Working with ISG
Health and safety standards

Choose safe Choose health

Introduction

This standards document provides information on the minimum requirements to be implemented across all ISG projects.

The aim is to promote safe and healthy workplaces, reinforce ISG's 'Right thing first' strategy, endorse best practice, promote consistency and ensure that everyone remains safe and healthy at work.

This document is to be implemented in accordance with local regulatory requirements and in collaboration with our supply chain partners and stakeholders. It is designed to give clear and concise information to leaders, management, supervisors and workforces to promote high standards and continuous improvement across all ISG projects.

Our standards will be achieved by:

- Ensuring that the contents of this document are communicated to all.
- Ensuring that this document is shared with supply chain partners and contractors at tender stage.
- Ensuring that every contractor is working to the required standards.
- Using safe start briefings, safe systems of work, project inductions and toolbox talks to communicate these standards to ensure everyone is fully aware of what is required.
- Encouraging the use of the EcoOnline observation process to report hazards and positive practices on site.
- Monitoring and reporting of standards by health and safety personnel, project managers and senior management by safety tours and inspections undertaken by both ISG and contractors. This will ensure these standards are implemented and promote good practice, and address substandard safety practices / conditions.
- Ensuring that competent management, supervisors and workforces are in place. For the purpose of this document, competency is deemed as persons who can demonstrate the correct skills, knowledge, ability, experience and training for the role in which they are employed.

The photographs and contents of this document represent the minimum standards that are required by project teams, contractors and suppliers in the performance of their duties in meeting their obligations under the contract while on site. These are the minimum standards that are necessary to seek to protect against damage to property, and injury or ill health to people. They are not intended as an exhaustive list, nor are they intended to define maximum limits of performance. Each project will determine the most appropriate measures to take to meet these standards; this should be determined by the project and health and safety teams working together.

This standards document is broken down into three key areas, with requirements to be achieved both before and during construction – by ISG, our contractors and our supply chain partners.

The three key areas are:

Life critical standards

Foundation standards

Common standards

LCS Life critical standards

The life critical standards are non-negotiable and will be implemented as the minimum requirement on all ISG projects. Deviation from these standards will only be acceptable with a thorough justification report with substitute mitigation measures and controls, signed off by the project leader and project health and safety resource, and then sent to the business unit managing director and health and safety director. Only on confirmation from the business unit managing director and health and safety director may deviation be accepted. Each project will be continually assessed against these standards.

- LCS-01 Excavations and avoidance of underground services and utilities
- LCS-02 People and plant interface
- LCS-03 Confined spaces
- LCS-04 Work at height
- LCS-05 Lifting operations, lifting equipment and accessories
- LCS-06 Prevention of falling objects
- LCS-07 Electricity
- LCS-08 Fire safety

FS Foundation standards

The foundation standards represent our common project foundations, which will be implemented across all projects and in accordance with local rules and regulations.

- FS-01 First aid
- FS-02 Welfare and site set-up
- FS-03 Induction
- FS-04 Engagement – Choose safe. Choose health
- FS-05 Personal protective equipment (PPE)
- FS-06 Safety critical medicals and fit to work
- FS-07 Setting people to work

CS Common standards

The common standards will be implemented as the minimum requirement on all projects. Any deviation is discouraged, and deviation is only permitted through a justification report with substitute mitigation measures and controls, signed off by the project leader and project health and safety resource. Each project will be continually assessed against these standards.

- CS-01 Work at height approved access solutions
- CS-02 Protection of voids, risers, shafts and lift shaft edge protection
- CS-03 Roof work
- CS-04 Fall arrest safety nets
- CS-05 Tethering of tools
- CS-06 Use of mobile elevating work platforms (MEWPs)
- CS-07 Mast climbing work platforms (MCWPs)
- CS-08 Loading and unloading vehicles
- CS-09 Asbestos

- CS-10 Traffic management and vulnerable road users
- CS-11 Control of substances hazardous to health (COSHH)
- CS-12 Access control
- CS-13 Access routes (including ramps and steps)
- CS-14 Housekeeping and materials storage
- CS-15 Demolition
- CS-16 Scaffolding
- CS-17 Plant and equipment
- CS-18 Concrete and screed pumping
- CS-19 Cranes and anti-climb
- CS-20 Piling
- CS-21 Mechanical systems
- CS-22 Gate person and traffic marshal
- CS-23 Dust
- CS-24 Noise
- CS-25 Cutting areas
- CS-26 Hand arm vibration (HAV)
- CS-27 Manual handling
- CS-28 Adverse weather
- CS-29 Welding
- CS-30 Temporary works
- CS-31 Fuel storage and refuelling
- CS-32 Hoists – goods and passenger
- CS-33 Storage and transport of sheet materials
- CS-34 Telehandlers and rotary telehandlers
- CS-35 Dump trucks

Any changes or modifications to this document will be controlled strictly in accordance with ISG's **Administration of the management system** procedure.

All persons must ensure they are working to the latest version of the **'Working with ISG: Health and safety standards'** document. This is available on ISG's internal Company Management System (CMS) or contractor live link.

We welcome any feedback in relation to this document, our minimum standard requirements, or industry best practice. If you have any comments, please access our feedback form here, or via the QR code

Feedback Form

Contents

Life critical standards

Choose safe Choose health

LCS-01 Excavations and avoidance of underground services and utilities

Introduction

Excavations and the breaking of ground present a significant risk to health and safety. These types of incidents are preventable with appropriate planning and proper execution of safety precautions.

This standard applies to any activities on an ISG project that involve excavation, the breaking of ground, or work with underground utilities.

Minimum requirements

Excavation safety

- Edge protection must be provided around all excavations, regardless of depth, to protect all site users.
  - For shallow excavations less than 1.2m depth, the minimum requirement is the use of proprietary barrier systems (e.g. Chapter 8), connected and positioned 2m from all edges of the excavation.
  - For deep excavations, the minimum requirement is the use of fully connected proprietary fencing, positioned 2m from all edges of the excavation.
  - Excavations where members of the public may be present, or able to gain access, will require edge protection measures plus full-height (minimum of 1.8m) proprietary anti-climb fencing, erected in accordance with the manufacturer's instructions.
- Ensure that excavated material is stockpiled a minimum of 2m away from the excavation sides, and build materials are placed and secured away from the excavation sides.
- In locations where there are changes in level and wheeled vehicles are anticipated, controls will need to be in place to reduce the risk of overturn. This may include stop blocks, bunds (1/3 height of wheel diameter) or proprietary traffic barriers.
- All excavations are to be inspected prior to each working shift, following adverse weather, and prior to anybody entering an excavation.
- Slope stabilisation / excavation support must be reviewed for all excavations. This is to be in line with the **Temporary works procedure** and **Temporary Works Control Sheet**. Any excavation greater than 1.2m depth will require an approved support system, and a safe system of work (RAMS).
- Safe access must be provided into all excavations. With excavations greater than 1.2m depth, a proprietary system must be provided; where possible this is to be a stairs system in preference to ladder access.
- Atmospheric testing to be carried out when identified by risk assessment.

General requirements for underground utilities

- All work involving the breaking of ground must be completed under the control of a **Permit to Break Ground**. The contractor is responsible for applying for the permit, providing accurate information, and ensuring works are completed in compliance.
- Work is to be undertaken in line with the most current version of the Health and Safety Executive (HSE) 'HSG47 Avoiding Danger from Underground Services guidance' document.
- Where live services are present, isolation shall be undertaken if practical.

Planning of works – desktop survey

- Existing utilities drawings must be obtained and reviewed for the work area before any excavation can commence.
- Following a full review of documentation, a site investigation is to be completed. ISG's preferred method for this survey is a Ground Penetrating Radar (GPR) survey in accordance with the PAS 128 standard.
- Information regarding the location of underground utilities must be attached to the relevant **Permit to Break Ground**, and where practical, displayed on an underground utilities noticeboard.

Utility scanning devices and techniques

- Prior to any excavation works, an on-site survey of underground utilities is required by a competent operative using cable location equipment. The surveyor must be able to demonstrate specific training with the model of utility detection equipment used. Any identified utilities must be clearly marked with utility marker paint.
- The minimum standard of cable location devices is that they include remote data acquisition, have four modes of operation, dynamic overload protection, swing warning, and depth estimation. (Note: The radiodetection eC.A.T4+ and gC.A.T4+ comply with these requirements.)

Trial holes

- All trial holes to confirm the location of underground utilities are to be completed by hand digging.
- Any required hand digging tools must be insulated to the BS8020 standard.
- Air digging tools shall be used as a preference (e.g. air lance / vacuum extraction).
- Where electric or gas utilities are identified in the work area, operatives must wear insulated overalls to the EN ISO 11612 standard.
- A CAT and Genny must always be available at the work area. A progressive utility scan must be completed every 300mm as the excavation progresses.

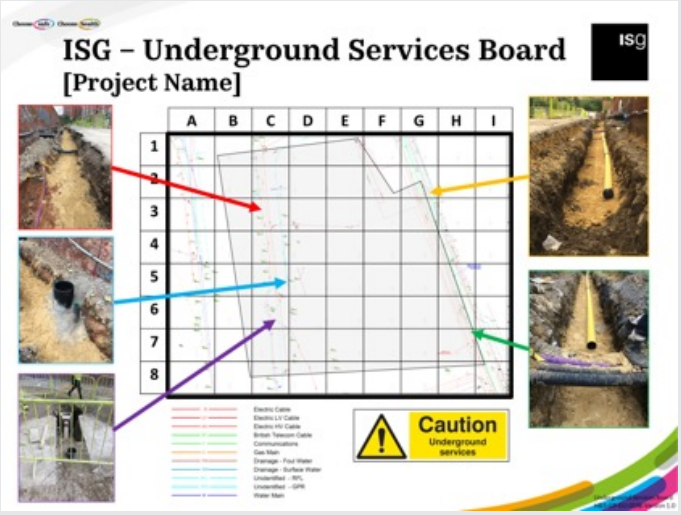
Mechanical excavation equipment

- Vacuum excavation shall be used as a preference.
- Where services are present and traditional mechanical dig equipment is selected, all buckets must be toothless and of a minimum size possible for the specific excavation work being undertaken.
- A plant banksman shall always be present to assist the plant operator.
- A CAT and Genny must always be available at the work area. A progressive utility scan must be completed every 300mm as the excavation progresses.
- No mechanical excavation within 0.5m of any known service.

Protection of exposed services

- Once exposed, underground utilities may need to be supported to prevent damage, e.g. when spanning more than 1m across a trench.
- Any supports used for utilities must be made of non-conductive materials.
- Exposed utilities should never be used as handholds or footholds for climbing out of excavations.
- Where the activity involves access for operatives or ongoing works with exposed utilities, utilities must be protected wherever possible to prevent accidental damage (e.g. using split ducts).

Underground services noticeboard to be displayed in a prominent location



Warning markers are to be placed adjacent to services

Proprietary access systems required for all excavations >1.2m

Reference / supporting documents

- LCS-03 Confined spaces
- LCS-04 Work at height
- CS-17 Plant and equipment
- CS-20 Piling
- CS-30 Temporary works
- Breaking ground procedure (available on the CMS)
- Permit to Break Ground (available on the CMS)
- Temporary Works Control Sheet (available on the CMS)
- Temporary works procedure (available on the CMS)
- Temporary works procedures and guidance (available on the CMS)

LCS-02 People and plant interface

Introduction

Many construction site accidents result from the inadequate segregation of pedestrians and plant. These can be avoided by careful planning, competent operators, competent workforces and by controlling vehicle operations during construction work with full compliance to segregation.

Minimum requirements

- A comprehensive **Site Logistics and Traffic Management Plan** must be produced and reviewed at regular intervals; as a minimum on a monthly basis.

Exclusion zones

- Exclusion zones must be designated where there is a risk of persons being struck by materials, plant, tools or equipment.
- Exclusion zones must be formed by using a rigid continuous barrier (erected, clipped and braced in accordance with the manufacturer's installation instructions) or bespoke designed solutions.
- Locations of exclusion zones must be communicated to all at risk through toolbox talks and safe start briefings.
- Access into exclusion zones must be strictly controlled by the relevant contractor, and people are not permitted to enter the segregated area while the plant is in use.

Pedestrian walkways

- Pedestrian routes are to be planned and sited away from lifting operations, site traffic routes, loading bays, overhead works and other activities presenting significant risk.
- Permanent construction site walkways are to be constructed with suitable material, preferably tarmac, concrete, or flag paving slabs. Where stone is used this must be compacted, level, and binded with dust.
- Segregated walkways are to be formed with interconnected red pedestrian barriers, clear signage, and red-hoop crossing points. Where crossing points are across road areas, a zebra crossing point shall be provided gate to gate or to the final destination.
- Where walks are next to main traffic routes, segregation equipment shall be of such that it will maintain the safety of the walkway, its users, and minimise the impact from construction site vehicle collision.
- Walkways must be free from trip hazards and adequately lit.
- Anti-slip materials are to be used where there is a foreseeable risk of slips (e.g. ramps, staircases, etc).
- Grit and salt must be applied to traffic and pedestrian routes in advance of and during cold weather. Suitable supplies of grit and salt must be maintained.
- Pedestrian road crossing points should be sited at least 10m from any junction and corners where possible. If 10m cannot be achieved, the maximum possible distance is required, and controls implemented to keep pedestrians safe from blind spots and turning vehicles.

