest Safety Equipment Training), details in Reference Section).



There are many suppliers of System Fans as shown above

For overhead scaffolds (especially for suspended/hanging scaffolds that are “unseen” by the public as these are at high level):

- Including applicable items above and the following:
- Decide on the level of segregation at ground level and warning signage (because the public are unlikely to notice suspended/hanging scaffolds etc);
- Consider the size of the exclusion zone and if tethering will be required.

6. USERS' CONSIDERATIONS (OTHER CONTRACTORS ON SITE)

- Users (e.g. other contractors on site who will use the scaffold) must inform the client and main contractor of any specific hazards to do with their trade and any required control measures;
- Enforce zero tolerance on unauthorised alterations to scaffolding carried out by their operatives;
- Issues that will need to be controlled include the following:
 - Removing/discarding items required for protection of the general public (e.g. brickguards removed);
 - Cutting holes in sheeting/netting to allow “ventilation” or to enable them to look out from the sheeted scaffold;
 - Scraping excess render on scaffold tubes, which pose a hazard to scaffold operatives when subsequently handling the tubes with hardened render edges, increases the risk of dropping tubes etc;
 - Leaving pieces of timber, brick, rebar, pieces of metal and bolts in the ends of scaffold tube (which, when dismantled by scaffold operatives, have the potential to fall to the ground causing injury);
 - Leaving debris on the scaffold on completion of their works – especially small items like bolts – (which, when dismantled by scaffold operatives, have the potential to fall to the ground causing injury);
 - Ensure that their operatives are made aware that alteration or removal of ties/bracing is strictly prohibited (with scaffold contractor supplying the client, main contractor and users with NASC SG36 as a proactive measure where required).
- Users (e.g. other contractors on site who will use the scaffold) should inform all parties as early as possible if there is a change in design, which might affect or subsequently the control measures to prevent risks to the public;
- Users should also inform the client and main contractor as early as possible if they are likely to overrun (so that the Highway Licence can be amended).

7. TETHERING (where required by the site specific Risk Assessment/Method Statement (RAMS))

This revised guidance now includes this section on tethering e.g. tethered tools (which should be tethered to the scaffolder), as well as guidance on the tethering of tube, boards and fittings before it is fixed in position for adverse weather conditions (e.g. very gusty weather) and/or for very high risk overhead projects such as hanging/suspended scaffolds in high risk areas such as built up city centres, where required by the site specific Risk Assessment/Method Statement (RAMS).

However, please note that Scaffolders are trained on their CISRS Scaffold Courses to erect scaffolds methodically and safely. They seldom drop tools or materials. Therefore the tethering of tube, boards and fittings is not a universal remedy and should not be considered as a first option. It is labour intensive, can create tripping and other handling hazards, introduces elements of complacency, requires very high levels of supervision and there are often better ways to eliminate the risk of falling objects.

Use of tethered tools and/or materials should not be used as a means to justify allowing multiple trades to work in one area – especially below live scaffolding work; or to allow work to continue in very windy, wet or cold conditions; or to allow a poor sequence of erection to be used (i.e. outside that set out in NASC Safety and Technical Guidance, SG4 and TG20).

Neither should main contractors/users specify tethered tools for low-level, lower risk work – such as new build housing estates, for instance, where traditional control measures such as exclusion zones and protection fans are long established and perfectly suitable.

Instead, each project should be risk assessed on its own merits and thus main contractors, designers, users and scaffold contractors should collectively identify the level of risk associated with working without tethered tools or materials and then decide whether further control measures are still needed.

Where a suitable site specific risk assessment requires tethering, then all parties should consider the following.

Tethered Materials

Where the site specific RAMS requires tube and boards to be tethered, the method statement should detail the tethering arrangements. This may specify a rolling hitch for tube and a timber hitch for scaffold boards secured by rope to a fixed anchor point – such as a ledger secured with double couplers – by the shortest length practicable. Alternatively, the RAMS may stipulate the tethering of a Jordan clamp to a fixed line, which can then be clamped to each tube prior to installation, to reduce the repetitive tying and untying of knots on scaffold tubes.