Vehicle / traffic routes

- Where possible, routes should be designed to ensure a one-way flow of traffic in order to avoid reversing, taking into account drop-off points, material delivery points, car parks, and loading and unloading areas.
- Routes should be away from excavations and of a suitable gradient for construction vehicles to operate safely, no greater than 10º.
- Vehicle routes must be clearly signed, indicating routes, hazards and warnings, speed limits, and including road markings where possible. They should also be of sufficient size / width to accommodate the largest required construction plant, emergency vehicles, and peak construction vehicle traffic movements.
- In locations where there are changes in level and wheeled vehicles are anticipated, controls will need to be in place to reduce the risk of overturn. This may include stop blocks, bunds (1/3 height of wheel diameter) or proprietary traffic barriers.
- A traffic marshal should be the last resort. Plant should have 360º vision and reversing proximity alarms and devices. The most important control is the design of traffic routes to eliminate reversing on sites.
- Trained and competent traffic marshals are to be used to aid control of vehicles, plant and pedestrian movement, where the requirement has been identified via a risk assessment. Also see standards **CS-10 Traffic management and vulnerable road users** and **CS-22 Gate person and traffic marshal**.

Crossing point with access gates

Segregated walkway adjacent to vehicle route

Pit lane providing segregation

Access / haul roads

- Construction of vehicle routes must be of sound integrity to accommodate the weight of vehicle and frequency of use and maintained to this standard.
- Vehicle infrastructure is to be constructed to base course at the earliest practical opportunity.
- A site-specific temporary works design is required on all projects for a haul / access road.
- California Bearing Ratio (CBR) testing at the formation level is required to determine the thickness of the compacted fill material. This should either be completed in situ, or derived from the ground investigation report.
- The formation should be prepared and proof rolled, with all soft spots removed and filled with well-graded compacted material.
- Fill should be specified and well-graded material laid and fully compacted to Department for Transport (DfT) specification and protected below with geotextile layer.
- Full quality control must be maintained, with regular inspection and maintenance for the duration of the haul / access road's use.

Reference / supporting documents

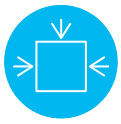
- CS-06 Use of mobile elevating work platforms (MEWPs)
- CS-08 Loading and unloading vehicles
- CS-10 Traffic management and vulnerable road users
- CS-17 Plant and equipment
- CS-19 Cranes and anti-climb
- CS-22 Gate person and traffic marshal
- CS-30 Temporary works
- Site Logistics and Traffic Management Plan (available on the CMS)
- Temporary works procedures and guidance (available on the CMS)

LCS-03 Confined spaces

Introduction

A confined space is a place which is substantially enclosed (though not always entirely) and where serious injury can occur from hazardous substances, or conditions within the space, or nearby (e.g. lack of oxygen). These spaces are high risk and must be carefully controlled due to the potential for serious injuries or fatalities from confined spaces works. In addition to the minimum requirements in this standard, works must be controlled in line with the **Confined spaces** procedure and supporting documents.

Minimum requirements



General requirements for confined spaces

- Entry into a defined confined space shall only take place if there is no reasonably practical alternative to entering.
- Contractors must complete a robust assessment of risks to determine risk and controls for confined spaces hazards. It is critical that contractors demonstrate competency for persons who assess these risks.
- Personnel, including supervisors, involved in confined space working shall hold training relevant to the level of confined space risk.
- A thorough confined spaces risk assessment and schedule, including rescue plan, must be completed and communicated.
- All work involving confined spaces works must be completed under the control of a **Confined spaces permit**. The contractor is responsible for applying for the permit, providing accurate information, and ensuring works are completed in compliance. The permit must be displayed at the entrance to the confined space.
- Appropriate danger / warning signs must be displayed at the entry point to any confined space. Confined spaces must be locked off at all access points to persons when work is not being carried out.
- Atmospheric testing must be completed prior to entry, and air conditions continuously monitored by atmospheric monitors with alarms. This equipment is only to be operated by trained and competent operatives.
- A site-specific rescue plan must be included as part of the contractor safe system of work.
- Activities that can affect the safety of any confined spaces require robust risk assessment (e.g. plant movements, fuel storage, or gas storage in proximity). (Note: In some cases, a DSEAR (Dangerous Substances and Explosive Atmospheres Regulations) assessment will be required.)
- Consideration shall be given to fume- or gas-generating equipment that is positioned near confined spaces, or in proximity to high-risk areas such as air inlets.

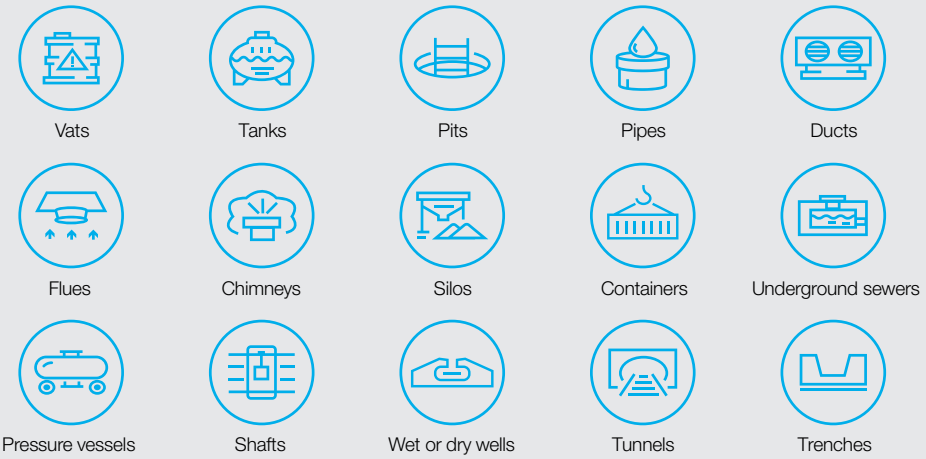
Entry requirements

- Prior to any entry, a **Confined spaces entry checklist** must be completed to ensure an appropriate level of risk control.
- Contractors shall maintain a robust system to monitor persons entering and exiting a confined space, such as a register or tag system.
- A trained and competent topman must be present to oversee confined spaces entry. This is a safety critical role responsible for monitoring the works and instigating a rescue plan, should it be necessary. The topman must never enter the confined space.
- A rescue plan must be in place with all identified equipment and competent persons available. Personnel must also be able to demonstrate training and instruction on the suitable types of breathing apparatus, including emergency escape breathing apparatus, and be able to demonstrate practice in their use, care and maintenance.

Confined spaces equipment

- The correct and calibrated equipment must be provided. As a minimum this includes atmospheric monitors, lighting, access equipment, rescue equipment, two-way radios, escape breathing apparatus and personal protective equipment (PPE). This list is not exhaustive, and other equipment is required based on risk assessment, e.g. air movers / extraction.
- ATEX or BASEEFA (IECEx) certification shall be provided for lighting and equipment for use within potentially hazardous explosive atmospheres.
- All equipment must be maintained in efficient working order and in good repair. Equipment shall be accompanied and identified by proof documentation stating ‘in test / calibration’ dates.
- Equipment such as ropes, harnesses, lifelines, carabiners, etc must have a certificate of test and safe working load (SWL).

Typical confined spaces



Reference / supporting documents

- LCS-01 Excavations and avoidance of underground services and utilities
- LCS-05 Lifting operations, lifting equipment and accessories
- CS-17 Plant and equipment
- Confined spaces entry checklist (available on the CMS)
- Confined spaces permit (available on the CMS)
- Confined spaces procedure (available on the CMS)

LCS-04 Work at height

Introduction

Working at height remains one of the biggest causes of fatalities and major injuries in our industry, so comprehensive control measures must be implemented to avoid incidents and control work at height. Work at height is work in any place where, if precautions were not taken, a person could fall a distance liable to cause personal injury. You are working at height if you work above ground / floor level, could fall from an edge, through an opening or fragile surface, or could fall from ground level into an opening in a floor or a hole in the ground.

Many working at height activities are of sufficient risk or belong to a specialist subject area for which ISG has written specific standards and guidance. These are listed below and form minimum requirements:

- LCS-01 Excavations and avoidance of underground services and utilities
- LCS-06 Prevention of falling objects
- CS-01 Work at height approved access solutions
- CS-02 Protection of voids, risers, shafts and lift shaft edge protection
- CS-04 Fall arrest safety nets
- CS-05 Tethering of tools
- CS-06 Use of mobile elevating work platforms (MEWPs)
- CS-07 Mast climbing work platforms (MCWPs)

Minimum requirements

For work at height, we shall apply the following hierarchy of control:

Avoid

Avoid working at height during construction, but equally importantly, also think about our customers and end users during design, to ensure all avoid working at height is avoided during the operational phase after handover. The first principle is always to eliminate risk by design.

- Eliminate work at height issues through the design process.
- Strive to carry out as much work as practicable on the ground, and only work at height when this cannot be avoided.

Prevent

Where work at height cannot be avoided, comprehensive measures must be implemented to prevent people and objects falling from height.

There shall always be an attempt to achieve collective fall prevention before implementing personal fall prevention measures.

- A dedicated safe system of work is required, starting with a risk assessment for any work at height, including the prevention of falling objects. The controls will be task and project specific, but the safe system of work shall be accepted, robust and fully implemented prior to setting people to work.
- Work should be from existing platforms where possible, provided the platforms meet the required safety standard and technical requirements for the work, such as loading.
- Anyone erecting, using, dismantling or adjusting work at height equipment (scaffold, access towers, mobile elevating work platforms (MEWPs), fall arrest equipment e.g. safety nets) shall be competent to do so, e.g. only authorised trained and competent scaffolders are authorised to erect, adjust or dismantle scaffold. Only authorised, trained and competent people can operate a MEWP.
- All work at height platforms, plant and equipment must be erected, maintained, adjusted, dismantled, inspected and serviced in accordance with manufacturer's instructions and ISG standards, including after any event that could affect its stability, e.g. adverse weather, collision incidents.
- Most work at height equipment will require a design and approval by relevant subject matter experts prior to being installed i.e. a temporary works designer or qualified scaffold design company.
- When using work at height equipment, ensure that the work can be carried out safely without risk to the user, and that any equipment we install protects people and assets from falling objects.
- Work at height equipment requires statutory inspection, pre-use inspection by each operative's identification tags, and / or equipment registers.

Arrest / restraint

The distance that a person could fall, if a fall was to occur, must be minimised. Fall arrest / restraint PPE should only be considered as a last resort.

- The use of fall arrest / restraint equipment requires a detailed safe system of work.
- Fall arrest / restraint equipment is subject to specific inspection and pre-use checks by competent people.
- Only trained, authorised and competent users are permitted to use fall arrest / restraint equipment.
- When undertaking tasks that involve fall arrest / restraint equipment, the safe systems of work shall include a suitable and sufficient work at height rescue plan for that specific task.

Vehicle unloading handrail system to eliminate work at height

Safe screen system utilised to eliminate work at height

Restricted area

Where a restricted area is required, this is to be created using linked proprietary half-height rigid barriers to restrict access to persons involved in a particular activity. Access into a restricted area must be carefully controlled and limited to authorised named individuals. Restricted areas are to be signed detailing the relevant contractor. Frequent monitoring is necessary.

Total exclusion zone

- A total exclusion zone is an area where NO personnel are allowed to enter during the works as part of the safe system of work. Total exclusion zones must be formed using a rigid continuous barrier (erected, clipped and braced in accordance with the manufacturer's installation instructions) or bespoke designed solutions.
- Total exclusion zones must be of an area of sufficient size to contain all hazards and must be clearly identified with safety signage. Examples include steel erection, the area beneath operating mast climbers,
  or scaffold dismantle.
- Clear warning signage must be affixed to all total exclusion zones.
- Where there is potential for persons to enter a total exclusion zone, a competent operative is required at ground level to monitor the area.

Robust exclusion zone formed around mobile tower works

Robust exclusion zone formed around MEWP works

Reference / supporting documents

- LCS-01 Excavations and avoidance of underground services and utilities
- LCS-06 Prevention of falling objects
- FS-05 Personal protective equipment (PPE)
- CS-01 Work at height approved access solutions
- CS-02 Protection of voids, risers, shafts and lift shaft edge protection
- CS-04 Fall arrest safety nets
- CS-05 Tethering of tools
- CS-06 Use of mobile elevating work platforms (MEWPs)
- CS-07 Mast climbing work platforms (MCWPs)
- CS-16 Scaffolding
- CS-30 Temporary works

LCS-05 Lifting operations, lifting equipment and accessories

Introduction

Lifting operations include both crane and non-crane operations. All lifting operations shall be suitably planned, co-ordinated and managed. These standards apply to all lifting operations – not just those using cranes.