It is important that the rope is suitable for the potential impact loading (e.g. be a minimum of 6mm, have a certificate of conformity, and have an inspection regime in place such as pre-use, weekly recorded and six monthly thorough inspection).

The site specific RAMS may require single scaffold fittings to be tethered to the scaffolder prior to fixing them in position, but the NASC recommend that scaffold tube/boards are never tethered to scaffolders.

The RAMS should also state how hoisted material is safely transferred from vertical haul to horizontal – e.g. after being hoisted by gin wheel and rope – and how it is safely transferred along a lift. The risk of scaffolder dropping material when carrying tubes/boards along a completed lift should be considered and if tethering is required. If it does, then the risk of tripping over trailing rope and the potential impact loads on the tether if dropped should be considered and control measures put in place where required.

Tethered Tools

The site specific RAMS may require the tethering of hand and power tools.

All hand tools may be required to be tethered or simply the primary tools (e.g. the risk assessment may specify that untethered tape measures can be used at ground level to set out scaffolds, after which scaffolders will use tethered spanners and spirit levels to complete the scaffold).

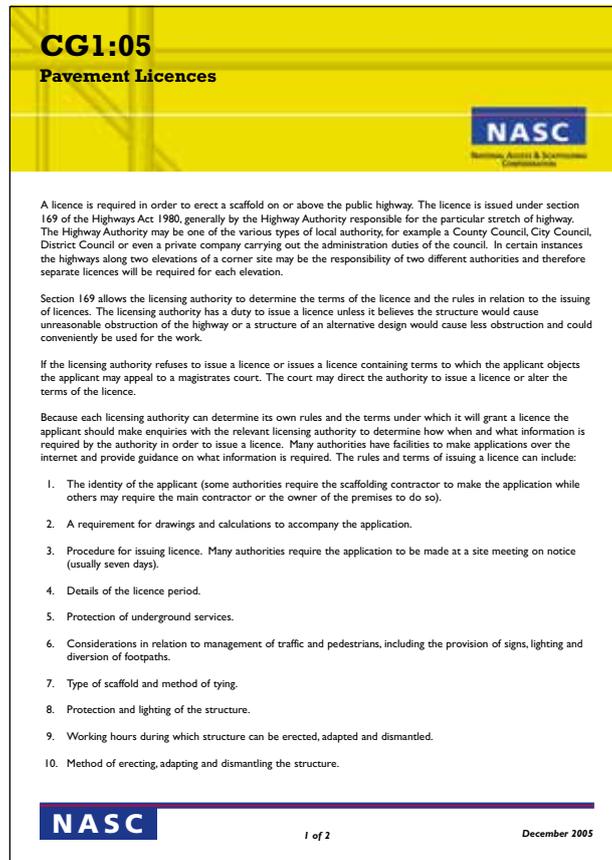


Use of tethers has become more common where impact drivers are routinely used. This is because the tool is quite heavy compared to a podger/spanner and may need to be used at an awkward angle. Selection of a suitable tool is also important – the interchangeable socket and the battery should be fixed to the tool by a positive attachment.

Where tool tethering is selected – as one of a number of other appropriate control measures – the scaffolding contractor should ensure that the tethers are purchased from a reputable supplier (e.g. Certificate of Conformity and Test Certificate) and an appropriate inspection system is selected with advice from manufacturer and the company’s Health & Safety Advisor (e.g. pre-use inspection, weekly inspection by foreman/lead scaffolder, quarterly inspection by company). The risk of tethers being snagged, or of the tool “springing” back on the tether and striking the scaffolder will also need to be considered and control measures put in place where required.