Lifting operations are of sufficient risk or belong to a specialist subject area for which ISG has written specific standards and guidance. These are listed below and form minimum requirements:

- LCS-06 Prevention of falling objects
- CS-07 Mast climbing work platforms (MCWPs)
- CS-19 Cranes and anti-climb
- CS-32 Hoists – goods and passenger

Minimum requirements

General requirements

- A planned scope of works shall be agreed between ISG and the contractor, clearly identifying items to be lifted.
- ISG's **Lifting operations guidance** includes roles, appointments and competency requirements.
- All lifting operations shall comply with the Lifting Operations and Lifting Equipment Regulations, Safe use of lifting equipment Approved Code of Practice L113, and relevant parts of BS 7121 Code of practice for the safe use of cranes, or the relevant international standard.
- Suitable ground conditions (flat, level, compacted) shall be available for the siting of ALL lifting equipment – having reference, as necessary, to ground reports, plate load tests, service information and advice from the temporary works engineer / technical services department.
- Lifting activities will be undertaken under the supervision of a contractor's competent supervisor.
- Co-ordination of lifting operations will take place in either a weekly crane co-ordination meeting or a general supervisors co-ordination meeting, depending on the project and lifting equipment in use.
- Certain lifts are prohibited. These are listed in the **Lifting operations guidance**. Contractors shall ensure that these specified lifts do not take place.
- Positive lifting points / connections shall be designed and used as the first principal.
- Slinging arrangements with a single point of failure are not permitted.
- Lifting operations shall incorporate a secondary means of securing the load. Where a secondary means cannot be implemented, this is to be reviewed in conjunction with the Health & Safety team.
- Friction lifting clamps are not permitted.

Tower cranes

All crane lifting operations planning is to be carried out by the appointed person (AP) and documented in a tower crane lifting plan. The tower crane lifting plan shall include, as a minimum, the details listed in the **Lifting operations guidance**.

- All crane lifting activities shall be subject to a robust and approved lifting plan and safe system of work.
- Where cranes are working in proximity to one another, suitable anti-collision measures shall be adopted.
  A remote screen to monitor the anti-collision monitoring system shall be in-stalled in the site offices.
- Each tower crane shall have a designated and competent crane supervisor, with a separate lift supervisor
  to oversee the lifting operations.
- Use audible warnings e.g. referee-type whistle or air-horn to warn personnel of an imminent lifting operation, or an approaching suspended load.
- Hook block cameras are required for tower crane lifting on ISG projects. The system selected (e.g. BlokCam) shall provide an unobstructed, live, audio-visual feed of critical areas, such as for blind lifting.
- Air-conditioning systems shall be provided within the operator's cabin.
- Adequate arrangements shall be made to ensure that tower crane operators are able to take break periods during their working shifts. Relief drivers are required on projects with multiple cranes.
- Hoist access shall be considered for access to the tower crane operational cabin.

Mobile cranes

- Where a mobile crane is being employed by ISG, the mobile crane operations are to be via a contract lift. Contractors shall ensure compliance with the **Lifting operations guidance**.
- The lifting operation shall be segregated by interconnected rigid red physical barriers and clear warning signage.
- With specific regard to ground conditions, where required by temporary works, plate bearing tests shall be completed for areas where mobile cranes are to be utilised. Plate bearing tests shall have been completed in the past six months.
- No loads are to be lifted over personnel.

Mobile crane operations with robust exclusion zones

Non-crane lifting

- All non-crane lifting activities (including forklifts, telehandlers, excavators) shall be subject to a robust and approved non-crane lifting plan, risk assessment and method statement.
- All non-crane lifting plans are to be produced by a competent person and accepted by the appointed lift manager.
- The non-crane lifting plan shall as a minimum fully detail the lifting equipment, lifting accessories, load details, slinging arrangements, and site-specific risk assessments.
- The lifting operation shall be segregated by interconnected rigid red physical barriers and clear warning signage.
- Operators of non-crane lifting equipment shall be able to demonstrate specific competency in the model
of equipment being used.
- A competent slinger shall be available to oversee any non-crane lifting operations.
- Load charts shall be available for non-crane lifting equipment. Safe load indicators shall be installed for all plant used for non-crane lifting over one tonne.

Good-quality storage of lifting accessories to be established and maintained

Lifting cages to reduce potential for load failure or falling objects

Accessories

- A system for identifying all authorised lifting accessories shall be in place.
- All lifting accessories shall be provided with in-date certificates of thorough examination.
- Daily pre-use checks, and weekly recorded inspections, shall be completed by a competent slinger prior to any lifting.
- A designated clean dry storage area shall be available for lifting accessories.
- Positive lifting points / connections shall be designed and used as the first principle.
- Flexible Intermediate Bulk Carriers (FIBCs) – these bags shall be checked, for visible damage, prior to lifting. All FIBCs shall be treated as single-trip use and destroyed, or disposed of, after initial discharging, unless handling instructions specify that the bag is approved for multiple use.
- Bundled loads shall be secured to prevent displacement, by double-choke hitching.
- Rubbish skips and stillages designed for lifting by crane shall only be lifted with securely fitted proprietary containment nets. Skips and stillages shall never be filled above the top of the skip.
- Palletised loads, including blocks, shall be lifted with a proprietary system, lifting cage by preference. Where crane lifting forks are essential, the forks shall incorporate containment for the load.
- Packs of bricks shall be banded and / or enclosed with shrink-wrap unless within a cage. As a minimum requirement when lifted by crane, pallets of bricks shall be lifted using self-levelling brick forks with netting or within a crane forks cage.
- Single-use lifting strops used for unloading shall be prevented from reuse and removed off site.

Vacuum lifting

- Where vacuum lifting equipment is used it shall be fitted with dual circuit vacuum systems and used in accordance with the manufacturer's requirements.
- An exclusion zone shall be established and controlled for vacuum lifting.
- Vacuum lifter operators shall hold familiarisation training for the vacuum lifting equipment in use and are to inspect the condition of pads and vacuum gauges prior to use.
- For vacuum lifting operations, the use of secondary containment straps is the default position. Cups shall be cleaned, inspected, and maintained regularly and protected from damage and adverse weather conditions when not in use.

Reference / supporting documents

- LCS-06 Prevention of falling objects
- CS-07 Mast climbing work platforms (MCWPs)
- CS-17 Plant and equipment
- CS-19 Cranes and anti-climb
- CS-30 Temporary works
- CS-32 Hoists – goods and passenger
- Lifting operations guidance (available on the CMS)
- Temporary works procedure (available on the CMS)

LCS-06 Prevention of falling objects

Introduction

Activities taking place at height, or materials stored at high level present a risk of falling objects. There is a significant life safety risk from dropped or dislodged materials, partially installed materials, tools, work equipment, debris or waste material.

Minimum requirements

- A **Prevention of Falling Objects Risk Assessment and Plan** shall be completed at preconstruction stage in line with the **Prevention of Falling Objects Guidance and Strategy**.
- Contractors shall ensure a robust task-specific safe system of work is produced and formally accepted prior to the commencement of works.
- Tool tethering shall be implemented whenever working above a height of 3m, OR within 2m of any edge, OR where there is a significant risk of a dropped object.
- The tethering of materials is to form part of the task-specific risk assessment provided by the contractor.
- Exclusion zones shall be implemented and enforced wherever there is a residual risk of falling objects.
- Materials stored at height, or near any edges that are not fully enclosed, shall be robustly secured at the end of each shift or on break periods. The preference for this is proprietary cargo netting.
- Loose materials and fixings shall be secured when working on site. On high-rise projects, anti-tip bags are the minimum requirement.
- For lifting activities, refer to **LCS-05 Lifting operations, lifting equipment and accessories**.

Exclusion zones

- An exclusion zone is an area where NO non-essential personnel are allowed to enter during the works as part of the safe system of work. Exclusion zones shall be formed using red rigid continuous barriers (erected, clipped and braced in accordance with the manufacturer's installation instructions) or bespoke designed solutions.
- Exclusion zones shall be an area of sufficient size to contain all hazards and shall be clearly identified with safety signage. Examples include steel erection, the area beneath operating mast climbers, or scaffold dismantle.
- Clear proprietary warning signage shall be affixed to all exclusion zones.
- Where there is potential for persons to enter an exclusion zone, a competent operative is required at ground level to monitor the area.

Protective measures

- Temporary works in the form of pedestrian tunnels, canopies or fans shall be installed as determined by the **Prevention of Falling Objects Risk Assessment and Plan**.
- Any boarded scaffold fans shall be double boarded with a layer of plywood / membrane in between.
- Rising netted scaffold fans shall be positioned to be no less than 4.75m below the level of works. Fans shall be repositioned, or additional fans installed as the works progress and the falling distance increases.
- Netted fans have a 60x60mm matrix. To contain smaller objects, an additional debris netting layer will be required to provide optimum protection.

Scaffold protection fans installed above public walkways

Quality and integrity of safety critical fixings

- All fixings and ancillary components used for high-level mounting, or suspension of loads, shall be designed.
- Drilled fixings shall be specified by the designer, considering the imposed loads and material requiring penetration.
- Operatives installing safety critical fixings shall be task briefed on the installation specifics.
- Temporary fixings shall be inspected regularly, particularly if loads are exposed to the effects of vibration or wind pressure.
- Contractors are required to provide a fixings board to demonstrate approved fixings, and for workforce communication.

Partially installed work

- Projects shall account for the risk posed by the temporary condition. This need shall start at project tender stage.
- Weatherboarding shall be managed as temporary works.
- Project teams and contractors shall prioritise the closure of any gaps where wind can enter as far as reasonably practicable (e.g. hoist rooms).
- Fixings shall be of the type recommended by manufacturers. Installation shall prioritise correct fixing centres and depth gauges in use.
- Works shall be planned to minimise the exposure time of partially completed works.
- High-risk / high-rise projects shall take greater control measures. These shall include:
  - A site-specific design of external systems.
  - Permanent wind loading, wind pressure and wind suction are to be considered for each elevation and level of the building.
  - Fixing centres and type are to be checked and approved.
  - A Category 2 temporary works design and check needs to be completed for partially completed works as part of the temporary works management process.

Safe screen utilised to eliminate falling objects

Lightweight materials secured at roof level with containment netting

Reference / supporting documents

■ LCS-04 Work at height ■ LCS-05 Lifting operations, lifting equipment and accessories ■ CS-05 Tethering of tools ■ CS-16 Scaffolding ■ CS-17 Plant and equipment ■ CS-30 Temporary works ■ Prevention of Falling Objects Guidance and Strategy (available on the CMS) ■ Prevention of Falling Objects Risk Assessment and Plan (available on the CMS) ■ Temporary works procedure (available on the CMS)

LCS-07 Electricity

Introduction

Electricity can kill or severely injure people and cause damage to property. Electrical works are high risk and shall be carefully planned, managed and controlled, due to the potential for serious injuries or fatalities from coming into contact with electricity.

This standard shall be read in conjunction with the **Electrical safety rules** (red book) and **Electrical safety procedures** (blue book).

Minimum requirements

- A Project Electrical Safety Plan shall be in place for all projects. This plan shall clearly define the responsibilities and arrangements for all working with electricity.
- There can only ever be ONE set of **Electrical safety rules** and **Electrical safety procedures** and **ONE duty holder** in charge of the electrical system risks at any one time.
- The demarcation of responsibilities shall be established from the outset. Control of electrical systems, hazardous and critical areas shall be agreed, whether managed by the individual contractor, specialist, client facilities management or ISG.
- Emergency contact details and arrangements shall be readily available.
- Work on any part of the electrical systems shall only be undertaken by a skilled person.
- **LIVE WORKING is not permitted**.
  - For exceptional circumstances, a robust risk assessment and safe system of work shall be submitted to ISG for review. The risk assessment shall detail the justifications for requesting to work on live equipment. The review and approval process shall be carried out by the project-assigned building / technical services manager and ISG authorising manager only.
- To ensure electrical safety requirements are achieved, the following shall be in place prior to commencing electrical works:
  - Accepted electrical safe system of work (ESSoW).
  - Electrical permit.
  - Skilled electrical person with sufficient knowledge of carrying out the senior authorised person (SAP) / authorised person (AP) role.
  - Control of Hazardous Energies (Lock Out Tag Out).
  - Insulated tools and test equipment to comply with GS38 and conform to the requirements of BS EN 61010-031.
  - Test equipment shall be calibrated and in date.
  - Emergency plan.

Temporary supplies

- A schematic diagram detailing all key elements of the system shall be provided. On-site records shall be maintained detailing configuration, power source, switching and test locations.
- Electrical systems shall be tested upon installation or adaption, with electrical installation certificate issued.
- All MCCBs, MCBs, RCDs, RCBOs, AFFDs and isolators are to be clearly labelled with the appropriate circuit ID / reference.
- Only authorised personnel are to access or work on the equipment.
- All distribution boards / transformers shall be secure in position, either freestanding or fixed, and shall be
  in good condition and fully operational.
- All unused cable entry holes and apertures shall be protected by blanking plates, preventing access to live parts.
- Circuit protection devices shall be clearly labelled and secured to prevent unauthorised access, by means
  of lockable doors.
- Transformers shall be positioned to avoid causing an obstruction.
- Transformers shall be moved using a mechanical aid to avoid manual handling.
- Combination locks shall not be used.
- Padlock keys shall not be left on site. The exception to this is where the ISG technical services manager / building services manager is suitably skilled (electrical bias only) and agrees to comply with the temporary services provider's ESSoW.

General electrical safety

- All conductors and electrical systems shall be treated as LIVE until proven DEAD and shown to be securely isolated to the responsible person named on the appropriate permit.
- Field ends of cables and final sub-circuits shall be safely completed before the supply ends are connected into a potentially energised source.
- No works shall be carried out in a controlled area without a Limitation of Access permit signed by the responsible appropriate SAP or AP.
- Electrical apprentices, improvers and mates shall **NOT** be permitted to work on any live boards or any energised circuits.
- 110-volt portable and handheld electric tools shall only be used on site. The use of 230v on site shall be avoided.
- All electrical cables and transformers shall be inspected for for signs of visible damage before being put in to operation. Damaged cables or transformers shall be taken out of service immediately.
- Electrical supplies to all site cabins shall be protected by residual current devices (RCDs) and checked on a three-monthly basis, with electrical installation tested annually.
- Electrical equipment shall be inspected, tested and certified prior to first use, and a minimum of three-monthly thereafter. Visual inspections shall take place before each use.
- Work on equipment which is energised or isolated shall be carried out under a Permit to Work system and align with the project-accepted ESSoW.
- Equipment shall not be energised until all the installation works and testing are complete, wherever possible.
- Suitable warning signage shall be affixed on electrical units, distribution boards, electrical cupboards and rooms, to indicate the presence of live electrical systems, warning of 'DANGER' and of the highest voltage present.
- Where permanent or existing services are live within a building, warning signage shall be positioned in prominent locations.
- Exposed cable ends shall be capped or taped off, and not causing a trip hazard.
- All individual cable terminations shall have glands and be secured to prevent movement to ensure the integrity of the conductor connections.
- Electrical extension reels shall be fully extended when in use.

Overhead lines

- All works in proximity to overhead lines are to be carried out in accordance with District Network Operators Safety Rules and GS6 Avoiding danger from overhead power lines.
- Where live services are present, isolation shall be undertaken if practical.

De-installing / removing of installation

- All removal and de-installation works shall be carried out under the agreed safe system of work.
- Building health and safety file and equipment owners shall be consulted about other hazards which may be present e.g. asbestos-containing material.
- Survey existing drawings and information concerning the works. Do not rely on piping and installation diagrams (PandIDs), cable numbers or panel charts as there may be errors. A skilled person shall verify prior to removing cables. If in doubt, place a ring around the cable and physically trace the cable to source.
- Energy sources and routes shall be identified. All services shall be disconnected and verified. System owners and utility companies shall be liaised with, if necessary.
- Survey work area and set up barriers around the work area and energy sources.
- Lock Out and Tag Out the circuit(s) by the AP using the agreed Lock Out Tag Out procedure. Use appropriate PPE depending on category of panel and risk assessment.

Reference / supporting documents

- LCS-01 Excavations and avoidance of underground services and utilities
- Electrical safety procedures (available on the CMS)
- Electrical safety rules (available on the CMS)
- Project electrical safety plan (available on the CMS)

LCS-08 Fire safety

Introduction

During the construction process there is potential for fire due to hot works, fire loads, electrical plant and equipment, and arson, which is the main cause of fires on construction sites. The consequences of fire on a construction project can be catastrophic from a life-safety perspective, thus the control measures implemented shall be robust and appropriate to the scale of the project. This standard is to be used in conjunction with the **Project Fire Risk Management Procedure**.

Any building determined as a high-risk residential building requires compliance with the **HRRB Procedure**.

Minimum requirements

- A **Project fire plan and fire risk assessment** shall be completed by a competent person. This shall be reviewed at regular intervals, and as a minimum on a monthly basis. All controls measures detailed within shall be implemented.
- A site layout plan shall be produced identifying key information including temporary accommodation, fire points and muster points, storage of flammable materials and substances, access for the fire service, and hydrant / dry or wet riser positions.
- Fire exits, points and escape routes must be clearly marked and unobstructed at all times.
- Emergency lighting is to be installed on all emergency exit routes. Where temporary emergency lighting is on a project it shall be green. Weekly checks shall be undertaken.
- A fire and emergency box (e.g. GERDA high security premises information box) shall be positioned at the site entrance, containing key information including, but not limited to: Details of the utilities, emergency contact information, plans of the building, SDSs for any COSHH materials on site and location of the LPGs stored on the project.
- Fire points to be preferably stationed in the same location on each level. Fire points shall be set up comprising a minimum of water and carbon dioxide extinguishers. Where a risk of fire due to lithium batteries exists, appropriate fire extinguishers shall be provided, such as Lith-Ex. The fire point shall include a fire layout plan and a copy of the **Weekly fire point inspection record**. The fire extinguishers shall be kept clean and readily identifiable.
- Fire drills and emergency evacuation plans shall be tested periodically (a minimum of once per quarter) with an **Emergency evacuation report** recorded.
- As a building moves from a semi-open structure to an enclosed structure, internal temporary fire doors (complete with signage and door closers) shall be installed at the earliest opportunity to meet the maximum safe travel distances. UK Ref, HSG 168. Outside the UK, reference local rules and requirements. Passive fire protection is to be installed on fire compartments at the earliest opportunity. This includes vertical risers, shafts on high-risk buildings.
- A system is to be employed to highlight when the roll call / count of a subcontractor is ongoing, e.g. lollipop system.
- Two means of escape shall always be available, whenever possible.
- ISG shall appoint a fire co-ordinator and fire wardens. All contractors shall nominate a competent fire warden. The fire warden shall be responsible for ensuring that in the event of an evacuation, all their operatives have evacuated the site, and then report to the ISG site fire safety co-ordinator that the head count is complete. Fire wardens shall be highlighted on the project health and safety notice board.

- Hot works shall be eliminated by design wherever possible, however, a **Hot works permit** shall be completed in advance of the works. Note: For brazing, or soldering of copper, the use of thermal heat mats, designed to fit around the diameter of the pipe, shall be employed where there is a risk of radiated heat transfer.
- Where hot works are undertaken at height, e.g. risers and perimeter of buildings, robust measures shall be undertaken to prevent sparks / droplets falling, the fire watcher shall be in attendance.
- Post hot works fire checks shall be completed and recorded as part of the **Hot works permit**. A thermal camera e.g. FLIR One can be used to evidence that the area has cooled sufficiently.
- Materials that could add to the fire loading shall be covered with flame-retardant material, conforming to LPS1207.
- Refuelling for both plant and small tools shall be positioned in a remote location from the building (at least 6m away) in a bunded area.

Temporary fire alarm systems

- Where needed, a wireless fire alarm system to BS5839-1 shall be installed, using devices within the system that comply with the relevant parts of BSEN54, or equivalent.
- Temporary fire alarm systems shall be installed at the earliest practical stage of the project.
- Where practical, fire alarm systems shall be procured directly from the fire alarm system supplier, or as part of the temporary electric package.
- The primary control unit shall be located within the ISG project office or security point. Access to information, such as system logs, shall be restricted to ISG site management and security monitoring personnel.
- The specific location of call points shall be determined based on the **Project fire plan and fire risk assessment**. Call points shall be provided at the entry point to access stairwells and lift shafts.
- Heat, smoke or dust-resistant detectors shall be deployed as identified by the fire risk assessment , and as a minimum in all temporary buildings and accommodation.
- Fire call points shall be located no more than 45m apart.
- All temporary fire alarms shall be numbered according to the **Project fire plan** for easy identification in the event of emergency.
- Rotary fire alarm hand bell systems shall not be utilised on any project.

Fire emergency box to be provided

Fire evacuation placards provided for emergency response

Storage of LPG

- LPG cylinders shall be stored away from combustible materials and in a lockable cage.
- Cylinders shall be stored at ground level, remote from pits, drains and low-lying areas.
- LPG shall not be stored close to occupied buildings.
- LPG storage shall be located at least 3m away from other cylinders like oxygen, chlorine and ammonia.
- Cylinders shall be stored in a vertical position and, wherever practicable, prevent from falling.
- A written procedure shall be in place to deal with possible emergencies.
- Appropriate fire extinguishers shall be provided to storage areas.
- Clear signage shall be provided, including '**LPG – Highly flammable**', '**NO SMOKING**' or '**NO NAKED FLAME**'.
- Flash back arrestors shall be fitted to cylinders.
- Cylinder valves, hoses and all connections shall be checked for leaks daily.
- Cylinders shall be isolated by closing the cylinder valve when not in use.
- No acetylene is to be used or stored on any project without formal justification that is accepted by ISG.

Good-practice examples of temporary fire points

Reference / supporting documents

- FS-01 First aid
- Emergency evacuation report (available on the CMS)
- Hot works permit (available on the CMS)
- HRRB Procedure (available on the CMS)
- Project fire plan and fire risk assessment (available on the CMS)
- Project Fire Risk Management Procedure (available on the CMS)
- Use of Acetylene justification report (available on the CMS)
- Weekly fire point assessment record (available on the CMS)

FS

Foundation standards

Choose safe Choose health

FS-01 First aid

Introduction

First aid can save lives and is an essential provision on all projects. First aid provision in the workplace covers the arrangements that need to be made to manage injuries or illness suffered at work. First aid arrangements shall reflect the scale and complexity of a given project.

Minimum requirements

- Prior to work commencing on any project, a first aid risk assessment is to be undertaken to determine the first aid provision required.
- Every project shall have at least one fully qualified ISG first aider, who can operate a defibrillator. Provision shall be made to ensure that cover is in place due to unforeseen absence.
- Contractors shall be required to supplement the ISG provision by providing at least one trained first aider to be on site at all times unless otherwise agreed.
- Details including contact numbers of first aiders shall be displayed. First aid information shall be communicated within the site-specific induction.
- All persons on the project shall ensure their emergency contact details are completed.
- Any first aid incidents shall be reported to ISG and recorded.

First aid station and call point to be established where determined by risk assessment

First aid provision

- First aid provision shall be appropriate to the size and complexity of the project, and shall include:
  - A fully stocked first aid kit
  - Eye wash station
  - Burns kit
  - Fully automatic defibrillator (AED)
  - Signage highlighting the location of the equipment.

  Checks shall be undertaken monthly to ensure that the above equipment is fully stocked and operational.

Medical conditions / medication

- It is essential that those who suffer from existing medical conditions that may affect work are identified and considered. Adequate precautions shall be taken in the workplace to reduce the risk to the individual and others.
- Individuals shall be encouraged during the induction process to be open and honest about existing / known medical conditions that may have an impact on their work.
- ICE (in case of emergency) ID tags are encouraged to be worn by individuals with known health conditions and to include emergency contacts.
- Where an individual has a known health condition, contractors shall provide a specific risk assessment for the individual. This shall highlight possible restrictions on the use of plant and equipment, not working at height or lone working, and additional communication measures required (e.g. radio, phone).
- Should an individual have a medical episode, it is essential that this is effectively managed prior to returning to work. As a minimum requirement:
  - The employer shall provide a suitable risk assessment as described above.
  - A fit note shall be provided stating that the individual is fit to return to work.
  - If not previously disclosed on the induction record, the record is to be updated accordingly.
  - The work environment shall be reassessed and areas or work equipment shall be identified to the individual that they must not enter or use.
  - Arrangements shall be made by the employer for the individual to be monitored closely.

Mental health first aid

- Trained mental health first aiders shall be employed by ISG.
- Mental health first aiders shall be highlighted on the health and safety noticeboards.
- Contractors are required to assess mental health risks and shall nominate trained mental health first aiders, as appropriate.

Reference / supporting documents

- FS-02 Welfare and site set-up
- FS-03 Induction
- FS-06 Safety critical medicals and fit to work

FS-02 Welfare and site set-up

Introduction

Regardless of the type of project, size or value, careful planning and consideration shall be carried out to ensure the welfare and canteen standards meet legislative requirements and ISG standards.

Planning of the project offices, welfare and canteen facilities shall be considered during the preconstruction or the tender stage of the project. This demonstrates the thought and preparation that is being taken by the project team to ensure the facilities that will be on site are at an acceptable level for all to use.

During the planning stages of the project's welfare and canteen facilities, the project's life cycle shall be considered. Changes in the contractors or an increase in the number of those working on site could affect the suitability of the facilities. These factors shall be considered and monitored to ensure the welfare facilities are sufficient for use throughout the lifetime of the project.

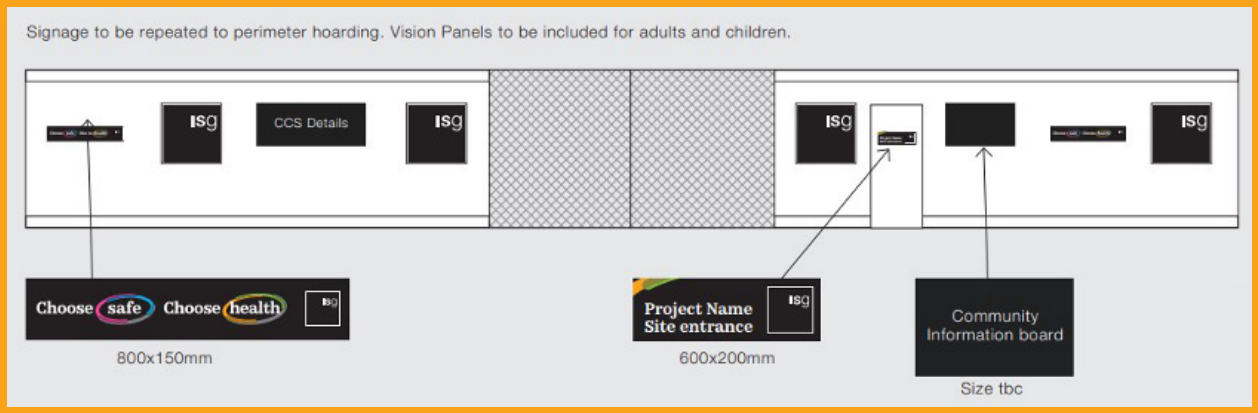
Minimum requirements

Hoarding and boundary protection

- Hoarding and boundary protection shall be erected immediately following possession of any area.
- Proprietary fencing, hoarding and signage shall be erected in accordance with the temporary works design by a competent person and system manufacturer's instructions, with design / plans kept on site. Recorded weekly inspections shall be completed.
- Separate pedestrian access and vehicle access routes to the site accommodation shall be provided, in line with the **LCS-02 People and plant interface** standard.
- Corporate signage / branding, site-specific information boards and warning signage shall be displayed, in line with the branding guide, unless client requirements take preference.
- Proprietary fencing systems (including gates) shall incorporate anti-climb features, and measures shall be implemented to prevent unauthorised persons from accessing beneath fencing and gates.
- Where hoarding is positioned on a road or highway, then proprietary solutions designed for the live traffic environment shall be utilised. Hoarding licence to be obtained and displayed where applicable. Consideration needs to be given to trespassers and weather conditions.
- Hoarding and boundary protection shall not place the general public at risk from collapse, sharp edges, splinters, protruding wire or other defects.
- Access control shall be provided in accordance with the **CS-12 Access control** standard.
- All doors and gates within the hoarding shall have a restraint mechanism.
- Signage shall be displayed on hoarding and boundaries at regular intervals along the mesh panel, giving a contact name and an out-of-hours contact number. Where signage is required on a fencing system, this shall be accounted for in the temporary works design.