8. PAVEMENT LICENCES

- An appropriate licence may be required (and the licence's requirements should be adhered to);
- Please see NASC Guidance CG15 Pavement Licences (latest revision) for further guidance (which was produced following consultation with the HSE, the Highways Authority, the Joint Authorities Group UK and the National Traffic Managers):



- Before erecting scaffold structures on a public pathway or adjacent to a highway, a temporary pavement or street closure licence will be required before scaffolding operations commence (which can be arranged by the scaffold contractor or preferably by the client/main contractor, who will understand the full requirements for the project);
- Please be aware that different authorities may have different requirements for scaffold erections on or near highways (including the provision of fans/hoardings/sleepers);
- The NASC recommend a meeting with the Highway Inspector, the client's representative, scaffold contractor and other interested parties, so that all conditions are understood and can be met (including programme requirements). When erecting scaffold structures in these environments, consideration should be given to the NASC guidance on pavement licences;
- As detailed earlier in this guidance, general licence requirements stipulate scaffolds on pavements to be kept back from the kerb or highway a distance of 500mm (but this measurement can vary, and please also consider the camber of the road, which may make high sided vehicles lean towards the scaffold);
- 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 Highway Licence application;

- Unless otherwise agreed, a minimum 1.22 metres (4ft) 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.

Note: Highway Authority restrictions may apply (please consult the local authority).

9. SCAFFOLD CONTRACTOR'S CONSIDERATIONS

- As detailed above, the scaffold contractor – with the client, main contractor, designers, users, and other interested parties – should consider the hazards, risks and control measures required for all of the works, ideally meeting together to plan the works;
- It is the duty of the scaffold contractor to inform all parties of the hazards, risks and control measures required;
- Decide in consultation whether a pavement licence will be required (which could be arranged by the client/main contractor or scaffold contractor);
- Following this consultation, the scaffold contractor will then be responsible for the safety of the public for works that it controls;
- The scaffold contractor should prepare a site specific Risk Assessment/Method Statement (RAMS) for the project to ensure that all hazards and risks are identified and suitable control measures put in place (which must be subsequently briefed to all scaffold operatives prior to works commencing, with signed records retained);
- Please consult the NASC Guidance and Template, **SG7 Risk Assessment & Method Statements** for further guidance.

Note: If the scaffold contractor considers that the work requires, for instance, protection fans but the client, main contractor and users do not consider them a requirement, then the NASC recommend that the scaffold contractor should not commence the works until the matter is resolved (as the safety of the public should be of paramount importance).

- Detail in the RAMS who is responsible for which control measures (e.g. client or scaffold contractor) for the protection of the public (as well as proposed dates, timing and duration allowed for the erection and dismantling of the scaffold);
- The timing and duration required to erect, alter or dismantle any scaffold may also require careful and adequate planning to ensure that the general public are not put at additional undue risk during such operations.

Note: It is important that the Highway Authority's Pavement Licence's stipulated dates are adhered to.

- Specifically, the responsible person will need to ensure that the risks associated with Traffic Management, including the installation, alteration and removal of the temporary traffic and pedestrian management aspects associated with the scaffold erection/dismantle, are assessed and are eliminated or reduced. Any remaining significant risks should be highlighted and subsequently controlled by the careful planning and management of the works;
- Ensure that where required suitable design requirements are put into place, paying particular attention to ledgers, transoms, ties and bracing at ground level (please refer to the section on design requirements) so that the public's thoroughfare is kept clear of any projecting tube or board, to avoid potential injury;
- Ensure where beams are detailed in the design – e.g. to span manhole covers, running parallel with the thin external support scaffold – that they are erected over 2.4m in height to ensure safe head room (or where they are erected lower, the access through the scaffold is blocked off so that members of the public cannot climb under the beams, risking injury);
- Consider close boarding the first lift of an independent scaffold or pavement gantry, using either double boards with polythene sandwiched between or single boards, polythene and plywood cover, to stop any debris falling below;