- Prior to the citing of hoarding kentledge or ground penetration for hoarding posts, Ground Penetrating Radar (GPR) surveys shall be carried out, and the process for breaking ground undertaken in line with LCS-01 Excavations and Avoidance of Underground Services & Utilities.
- Where fitted, doors on hoardings shall open inwards or be on sliding rails to avoid the potential for doors opening outwards into the public domain. All doors shall have door closers fitted.
- External hoarding lighting shall be IP44 rated minimum with lighting power cable supply to be installed through the back of the light fitting, to ensure no cables are exposed in the public domain.

Typical site entrance hoarding



Good-practice examples of project hoarding / boundary

(Where fencing systems are applied a temporary works design is required)

External project hoarding and welfare

General requirements for temporary accommodation and welfare

- Any temporary accommodation bases shall be designed in accordance with the **Temporary works procedure**.
- Facilities not provided by ISG (e.g. building owner) shall meet the minimum requirements of this standard.
- All temporary electrics shall comply with the requirements of BS7375 or equivalent. A temporary electrical installation certificate shall be displayed.
- Short-term temporary site set-ups shall include the same provision as permanent set-ups, scaled accordingly.
- All ground-floor cabins shall have a protective skirt around the base.
- All welfare and temporary accommodation areas shall be kept clean and tidy, with a cleaning regime in place that maintains hygiene standards.
- Access routes and security locations shall be provided with adequate illumination.
- Where possible, all projects should implement the use of display / totem screens. Having these screens on site demonstrates to all site personnel that ISG is driving innovation and creativity in the workplace.
- No work shall be carried out in safe routes, unless these works are planned and authorised with alternative routes provided or marshals in place.
- Welfare and site accommodation areas shall be covered with suitable material – tarmac, concrete or flags. By exception, stone may be used. If so, this shall be compacted, level and binded with dust.
- Any ramps or steps shall be constructed in accordance with the **CS-13 Access routes (including ramps and steps)** standard.
- Door closers shall be fitted to all drying rooms, toilets (excluding cubicles) and external doors.
- Fire / heat detection, alarms and fire points shall be installed in the welfare and accommodation as per the **Project fire plan and fire risk assessment**.
- All temporary accommodation units shall be constructed and managed in line with the site-specific Fire Plan / Fire Risk Assessment, and The Joint Code of Practice for Fire Prevention on Construction Sites, or equivalent.
- All cabins / offices shall be clean and tidy at all times (i.e. no tools under desks / on floors, all correspondence filed away and not piled / scattered over desks).
- Suitable flooring shall be provided that can be easily cleaned and maintained to a high hygienic standard.
- Battery charging units are not to be placed within the canteen area. If these are being supplied to the project, a suitable and easily accessible area shall be used for them. Project teams shall ensure battery charging units remain in good condition and suitable for use.
- All office furniture shall be of good quality and sufficient quantity for the number of people.
- Temporary accommodation shall have timers on heating circuits and PIR detectors on lighting.
- Remote / intelligent metering shall be installed to the main electricity and gas supplies. Where practicable, energy and water supplies provided by the client, or others, shall be metered.
- Security lighting shall be directed away from residential neighbours and / or sensitive wildlife.
- Water supplies shall be lagged as a minimum. Trace heating shall be considered to maintain the water supply over cold periods.

Information unit for projects with limited scope

Example of a professional site reception

Clear wayfinding signage to be provided

Example project meeting room

Canteen

- Canteens shall be provided with an area for sitting, eating and resting, with sufficient tables and chairs for the number of workers on site.
- Site tools, materials and clothing shall not be stored within the canteen area.
- Canteens shall provide access to drinking water, including drinking receptacles.
- Canteens shall contain a fridge for storing food and drinks, means for heating food (i.e. microwave) and a plumbed-in boiler or kettle for hot beverages.
- Sinks shall be provided with hot and cold running water, and splash back panel. Waste pipes shall be connected to a foul service drain or septic tank.

- Canteens shall be adequately heated to maintain a comfortable temperature and be ventilated.
- A standard ISG health and safety information board shall be displayed.
- Where food premises are provided as part of the welfare set-up, the Food Safety Act and relevant regulations shall apply. Food premises including vehicles and trailers may only be used if registered with the local food licensing authority.
- Soaps, sanitiser and means of drying hands shall be provided to maintain high hygienic standards.
- To enhance welfare, outdoor seating areas shall be considered and provided where practical. Outdoor seating cannot be included in the calculation of the facility provisions, as the facility shall provide shelter from wind and rain.

Outdoor seating provided for workforce breaks

Effective welfare set-up with adequate seating space

Toilet and washing facilities

- Toilets and washing facilities shall be located within the site welfare set-up.
- All projects shall have a separate female toilet provided with sanitary waste disposal.
- Consideration shall be given to the travel distance to toilets. Where this distance exceeds 150m the health and safety team shall be consulted.
- Sinks shall be provided, with independent hot and cold running water to each individual sink.
- The sinks shall be large enough in size to allow for washing and decontamination of the full forearm and for each sink to have its own hot water supply.
- Hand soaps, hand care systems and sanitisers shall be provided, along with a means of drying hands.
- Toilets shall have sufficient supplies of toilet paper, paper hand towels and soaps / sanitisers at all times.

Minimum requirement for number of toilets and washbasins:

Number of males at work	Number of WCs	Number of urinals	Number of washbasins
1 to 15	1	1	1
16 to 30	2	1	2
31 to 45	2	2	2
46 to 60	3	2	3
61 to 75	3	3	3
76 to 90	4	3	4
91 to 100	4	4	4
Above 100	4, plus 1 urinal and washbasin for every unit or fraction of a unit of 50 males		

Hygienic standards shall be maintained in all welfare areas

Showers

- Shower facilities shall be provided if required by the nature of the work or for health reasons.
- Unisex shower facilities can be provided if they are in a separate, lockable room, which can be used by one person at a time.
- Showers shall be fitted with temperature control (i.e. thermostatic mixing valve) to prevent scalding.
- Shower rooms shall include non-slip flooring, coat hangers and seating.

Drying room and changing areas

- Separate drying room and changing areas shall be provided for male and female personnel.
- Arrangements shall be in place for securely storing personal clothing not worn on site, and for protective clothing needed for sitework (i.e. lockers).
- The facilities shall be large enough to allow the maximum number of workers expected to use them at any one time to do so without overcrowding or unreasonable delays.
- Drying rooms and changing areas shall include clothing hooks, benches and lockable personal storage cabinets (secured in place).
- Drying rooms and changing areas shall be fitted with self-closing doors for privacy.
- Drying rooms shall provide adequate heating for drying wet or damp clothing. Where an electrical supply cannot be left on overnight, consideration shall be given to alternative heat sources such as storage heaters.
- Sufficient ventilation shall be provided to the drying room, with heat sources protected or positioned so that clothing cannot come in direct contact with hot components.
- Drying room heating systems shall be on a thermostatic and timer control.

Example of well-managed changing room

PPE and visitor PPE

- All projects shall ensure that there is an adequate number of PPE sets on site for visitors to use.
- Clean, well-maintained, good-quality visitors' PPE shall be stored in a secure location. The visitors' PPE shall be complete with ISG-compliant safety helmet, safety footwear, hi-vis vest, glasses and gloves.
- PPE shall be stored separately in boot sizes, which are displayed on the front of the cage.

Effective storage of visitor PPE

Reference / supporting documents

■ LCS-02 People and plant interface ■ FS-01 First aid ■ FS-03 Induction ■ FS-04 Engagement – Choose safe. Choose health
■ FS-05 Personal protective equipment (PPE) ■ FS-06 Safety critical medicals and fit to work
■ CS-12 Access control ■ CS-13 Access routes (including ramps and steps) ■ CS-30 Temporary works
■ Project fire plan and fire risk assessment (available on the CMS) ■ Temporary works procedure (available on the CMS)

FS-03 Induction

Introduction

A site-specific health and safety induction is critical to ensure that all persons are aware of significant hazards, control measures, and site-specific arrangements. Time taken to effectively communicate with persons and confirm their understanding brings significant benefits to any project.

Minimum requirements

- All personnel shall complete a **pre-enrolment induction** prior to commencing work on any project (via the DataScope system). This applies to all qualifying projects.
- A **site-specific induction** shall be delivered in a professional manner to all personnel working on a project by a competent and experienced ISG manager. Contractor managers / supervisors shall ensure that names for site-specific inductions are provided a minimum of 24 hours in advance of the induction.
- A **manager / supervisor induction** shall be completed by a competent ISG manager separately for all contractor supervisors.
- A **visitor induction** shall be completed by a competent manager prior to any visitor being escorted to operational areas. Visitors shall be escorted at all times when in operational areas.
- A **driver induction form** is to be completed for all delivery drivers that enter a live site area.
- Paper induction records shall be kept in a locked and secure location (records shall be stored online where DataScope is employed).
- Inductions shall have a means of checking the validity of all competency records.
- Checks shall be completed by the contractor supervisor at the time of induction to ensure personnel have the correct PPE.
- The contractor supervisor is to ensure all personnel are fully briefed on content of the safe systems of work.
- Once a full site induction has been completed by an operative, and competency records confirmed, they shall be provided entry via the project access control system.

Access control system

Non-local-language-speaking personnel

- Where a worker who does not speak the local language (or it is not their first language) has been identified by the contractor, they shall submit the site-specific controls they intend to implement to ensure effective communication within their risk assessment. This shall include a nominated translator.
- If the contractor is using a supervisor / colleague to act as an interpreter / translator, consideration is to be made to their competence and of the level of bilingual supervision to an appropriate ratio of workers.
  - Where workers are dispersed around a site then the ratio can be as low as 1:1.
  - Where personnel are grouped close together / in the same area, and understand their low-risk work, the ratio can be higher.
  - The ratio of supervision is to be recorded in the task-specific risk assessment.
- If a non-local-language speaker attends the induction and no nominated translator has been identified by the subcontractor, ISG retains the right to refuse access to the working area for that individual on safety grounds.

Induction room

- An appropriate space shall be made available for inductions to be held.
- Induction rooms shall include a monitor screen / TV to enable the induction presentation to be displayed.
- Project induction forms to be readily accessible for inductees, where a paper-based system is employed. Pens / pencils shall be provided.

Appropriate induction space to be made available

Reference / supporting documents

- FS-02 Welfare and site set-up
- FS-06 Safety critical medicals and fit to work
- FS-07 Setting people to work
- Induction procedure (available on the CMS)

FS-04 Engagement – Choose safe. Choose health

Introduction

Every individual working across our business / projects makes decisions every day that can impact or affect people's lives and the environment. Our 'Choose safe. Choose health' programme is focused on placing health and safety front of mind for every one of us, every single day.

'Choose safe. Choose health' goes beyond the typical approach to physical safety on sites. This programme seeks to provide the tools and conditions necessary to support a culture of empowered people working together towards health and safety every day.

A collective approach to engaging with all stakeholders is fundamental to achieving this goal.

Minimum requirements

Workforce engagement

- **Supply chain health and safety representatives**
  A member of each contractor's workforce shall be nominated as the designated workforce safety representative. It is important that this is a ground level operative to allow for feedback to be communicated to ISG and back to the operations teams.

- **Health and safety forums**
  A monthly health and safety forum shall be completed with the designated safety representative for each contractor. This meeting provides an opportunity for the workforce to communicate learning points or concerns to the site management team.

- **Workforce engagement noticeboard**
  A noticeboard, traditional or digital, shall be displayed at a prominent location on site to communicate daily hazards, workforce feedback, and current health and safety priorities.

- **Leadership insight tours**
  A monthly visit by a member of ISG's senior management team shall be completed. These visits focus on engagement with operatives to identify insights for action from workforce feedback on site.

- **Supply chain meetings**
  A weekly meeting shall be conducted with each contractor working on the project. This meeting shall include health and safety matters of note for workforce communication.

- **Supervisor co-ordination meetings**
  A daily recorded meeting shall be completed between ISG and the main supervisor representative of each contractor.

- **Director supply chain meeting**
  A regular meeting between a contractor and member of ISG senior management shall be completed. This meeting has a focus around supply chain health and safety performance and continual improvement. This shall be followed up by a tour of the operational area.

- **Workforce feedback system**
  A system shall be provided to enable all members of the workforce to raise site issues or feedback.

- **Health and safety stand down**
  A regular stand down shall take place to provide a chance to reflect on health and safety matters and announce the monthly awards.

Contractor ‘Choose safe. Choose health’ / workforce engagement requirements

- **Safe start briefings**
  Project supervisors shall ensure a ‘safe start’ briefing is completed daily with all personnel working on the project. This activity is to ensure that the contractor’s safe system of work is appropriate given the current working environment and nearby activities, and to communicate items raised from supervisor meetings.

- **Safe system of work**
  All operatives shall be briefed on the content of the safe system of work before commencing any task.

- **Toolbox talks**
  A health and safety toolbox talk relevant to the risks from current work activities shall be completed weekly by the works supervisor, and records submitted to the relevant ISG manager.

- **Supply chain leadership health and safety tours**
  A monthly visit, or at a frequency agreed with the project team, shall be completed by a member of senior management. Feedback from the visit is to be documented and submitted to the relevant ISG manager.

- **Supply chain professional health and safety inspection**
  A monthly visit, or at a frequency agreed with the project team, shall be completed by a professional health and safety practitioner. A report from the visit is to be documented and submitted to the relevant ISG manager.

Reference / supporting documents

- FS-02 Welfare and site set-up
- FS-03 Induction
- FS-07 Setting people to work

FS-05 Personal protective equipment (PPE)

Introduction

PPE shall be provided to ensure personnel are protected from health and safety risks. All persons entering an operational area shall be required to wear the minimum five-point PPE laid out in this standard. Task-specific PPE shall be provided to operatives, where identified by risk assessment.

Those setting people to work shall ensure that PPE has been properly assessed before works commence, and that users are provided with sufficient information, instruction, training and storage arrangements for PPE use.

Minimum requirements

The minimum clothing requirements on an ISG project are long trousers and a high-visibility (hi-vis) shirt / hi-vis waistcoat worn over a t-shirt. Bare legs or shoulders are not permitted.

The below five items of PPE form the minimum requirement to be worn at all times on site.

01 EN 397 safety helmet with side impact protection and chin strap to EN 12492:12

- Safety helmets shall comply with the below colour coding system:
  - Black: Contractor supervisor / manager
  - Orange: Slinger / signaller/ vehicle marshal
  - White: ISG manager / operative
  - Yellow: Visitors
  - Blue: Anyone coming to site not in the above categories.
- ICE (in case of emergency) ID tags are encouraged to be worn by individuals with known health conditions and to include emergency contacts.
- Only proprietary safety helmet liners are permitted beneath helmets. The wearing of hoodies, baseball caps, woolly hats or similar shall not be permitted.

02 Hi-vis yellow waistcoat to EN 20471

- Hi-vis clothing shall always be worn as an outer layer.
- All contractors are to be branded with ISG or the contractor's company name.
- For external streetworks on roads above 30mph and large civils operations, full-length hi-vis sleeves and long hi-vis trousers shall be worn.
- Slinger / signaller and gate person / site access traffic marshals are to wear orange hi-vis clothing, including orange hi-vis trousers.

03 Foot protection to EN 20345 c/w midsole protection (S3)

- Safety footwear with ankle support shall be worn.
- Where alternative footwear (such as safety wellington boots) improves the safety of works above this minimum requirement, this shall be confirmed by an approved safe system of work.

04 Eye protection to EN 166 optical class 1

- Type F – low energy impact eyewear with anti-fog lens to be worn as the minimum standard.
- For users of prescription glasses, over-glasses or prescription safety glasses shall be worn.
- Type B (medium energy impact) or Type A (high energy impact) to be determined via task-specific risk assessment.
- Management, supervisors and operatives shall ensure that goggles are worn when determined via the safe system of work.
- Where prescription eyewear is required, the user shall wear either prescription safety glasses, or over-glasses

05 Hand and arm protection to EN 388

- Suitable hand protection / gloves for the task being completed shall be worn based on approved risk assessment.
- Gauntlets to forearms shall be required for work in ceilings, voids, handling sharp edge materials or similar activities.

Additional / task-specific PPE

The below items of PPE are required when identified by an approved safe system of work.

Hearing protection

- Hearing protection, and the standard of this equipment is to be determined via approved risk assessment.
- Where a hearing protection zone (HPZ) is in use, hearing protection shall be available at the access point to the zone.

Respiratory protective equipment (RPE)

- In the first instance, measures shall be taken to reduce any respiratory hazards to an acceptable level without requiring RPE.
- RPE shall be used where there is no other practicable means to reduce dust, fume or vapour exposure to a safe level.
- Where RPE is required, users shall be clean shaven and hold a valid face-fit testing certificate for the corresponding type of mask. Records of face-fit testing are to be provided to ISG.
- Where this cannot be achieved, a positive pressure air-fed hood shall be utilised.
- Any cartridge filter masks shall meet the FFP3 standard with this clearly marked on the mask. Press-to-check type masks shall be used.
- **Replaceable filters shall be changed in line with the manufacturer's instructions.**

- All RPE shall be clean, maintained and stored in good condition. RPE shall always be kept in an appropriate storage container to not fill with dust.
- Other task-specific PPE shall be compatible with any RPE being worn.

Harnesses / lanyards

- Selection and use of this equipment shall be in line with the **LCS-04 Work at Height standard**.
- Only trained, authorised and competent users are permitted to use safety harnesses / lanyards.
- A pre-use inspection shall always be completed by a competent person.
- A six-monthly detailed inspection is required for all harnesses / lanyards by a competent person.

Flame, heat and arc-flash protective clothing

- The requirement for heat- and flame-retardant clothing, and arc-flash protection clothing, shall be determined via task-specific risk assessment. Heat protective clothing shall be to ISO 11612 standard.

Below is taken from the ISG signage catalogue (via Hobs)

Reference / supporting documents

■ LCS-04 Work at height ■ FS-04 Engagement – Choose safe. Choose health ■ FS-07 Setting people to work ■ CS-05 Tethering of tools ■ CS-11 Control of substances hazardous to health (COSHH) ■ CS-23 Dust ■ CS-24 Noise ■ CS-25 Cutting areas ■ CS-26 Hand arm vibration (HAV) ■ CS-28 Adverse weather

FS-06 Safety critical medicals and fit to work

ON HOLD

FS-07 Setting people to work

Introduction

Ensuring people have been set to work in the correct manner is of critical importance. Persons working on site need to be fully aware of the nature of risk presented by works on the project and of the agreed control measures. Effective planning, communication and execution of works is a key safety requirement. The following control measures must be in place as minimum standards when working on ISG projects.

Minimum requirements

01 Training and competence
Demonstrable competence must be evidenced by those involved for the task being undertaken.

02 RAMS
Project- and task-specific RAMS – **reviewed, agreed and briefed** to all.

03 Induction for all
Including the workforce, supervisors, visitors and delivery drivers.

04 Equipment and PPE
Must be on site and available before task commences.

05 Has anything changed from the agreed plan?
Daily supervisor meeting will be held with ISG, followed by safe start briefings delivered at the workface. This enables a ‘point of work risk assessment’ to be completed and it is the last chance to assess, before works start.

Contractor requirements

- **Inductions**
  All persons working on site must complete the pre-induction and upload the information to the DataScope database prior to attending site (where the DataScope system is employed) as well as book a site-specific induction from ISG at least 24 hours prior to arriving.
- **Training and competency**
  Full competency details are to be provided for each person working on site. As a minimum, operatives must hold a Build UK-approved competency card relevant to their work.
- **Work equipment / PPE**
  All equipment and PPE provided to an ISG project is to meet the minimum standards laid out by ISG and be subject to a regime of regular inspection and maintenance. This is to be checked by contractor supervisors prior to commencing work.
- **Supervision**
  An appropriate level of non-working supervision (SSSTS minimum) determined by the risk of the works must always be in place while work takes place.
- **Safe system of work**
  A documented safe system of work must be developed for each work activity undertaken on the project. Works are only to commence following acceptance of this document by an ISG site manager. Contractors must ensure all operatives are briefed on the content of the safe system of work before starting work. Note: A separate specific Young Persons risk assessment is required for any persons between the ages of 16 and 18 proposed for work on the project.
- **Safe start briefing**
  Project supervisors must ensure a ‘safe start’ briefing is completed daily with all personnel working on the project. This activity is to ensure that the contractor’s safe system of work is appropriate given the current working environment and nearby activities, and to communicate items raised from supervisor meetings.
- **Quality requirements**
  Contractors must ensure all workforce fully understand the site quality requirements, including Test Plan requirements, and fixings.
- **Supervisor meetings**
  A nominated supervisor from the contractor must attend the project co-ordination meeting and communicate relevant points to the working teams.

ISG site management team requirements

- **Hazard / risk**
  Details of project-specific risks are to be communicated to contractors prior to commencement of works.
- **Approved contractors**
  Only contractors approved via ISG's 'Doc-Hosting' system are to be employed.
- **Inductions**
  A site-specific site induction will be completed for all persons working on site.
- **Training and competency**
  All qualifications relevant to works are to be checked as part of the site induction process and confirmed valid.
- **Safe system of work**
  The documented safe system of work submitted by contractors is to be reviewed by the relevant ISG manager using the ISG review form.
- **Safe start briefings**
  To confirm that briefings are happening as part of the weekly returns process, and periodically attend these briefings to assess effectiveness.
- **Supervisor meetings**
  A daily recorded briefing is to be completed with the main supervisor representative of each contractor.

Reference / supporting documents

- FS-03 Induction
- FS-04 Engagement – Choose safe. Choose health

CS

Common standards

Choose safe Choose health

CS-01 Work at height approved access solutions

Introduction

Work at height needs to be effectively planned to prevent significant injuries, including from dropped objects falling from height. Selection of the most appropriate access equipment is essential to ensuring effective control.

In addition to this standard, specific standards are in place for high-level external access equipment:

- CS-16 Scaffolding
- CS-06 Use of mobile elevating work platforms (MEWPs)
- CS-07 Mast climbing work platforms (MCWPs)

Minimum requirements

The access equipment below reflects the hierarchy for managing work at height where it cannot be avoided. This standard shall be used in conjunction with ISG's **Work at height guidance**.

All equipment within this standard shall be fitted with an inspection tag on installation. The equipment is to be inspected before use, with a weekly recorded inspection.

Push around verticals (PAV)

This type of equipment is also referred to as pop-ups or Peco manual elevated lifts. A Peco lift is manual and non-electrical.

- Work areas shall be segregated by interconnected rigid red physical barriers with proprietary warning signage.
- Models shall have auto-locking wheels when elevated.
- Operators shall hold documented familiarisation training on the make and model.
- Daily pre-use and weekly recorded inspections shall be completed by a competent person. Records of inspection shall be provided to ISG.
- For accessing above ceiling grids, models with ceiling grid access cages available shall be used (pop-up only).

Mobile towers (PASMA)

- Advanced guardrail or telescopic towers shall be selected in the first instance.
- Double-width towers shall be given preference. Narrow-width towers are only to be used in areas where it is not possible to place a double-width tower.
- Mobile towers shall be constructed as per the manufacturer's instructions and PASMA guidance.
- Towers shall be assembled and dismantled by a person with the correct PASMA accreditation for the tower being used.

- Mobile towers shall only be used with all brakes deployed, and outriggers installed to the manufacturer's guidance.
- A current scafftag shall be displayed on all towers.

Telescopic podiums, delta decks and podiums

- Only two-wheeled-type podium steps shall be used (anti-surf-type required). Castors shall be locked before using the podium.
- Podiums shall only be used with outriggers installed.
- The manufacturer's instructions for the podium type shall be available with the podium.
- Delta decks shall be installed so that all locking mechanisms are correctly engaged, and that the deck forms a level platform.
- Gates shall be closed when in use.
- Guardrails shall be a minimum of 950mm from platform.

Platform steps

- The use of any steps shall be the last resort when selecting work at height access equipment.
- Platform steps shall take priority over conventional steps. Platform steps are those with a working platform and safety chain / gate.
- Platform steps are only permitted when used internally on flat, level ground.
- Work shall only take place from the platform level, not from the steps. Where platform steps are used, contractors are required to plan their work so that the correct height platform steps are available.
- Only Class 1 industrial type shall be used.

Conventional steps

- Conventional steps shall **NOT** to be used on projects, unless it can be demonstrated that exceptional circumstances dictate that no other viable option exists. Permission will only be granted after a valid justification report.
- If there is no alternative, conventional steps shall be the last resort only when selecting work at height access equipment.
- A specific risk assessment (NOT generic) shall be in place for the use.
- Conventional steps shall only be used with valid ladder permit in place.
- Only Class 1 industrial type shall be used.
- Ladder tag shall be displayed.
- When not in use, shall be taken away from the workface and secured to prevent unauthorised use.

Reference / supporting documents

■ LCS-04 Work at height ■ LCS-06 Prevention of falling objects ■ FS-07 Setting people to work ■ CS-05 Tethering of tools ■ CS-06 Use of mobile elevating work platforms (MEWPs) ■ CS-07 Mast climbing work platforms (MCWPs) ■ CS-16 Scaffolding ■ CS-17 Plant and equipment ■ Work at height guidance (available on the CMS)

CS-02 Protection of voids, risers, shafts and lift shaft edge protection

Introduction

Lift shafts, risers and holes / void penetrations in floors can present a risk of injury, either from persons, or tools / materials, falling into or through them. It is essential that adequate fall prevention measures are in place and maintained.