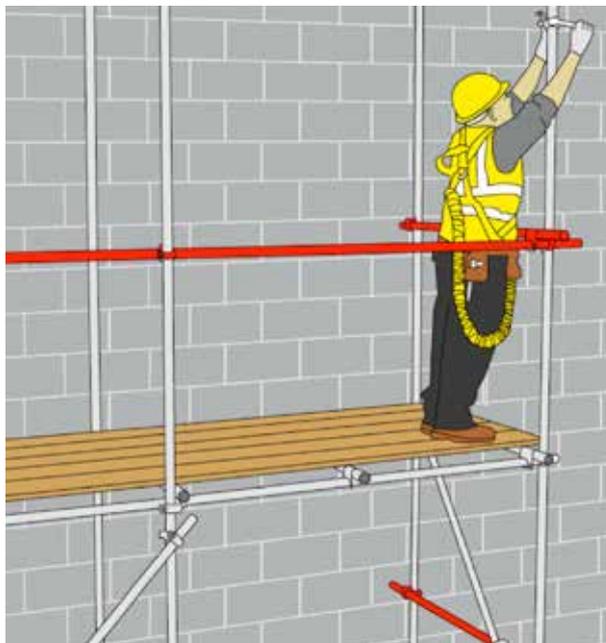
- Consider incorporating scaffold fans or proprietary protection fans, crash decks and tunnels as early as possible when erecting the scaffold structure and remove fans, crash decks and tunnels as late as possible when dismantling the structure (but ensure the structural integrity of the scaffold is maintained);

Note: consider fully boarding each lift as the scaffold progresses, with toeboards and with ladder hatch closed (or if one is not available, consider temporarily boarding over the ladder access) to reduce the risk of material falling through and from the scaffold.



- Consider fully boarding each lift – even if the boarding is raised progressively – to reduce the risk of material falling through inside the scaffold (which could then ricochet on the lift(s) below and fall on the external face of the scaffold to ground).
- Install the toeboards as soon as possible during erection and store any scaffold materials safely on the scaffold, close to the toeboard leaving an access way for operatives to work safely;
- Consider using temporary brickguards which can be raised progressively (and lowered progressively) with each lift;
- Where required, install debris netting, sheeting as soon as possible during erection and removed them as late as possible when dismantling;
- When the scaffolding structure is being erected or dismantled it is essential that the scaffold contractor removes and secures all ground level ladders whenever scaffolds are left unattended. Once handed over to the client and main contractor it is then their responsibility to manage the access to and from the scaffold structure.

Note: where scaffolds are not fully boarded, or no toeboards are used, consider additional control measures to reduce the risk of material falling from the scaffold.



- Where toeboards are not used by scaffolders on non-working lifts, consider ensuring that all fittings are kept in proprietary sacks and tube is stacked and secured in a safe manner butting against the inside standards with no risk of material rolling and falling.

10. SUPERVISION OF SAFE SCAFFOLD ERECTION AND DISMANTLE OPERATIONS

- CISRS Scaffold operatives are trained on the techniques to prevent falling material, but the following are the main issues that can develop from poor supervision:
 - Material stacked unsafely at ground level;
 - Poor knots when using the Gin Wheel & Rope;
 - Poor stacking of scaffold material on the scaffold (increasing the risk material can roll off the scaffold);
 - Poor erection/dismantle techniques (e.g. not keeping one hand on a tube while erecting or dismantling it);
 - Unsafe work acts such as throwing material off a scaffold (also sometimes referred to as “bombing”).