This standard shall be read in line with the detailed guidance within the **Riser, shaft and floor void protection standard**.

Minimum requirements

- The selection of voids, risers, shafts and lift shaft edge protection solutions shall be in line with the project-specific **Prevention of Falling Objects Risk Assessment and Plan** for all buildings deemed high
  and medium risk.
- A riser and shaft protection strategy shall be developed as part of the preconstruction planning process for all projects where shafts and risers are present. An up-to-date project-specific plan detailing shaft protection measures and key personnel shall be in place.
- Handover or responsibility between contractors and ISG shall be carefully controlled. The handover procedure shall include a joint inspection of all relevant holes, and an agreement reached regarding the condition and acceptability of the installed protection.
- Protection shall only be removed following issue and acceptance of a permit.
- Where a temporary platform is required, this shall be designed and checked by the temporary works engineer in accordance with the **Temporary works procedure**.
- For buildings deemed as high risk, the vertical risers and shafts shall be provided with protection that meets a minimum fire resistance of 30 minutes during the construction phase.
- As pipework is installed through risers, pipe collars shall be installed by the contractor at the time of installation to ensure there are no gaps around the pipework.
- Edge protection, hole coverings and signage shall be inspected and recorded in accordance with the **Temporary works procedure**.

Riser safety requirements

- **Prefabricated risers**
  - Consideration shall always be given to the installation of prefabricated modules installed into the structural frame / riser shaft by a specialist contractor.
- **Riser safe**
  - Preference is to be given to the use of a riser safe system, which comprises steel frames, moveable cross beams and plain Durbar flooring, which is cast into the floor slab.
  - The system shall be installed with security fixings to prevent unauthorised removal.
  - The system shall be spray painted to top face and include signage to state ‘Danger hole beneath, do not remove protection unless authorised’.
  - Where amendments are required to a plate, a platform is required beneath prior to removal and changing of top plate.

- **Glass reinforced plastic solutions (GRP)**
  - Preference shall always be given to solid-topped GRP solutions.
  - Design information shall be provided that allows for the structural integrity of the GRP to be maintained shall it be cut.

Shaft safety requirements

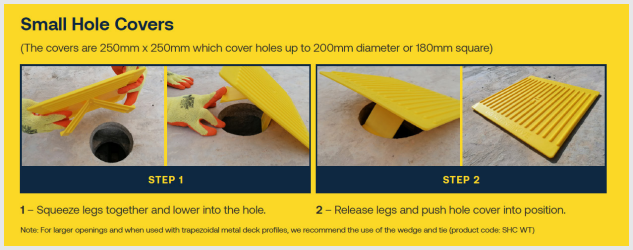
- Each shaft shall be provided with a full-height lockable door or gate, which is to be installed upon striking
  of the formwork / completion of the shaft walls at each floor level.
- Every shaft will be under the control of one named company and all access controlled by a permit to work system.
- Each shaft will be provided with signage indicating the safe working load (SWL) of any platforms, shaft number, name of responsible / controlling company.
- Where personnel are working in a shaft, a site-specific emergency rescue plan shall be in place and communicated to all relevant persons.

Lift shaft gates to be installed at the earliest opportunity

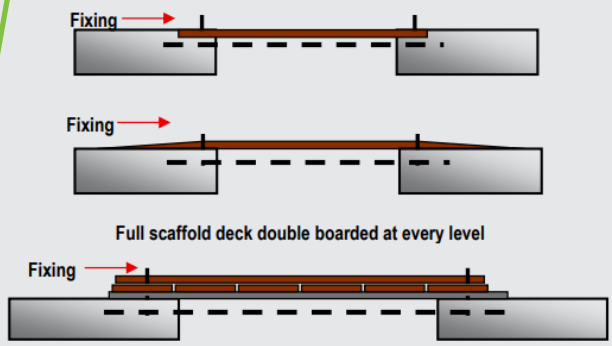
Floor void safety requirements

- Floor void protection shall be installed.
- Responsibility for the provision and maintenance of floor void covers shall be formally agreed.
- All protective coverings are to be clearly marked ‘Danger hole beneath, do not remove protection unless authorised’.
- Where a void or hole is of sufficient size to allow persons to fall, a secondary fall prevention measure (i.e. cast in mesh, or additional layer of 18mm ply) shall be in place below the top cover / boarding.
- Protection to floor openings in reinforced concrete frames shall be in place prior to removal of the slab formwork / decking. Protection shall be securely fixed and capable of taking the potential imposed loads of persons, material and plant.
- Where a void or hole is greater than 2m wide, or cannot be decked out and a risk of persons falling remains, it shall be protected with an enclosed 950mm high edge protection system, unless a 1,700mm edge protection is determined by risk assessment.

Small hole covers



Example floor void solutions



Please Note: These are example solutions only. All temporary solutions must be designed taking into consideration the site-specific constraints. This will include existing structure details required, loading and plan dimensions.

Reference / supporting documents

- LCS-04 Work at height
- LCS-06 Prevention of falling objects
- CS-30 Temporary works
- Prevention of Falling Objects Risk Assessment and Plan (available on the CMS)
- Riser, shaft and floor void protection standard (available on the CMS)
- Temporary works procedure (available on the CMS)

CS-03 Roof work

Introduction

Working at height remains one of the greatest causes of fatalities and major injuries. Roof work involves significant work at height and must be carefully planned and co-ordinated to control this risk.

Minimum requirements

- Considerations for the prevention of falls from height (including through fragile materials) shall follow the hierarchy of control within Health and safety in roof work HSG33.
- Roof surveys shall be conducted prior to work commencing to identify relevant issues including, but not limited to:
  - Location – site locations, roof height, local weather conditions, time of year, presence of overhead electrical and telephone services, microwave aerials, positions of guttering and rainwater downpipes.
  - Type of roof material – fragile / non-fragile, presence of asbestos-containing material, load limits for roof and adjacent areas, location of fragile tiles, roof lights and how they are identified, e.g. covered.
  - Existing protection – hidden edge protection, existing edge protection, i.e. handrails, parapets, 'Mansafe' systems. Request inspection and certification information from building owner or occupier where appropriate.
  - Further information – where appropriate meet with building maintenance contractors for first-hand knowledge.
- Contractors shall identify and agree the class of edge protection required for every roof or leading edge. This shall account for the type of roof, construction make-up, pitch, scope of works and relevant guidelines (i.e. British Standards, HSG33, or equivalent).
- Triple-height scaffold handrails or other proprietary system shall be provided when existing edge protection is not adequate, in line with the project **Prevention of Falling Objects Risk Assessment and Plan**.
- Guardrails shall be designed in a manner by which nets can be attached, when nets are required.
- Where scaffolding is required, the proposed scaffolding contractor shall be agreed with ISG prior to appointment and checked that the scaffolding contractor is a member of the NASC.
- Safety netting is the required method of fall protection during progressive roof work.
- Sky lights and fragile materials shall be protected with handrails. Clear proprietary warning signage will be affixed to all skylight protection.
- Tool tethering shall be implemented whenever working above a height of 3m, or within 2m of any edge or where there is a significant risk of a dropped object.
- A secondary means of access from the roof shall be available in the event of an emergency.
- Suitable means of controlling and securing access to the roof is in place to prevent unauthorised access.
- A suitable means of raising the alarm in emergencies must be available on the roof.
- Monitor weather conditions as the work progresses, with roof works to be suspended in adverse weather conditions.
- Lighting shall be installed to provide suitable and sufficient visibility for works.

- An emergency rescue plan shall be in place for all roof works. It is not acceptable for contractors to rely on the fire and rescue service.
- Measures shall be in place for public protection, in accordance with the **Prevention of Falling Objects Risk Assessment and Plan**.
- A safe system of work shall be produced and formally accepted prior to the commencement of works. For roof works, the documentation must also detail:
  - Management arrangements.
  - Date and duration and hours of work.
  - Number of staff.
  - Safe systems of work, including additional permit control system, where required.
  - Type of fall protection to be used.
  - Public protection measures.
  - Access and task lighting requirements where appropriate.
  - Emergency procedures and rescue plan.
  - Weather monitoring arrangements.
- 'Bombing' of materials from roofs is not permitted in any circumstance.
- The use of mobile elevating work platforms (MEWPs) for accessing / egressing from roofs is prohibited.
- Mansafe systems shall not be used for construction activities, unless designed for the specific purpose with all relevant certification and maintenance manuals in place and in date.

Walking mats to be placed on slippery roof surfaces

Roof sheeting

- Agreed means of fall protection shall be implemented and certified prior to commencement of works for all areas where a person could fall.
- Materials shall be sorted at ground level so that loads being lifted to the workface / roof are progressively loaded.
- Proprietary access staircases shall be utilised as the main safe access / egress to roof height, with controls to prevent unauthorised access.
- Details of proprietary safe working platforms to be used for access while loading out and installing materials shall be agreed. Walking of steel structures will not be accepted.
- Proprietary edge protection must be in place appropriate to the pitch of the roof in line with BS 13374 Temporary edge protection systems, or equivalent.
- Where roof sheets are stored on the steel frame, prior to installation, they shall cross three bays and be secured with ratchet strap or equivalent.
- Point load of the roof shall be confirmed with the structural engineer and incorporated into the planning of loading out.

Reference / supporting documents

- LCS-04 Work at height
- LCS-06 Prevention of falling objects
- FS-05 Personal protective equipment (PPE)
- CS-01 Work at height approved access solutions
- CS-04 Fall arrest safety nets
- CS-05 Tethering of tools
- CS-16 Scaffolding
- Prevention of Falling Objects Risk Assessment and Plan (available on the CMS)
- Health and safety in roof work HSG33

CS-04 Fall arrest safety nets

Introduction

Fall arrest safety nets provide a method of collective fall protection. It is critical that safety netting is correctly installed, inspected and managed to ensure its effectiveness. Safety netting reduces the potential for a fall from height injury.

Minimum requirements

- Considerations shall be given for the prevention of falls from height (including through fragile materials) by following the working at height hierarchy of control.
- Safety netting shall be the preferred method of preventing injuries due to falls from height during progressive roof work. Where an alternative method is required, the contractor shall justify the selection using a risk assessment.
- Safety nets shall be manufactured to the requirements of BS EN 1263-1, or equivalent.
- Safety nets shall be erected in accordance with BS EN 1263-2, or equivalent, and the guidance given in BS 8411, or equivalent.
- Installation of fall arrest safety netting shall only to be carried out by competent persons trained to an industry-recognised standard (i.e. FASET or equivalent).
- Contractors shall appoint a FASET (or equivalent) temporary works co-ordinator.
- All fall arrest safety netting systems shall be designed, installed and inspected in line with the **Temporary works procedure**.
- All temporary works design checks for fall arrest safety netting systems shall be carried out prior to **Permit to load** being issued for the installation of any fall arrest safety net system.
- A detailed safe system of work shall be in place for the works covering the erection / assembly, use, unloading and dismantling, including all inspections, checks, hold points, permits and certification that are required.
- The safe system of work shall detail the required inspections during use (loading) and the responsible person.
- During installation, maintenance and removal riggers shall, when working at height, use access equipment with integral edge protection.
- Fall arrest safety nets shall be fitted as close as possible to the underside of the working platform to minimise the distance and consequences of a fall.
- Adequate clearance below the net shall be provided for it to function properly and avoid the risk of the faller striking objects or the floor before being arrested.
- Where safety nets are installed in phases, the safety net shall extend beyond the leading edge of the work by at least 3m to allow for the likely horizontal trajectory of anyone falling from that edge.
- Where determined by risk assessment, safety nets shall be overlaid with an appropriate fine-mesh debris to protect people below.
- Any debris which falls into safety netting shall be removed as soon as practical.
- Following the impact of any heavy objects into nets, these shall be taken out of service.
- Weather conditions shall be monitored as the work progresses to ensure the works can be done safely. Where works cannot be undertaken due to adverse weather conditions, the project team shall be notified.

- An emergency rescue plan shall be in place to recover personnel from safety netting. It is not acceptable for contractors to rely on the fire and rescue services. Emergency rescue plans shall form part of the safe system of work and include details of designated rescue team personnel, competency and equipment.
- When not in use, safety nets shall be stored in storage sacks and not stored on the ground beneath.