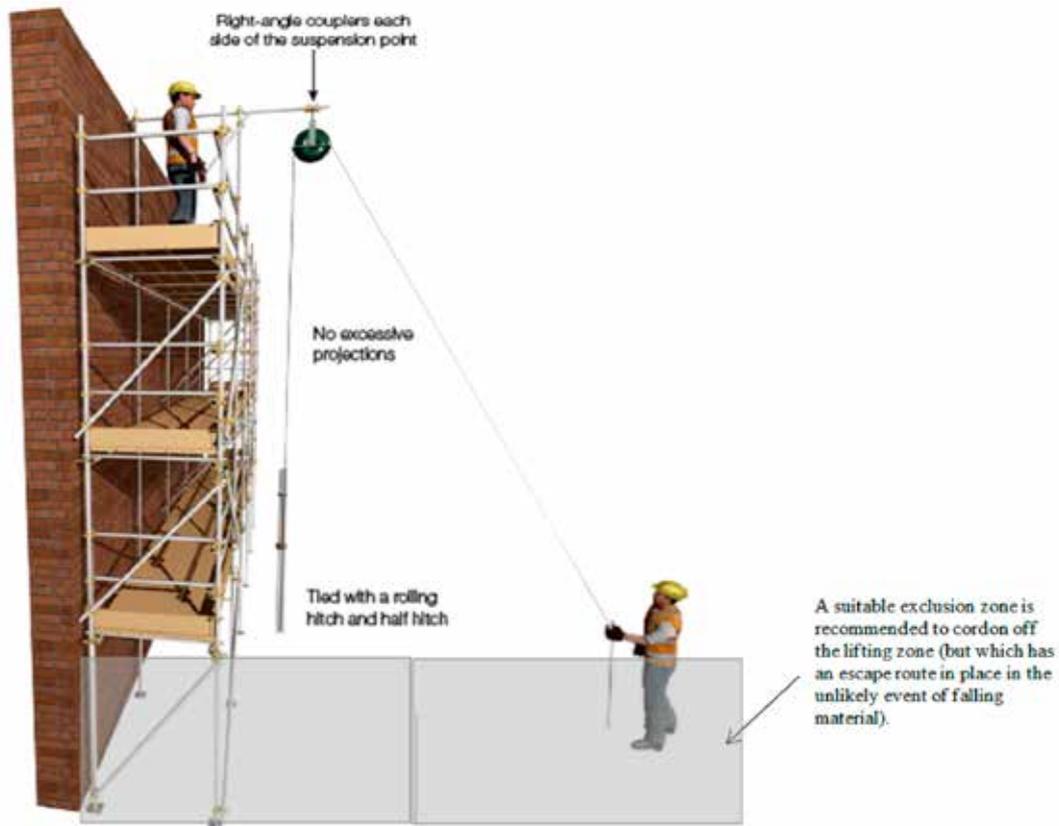
To prevent the risk of falling materials, supervisors and charge hands should:

- Brief operatives at the beginning of every shift;
- Continually assess the risk of falling materials and supervise the operatives working correctly;
- Halt work if there has been a significant change in circumstances or an unexpected hazard occurs, which require further control measures to be put in place;
- Maintain a high level of housekeeping and keep the scaffold and ground level tidy and free from debris at all times;
- Ensure material is stacked neatly and safely at all times;
- If material is temporarily stood up at ground level ensure it is stood against a ledger and a protruding transom and not left unattended (and never allow material to be stood against a wall or lorry where it can slide and topple);
- Ensure material stood up at ground level is secured at break times at ground level (e.g. tie off with rope) and laid flat at the end of the shift;

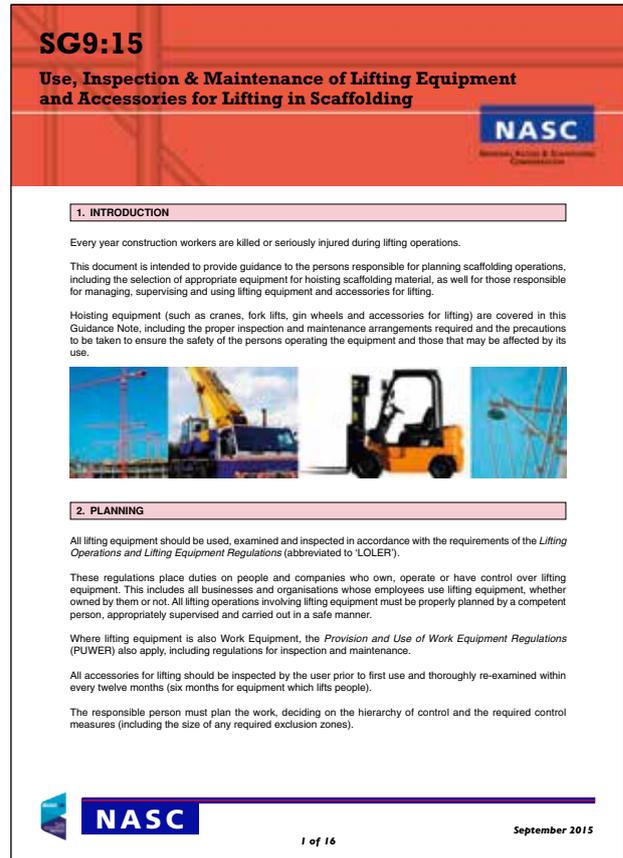
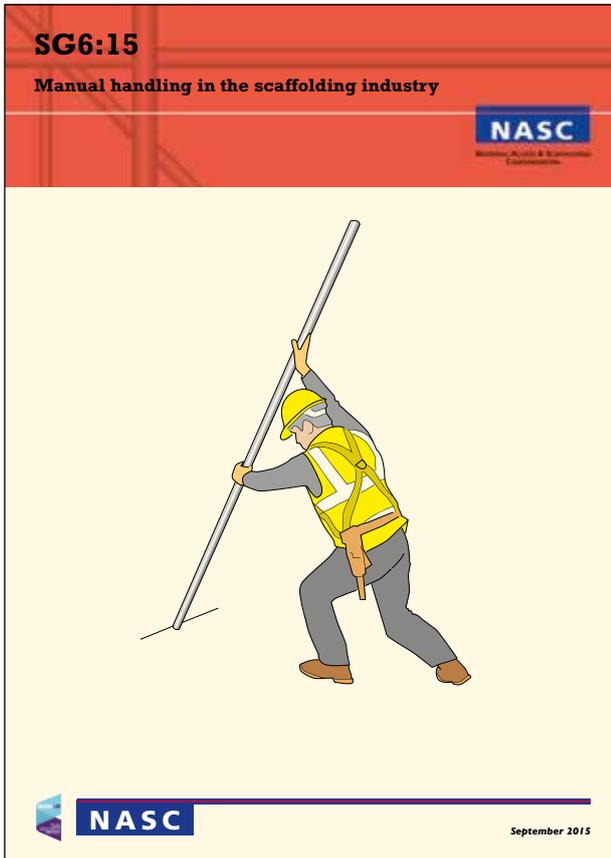
- Ensure scaffolding is hoisted as per NASC Guidance **SG6 Manual handling in the scaffolding industry and SG9 Use, Inspection & Maintenance of Lifting Equipment and Accessories for Lifting in Scaffolding** at all times;
- Ensure proprietary sacks and system hooks for hoisting system components are used (and never use improvised equipment (e.g. old caribineers which do not close or use lanyard hooks as lifting equipment));
- Wherever practical, instruct scaffold operatives to fix material immediately after it is hoisted to the top;
- Ensure everyone takes care carrying material along scaffold lifts (especially for those with only a scaffolders' single guardrail and with no toeboard), ensuring both hands are used to hold tubes/boards when carrying and stacking them (so there is no risk of a tube falling on a lift, rolling and dropping from height);
- Avoid standing material up and keep all scaffold lifts tidy with scaffold material stacked safely;
- Where required, fix additional puncheons where you stack material so tube cannot roll over toeboard or roll inside;
- Erect the scaffold methodically (and ensure scaffold operatives keep one hand on a tube while erecting it);
- Similarly, when dismantling scaffolding, always keep one hand on any tube being dismantled (and do not simply – especially for system scaffolds – simply release the top and let it swing, as this is highly likely to cause the material to fall and cause accidents);
- Fix all tubes as soon as possible (e.g. do not leave 1.5m transoms loose on ledgers as these can roll off and cause harm);
- Ensure operatives only hemp tubes (or remove hems) within their capabilities. The NASC recommend that for work in close proximity to the general public scaffolders avoid humping 6.4m (21') tubes – or only hemp up to a height of 500mm – as there is a risk that dropped tube will fall over protection fans;
- Never work unsafely or behave in such a way that can endanger others (e.g. throwing material off a scaffold, sometimes referred to as “bombing”).
- Avoid introducing trip hazards into the scaffold structure (e.g. lapped boards, except on returns) and ensure you maintain a safe access way past all stacked material;
- At break times and at the end of the shift ensure that all material is stacked safely and that there is no risk of the wind dislodging materials including boarding.

11. HOISTING AND LOWERING OF SCAFFOLD MATERIALS

- The following items should be considered and where required included in the Risk Assessment/Method Statement, which will be briefed to the scaffold operatives:
- When raising or lowering scaffolding materials the operation must be carried out in an area which excludes the public from the work area (e.g. by erection of barriers and warning signage diverting the public away from scaffold operations) with an exclusion zone arranged around the lifting zone.



- If not practicable to put full control measures in place (e.g. a full exclusion zone in place), consider further control measures e.g. posting a member of staff at an appropriate location to inform the general public of the operations being carried out and to direct them away from the working area when hoisting of materials or similar high hazard works is necessary;
- All work must be carried out in compliance with NASC Guidance **SG6 Manual handling in the scaffolding industry** and **SG9 Use, Inspection & Maintenance of Lifting Equipment and Accessories for Lifting in Scaffolding** at all times, with the correct scaffold knots used to hoist and lower materials.

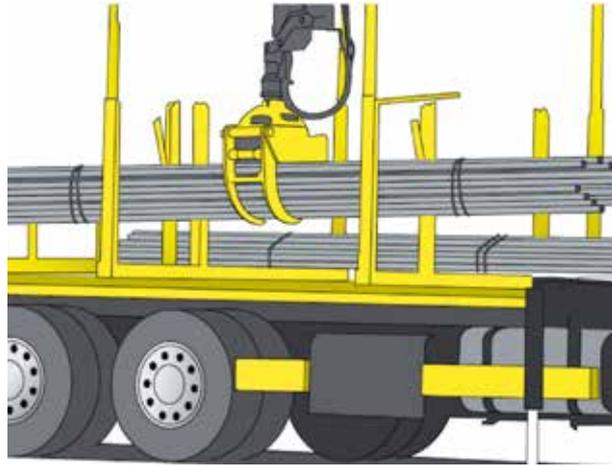


Note: The Safety Guidance documents cited above are regularly updated and therefore it is important to check the NASC website for the latest copy (<https://www.nasc.org.uk/>).

12. TRANSPORT MANAGEMENT (INCLUDING DELIVERY AND SUBSEQUENT CLEAR OF SCAFFOLD MATERIALS)

- The following should be considered and where required included in the Risk Assessment/Method Statement, which must be briefed to operatives, with signed records retained:
- Arrange or comply with the client/ main contractor's Traffic Management Plan;
- Consideration should be given to quiet time delivery / collection periods to reduce the interface with general public (bearing in mind any noise restrictions), such as for example not arranging deliveries close to schools during children's arrival and departure times during term time;
- Upon arrival, the vehicle driver should be met by the scaffold charge hand (and client's traffic marshal if applicable) to ensure a controlled delivery / collection is carried out;
- The provision of physical barriers and warning signage (e.g. "Keep Out", "Exclusion Zone", "Men Working Overhead", "Banksmen Operating in this Area" etc) must be considered to restrict general public access into the loading/unloading area;
- Only trained personnel to carry out mechanical lifting and any banking/swinging of materials who must ensure that the swing area is safe and well controlled to avoid collision with passing traffic or pedestrians.





- When carrying materials at shoulder height special care must be taken when walking around blind corners (e.g. angle the tube so that it is above head high); it may also be necessary in particularly vulnerable areas that any long materials will need to be carried by two people, one at each end, or to have a lookout in place;
- Further guidance on the transportation of scaffold materials can be found in NASC Guidance **SG30 Working from vehicles**.

13. REFERENCES AND FURTHER READING

Legislation

- The Health and Safety at Work Act 1974;
- Construction (Design and Management) Regulations 2015;
- Highways Act 1980;
- Road Traffic Regulations Act 1984 (Chapter 8);
- Safeguarding Vulnerable Groups Act 2006;
- The Local Authorities (Transport Charges) Regulations 1998;
- The Management of Health and Safety at Work Regulations 1999;
- Work at Height Regulations 2005.

British and European Standards

- BS 6187:2011 Code of practice for full and partial demolition (example of a document a scaffold designer may consult when assessing risk of falling material and likely trajectory);
- BS 8411:2007 Code of practice for safety nets on construction sites and other works;
- BS EN 1263-1:2014 Temporary works equipment, Safety nets, Safety requirements, test methods;
- BS EN 1263-2:2014 Temporary works equipment, Safety nets, Safety requirements for the positioning limits;.
- BS EN 12810-1:2003 Façade scaffolds made of prefabricated components. Product specifications;
- BS EN 12810-2:2003 Façade scaffolds made of prefabricated components. Particular methods of structural design;
- BS EN 12811-1:2003 Temporary works equipment. Scaffolds. Performance requirements and general design;
- BS EN 12811-2:2004 Temporary works equipment. Information on materials;

- BS EN 12811-3:2002 Temporary works equipment. Load testing;
- BS EN 12811-4:2013 Temporary works equipment. Protection fans for scaffolds. Performance requirements and product design;

Guidance

- Fall Arrest Safety Equipment Training (please see website: <http://www.faset.org.uk/>).
- INDG163 – Five steps to risk assessment;
- HSE Website and Guidance Documents, including HSG151 Protecting the public;
- HSG151 – Protection of the Public (HSE guidance);
- NASC Guidance Documents, including the following:
 - CG15 Pavement Licences;
 - SG3 Earthing;
 - SG6 Manual handling in the scaffolding industry;
 - SG7 Risk Assessment & Method Statements;
 - SG9 Use, Inspection & Maintenance of Lifting Equipment and Accessories for Lifting in Scaffolding;
 - SG10 Use of Brickguards;
 - SG30 Working from vehicles;
 - SG36 Unauthorised modifications to scaffolding;
 - TG20:13 Operational Guide.

HSE Reports

- HSE Evaluation of safety nets by experiment, RR835;
- HSE Scaffold Fan Testing, Report Number HSL/2003/17;
- HSE Report: http://www.hse.gov.uk/research/hsl_pdf/2003/hsl03-17.pdf

Appendices

Appendix A – Typical Highway Licence Example (just for information)

Appendix A – Typical Highway Licence Example

Please do NOT use – each council will use a different form (from one to three pages) and have different requirements. Please consult the local authority for further guidance.

CONTROL OF SCAFFOLDING ON HIGHWAYS HIGHWAYS ACT 1980 SECTIONS 169, 172, 173 & 174 APPLICATION FOR A LICENCE TO ERECT AND MAINTAIN SCAFFOLD/HOARDING/ USE MOBILE TOWER SCAFFOLD/MOBILE ACCESS PLATFORM OR STORE MATERIALS ON THE HIGHWAY

APPLICATION

I/We apply for a Licence to erect and maintain a scaffold/hoarding/mobile tower scaffold/mobile access platform/ store materials on the highway for the purpose of: _____

The scaffold/hoarding/mobile tower scaffold/mobile access platform/materials is to be located at: _____

Scaffold/hoarding/tower/storage type: _____

Length: _____ m Height: _____ m

Width: _____ m Width of f/way: _____ m

Proposed erection date: ____ / ____ / ____ Removal: ____ / ____ / ____

A location plan showing the exact position of the scaffold/hoarding and the position of all street furniture and access covers will be required.

DECLARATION

I/We have received a copy of the Standard Conditions for the erection of scaffolding/hoarding on the highway giving my/our undertaking to observe and abide by the conditions contained within that document as well as any other additional conditions which may be listed as part of the Licence including the payment of the associated fees.

I/We declare that a valid Public Liability Insurance with a limit of **NO LESS THAN £10,000,000 is held by me/us, and the Insurance carries an Indemnity to Principal clause, evidence to be provided with the application if not previously provided.**

I/We also declare that the Utilities have been consulted by me/us and agree to the proposals. I/We understand that the responsibility for ensuring compliance with the Health and Safety at Work Act, 1974 is that of the Licensee and his/her contractor and not of the Highway Authority or its Agent.

Name and address of Applicant: _____

Tel. No: _____ Fax No: _____

Email Address: _____ (Email or fax number must be provided)

Signed: _____ Print Name: _____

Position within company: _____ Date: ____ / ____ / ____

Name, address and contact number of erector if different from Applicant: _____

For office use only

Licence No: _____

Inspected by: _____ (On behalf of the Highway Authority) Date: ____ / ____ / ____



Whilst every effort has been made to provide reliable and accurate information, we would welcome any corrections to information provided by the Writer which may not be entirely accurate, therefore and for this reason, the NASC or indeed the Writer, cannot accept responsibility for any misinformation posted.



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