Reference / supporting documents

- LCS-04 Work at height
- LCS-06 Prevention of falling objects
- FS-05 Personal protective equipment (PPE)
- CS-01 Work at height approved access solutions
- CS-05 Tethering of tools
- CS-16 Scaffolding
- CS-30 Temporary works
- Temporary works procedure (available on the CMS)

CS-05 Tethering of tools

Introduction

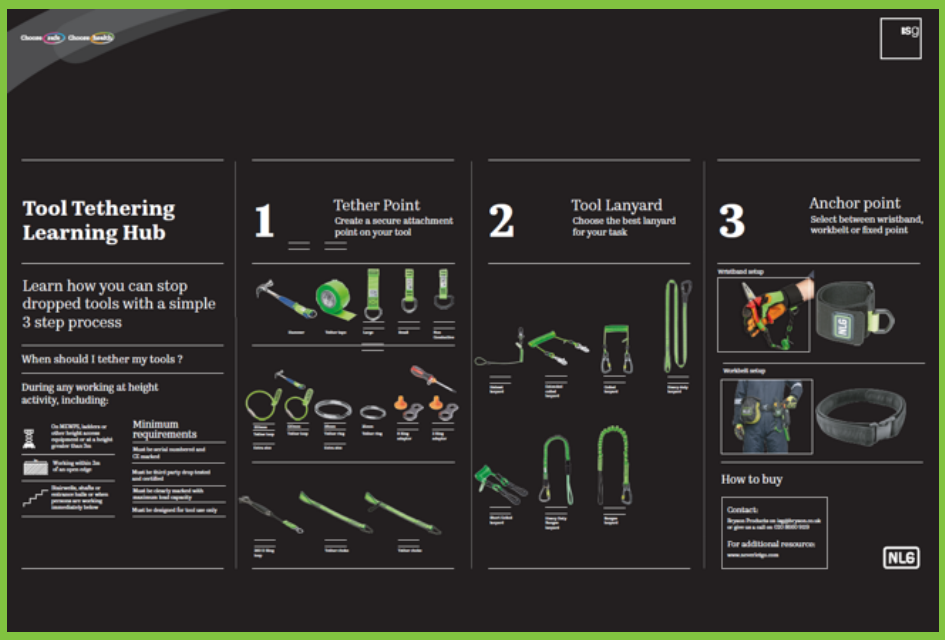
Falling objects, including tools, materials and equipment, are a significant cause of fatalities in the workplace. This standard applies to all works at height (i.e. above a height of 3m, or within 2m of any edge or where there is a significant risk of a dropped object).

Minimum requirements

Tool tethering – prevention of falling tools

- The prevention of tools falling can be achieved by tethering tools either to the individual, or to a piece of work equipment. Tool tethering is an essential requirement whenever a person is working:
  - At a height, greater than 3m.
  - Less than 2m away from an edge.
  - In any other location where a dropped tool could result in injury.
  - In any situation where tools could fall into the public arena or into safe routes.
  - In or adjacent to risers, shafts or stairwells etc.
  - In any area where persons are below the working area.

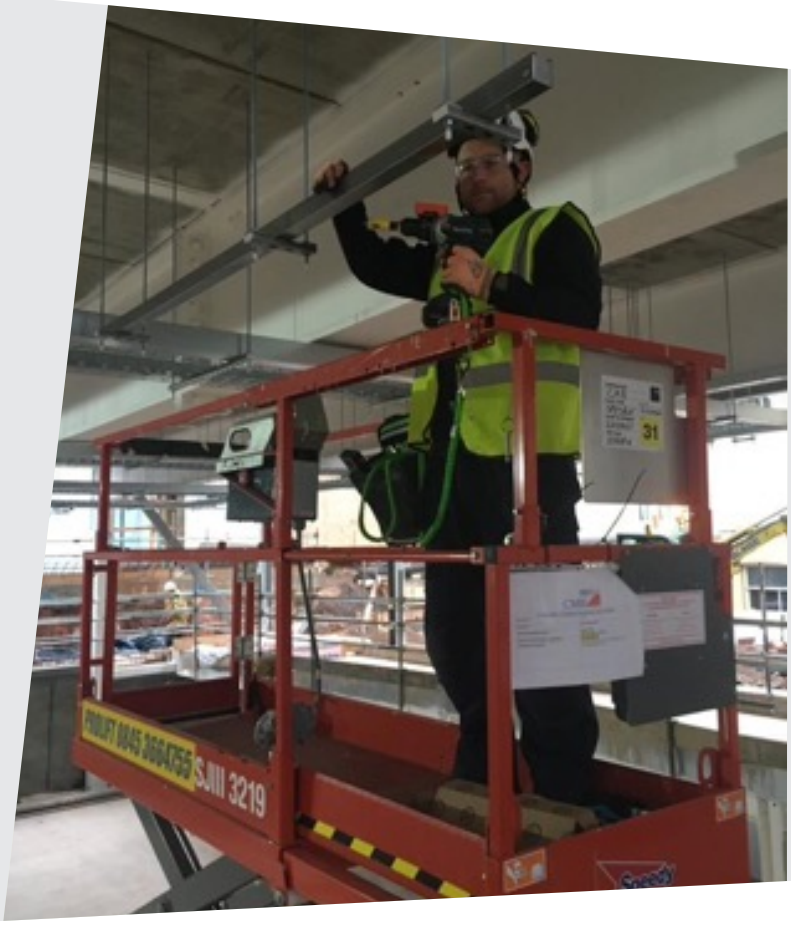
Tool tether learning hub



Tool tethering – key requirements

- Tool tethers shall be provided as a system. This includes a tether connection point, appropriate tool lanyard, and secure tool anchor point.
- All tool tethers must be inspected by a competent person prior to use, inspecting for indications of excessive wear or fatigue.
- Tether systems shall be selected with the correct strength rating for the tools being used. Always use a lanyard that is of sufficient strength (+25% or more).
- When tethering tools heavier than 4kg, anchor tools to structures or designated point (not to persons).
- Use a retractable tether to avoid entanglement issues when multiple tethers are needed.
- Ensure tool tethers are CE marked.
- A suitably sized exclusion zone must be implemented where there is a residual risk of a falling object (such as from materials). Exclusion zones shall be formed using interconnected rigid red physical barriers and clear warning signage.

Tool tethering in use



Reference / supporting documents

- LCS-04 Work at height
- LCS-06 Prevention of falling objects
- FS-05 Personal protective equipment (PPE)
- CS-06 Use of mobile elevating work platforms (MEWPs)
- CS-07 Mast climbing work platforms (MCWPs)
- CS-16 Scaffolding
- CS-17 Plant and equipment
- Work at height guidance (available on the CMS)

CS-06

Use of mobile elevating work platforms (MEWPs)

Introduction

Work at height needs to be effectively planned to prevent significant injuries or dropped objects falling from height. Mobile elevating work platforms (MEWPs) provide safe access to work at both low and high level. Selection of access equipment shall be in accordance with the working at height hierarchy and standards for **LCS-04 Work at height** and **CS-01 Work at height approved access solutions**.

This standard applies to scissor lifts and boom type MEWPs.

Minimum requirements

- A survey of the site is to be undertaken to ensure the MEWP selected is the correct equipment for the environment and the task.
- MEWPs are only to be operated on flat, level, firm ground, the exception being where the equipment is designed to operate on a slope.
- Where a stone platform is constructed for the use of MEWPs, a site-specific temporary works design is required, and the platform must be of sound integrity to accommodate the weight of machine, frequency of use, and maintained to this standard.
- The safe system of work shall detail the specification of the MEWP in full, including size, wheelbase, category, etc.
- The operator shall hold documented familiarisation training on the make and model, be fit to work, and possess the relevant category of IPAF or equivalent.
- An adequate rescue plan with resources and trained persons must be in place, this is to be tested at periodic intervals.
- Exiting a MEWP at height is not permitted.
- MEWP operations must be segregated by interconnected rigid red physical barriers and clear warning signage. Clear proprietary warning signage must be affixed to all exclusion zones.
- Ensure the maximum operational wind speed in which the MEWP can be safely used is identified, communicated and monitored.
- MEWPs shall be fitted with anti-entrapment systems.
- Where MEWPs require charging, specific charging areas are to be established in a segregated area.
- Where a MEWP is being operated remotely, the safe system of work shall address the relevant risks, specifically crushing – this may include unloading, traversing through doors, etc. In all instances when the remote-control unit is used, the operator must stand in a safe position remote from the MEWP.
- Bespoke accessories shall be used to securely transport materials. DO NOT IMPROVISE.
- All MEWPs are to be fitted with a telemetric system. ISG is to be given access to the information contained upon request.
- All MEWPs are to be clearly marked with a safe working load (SWL).
- All MEWPs are to display the maximum number of persons that can be carried, and be thoroughly examined every six months by a competent person.
- Appropriately sized spreader plates shall be positioned beneath MEWP outriggers, as per temporary works and manufacturer instruction requirements
- When lifting materials which extend beyond the confines of the MEWP basket, it should be secured by a compatible handling device approved by the manufacturer or supplier.- All MEWP working platforms / baskets shall be maintained to a clean housekeeping standard.

Delivery

- Delivering / collecting and loading / offloading of MEWPs must be in accordance with the project traffic management arrangements, including the requirements for marshalling and banking.
- MEWP movement to and from work areas must be undertaken in a controlled manner and be accompanied by a marshal.
- The delivery company must have suitable procedures for the loading and offloading of equipment, including how the delivery driver will be protected from falls when working at height.
- The delivery vehicle must have physical means to prevent the machine from falling. Measures shall include the beavertail (ramp) and bed during loading, unloading and transport.
- Any MEWP arriving at site must have a valid report of thorough examination and an operating manual.

Scissor lift MEWP with robust exclusion zone

Boom lifter with operator wearing harness and restraint

Reference / supporting documents

- LCS-02 People and plant interface
- LCS-04 Work at height
- CS-01 Work at height approved access solutions
- CS-05 Tethering of tools
- CS-08 Loading and unloading vehicles
- CS-30 Temporary works
- Temporary works procedure (available on the CMS)

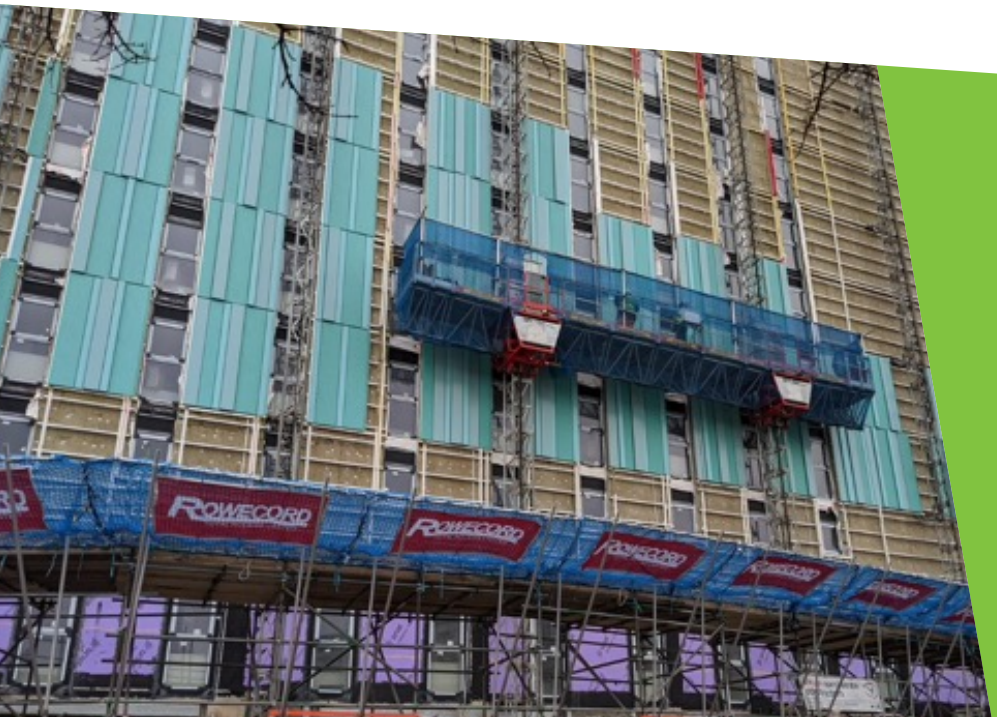
CS-07 Mast climbing work platforms (MCWPs)

Introduction

Mast climbers are a type of elevating equipment used to perform work at height. Mast climbers are high-risk equipment and shall only be used after consideration of alternative access means has been exhausted. Risks include working at height, falling objects, plant safety, electricity and crushing injuries. This standard shall be read in line with the more detailed **Mast Climber Minimum Standard** guidance document.

Minimum requirements

- As a general requirement, all mast climbers shall comply with BS EN 1495(+A2:2009) Lifting platforms, mast climbing work platforms.
- The MCWP operator shall be able to demonstrate competency in safe use and operation (such as IPAF, NPORS or CPCS).
- The MCWP operator shall hold documented familiarisation training on the make and model, be fit to work, and possess the relevant category of IPAF or CPCS.
- An additional 2m height handrail with flame-retardant safety netting (LPS 1215) is to be installed on all MCWPs.
- MCWP operations shall be segregated by interconnected rigid red physical barriers and clear warning signage to form an exclusion zone. Clear proprietary warning signage shall be provided.
- A method to close the gap between the MCWP and the façade shall be implemented.
- An audible travel alarm shall be installed whenever a MCWP is in motion.
- The control panel to all MCWPs shall contain an isolation switch with key. Keys shall be removed at the end of each shift and surrendered to ISG.



Additional falling object protection provided with net fan

- The power supply to any MCWP shall be appropriately protected from damage or unauthorised access.
- Fixed guards shall be installed around the mast sections to prevent operatives coming into contact with any moving components.
- Each individual drive unit shall be fitted with a mechanical device that automatically prevents the work platform exceeding 0.4m per second descent speed (e.g. a centrifugal brake).
- A fire point with suitable fire extinguishers is required on each MCWP platform.
- A mast climber duties board shall be provided to clearly display the machine's safe working load (SWL), load chart, machine ID number, operating wind speed, and project emergency rescue arrangements.
- MCWPs shall never be used above the manufacturer's stated safe wind speed. When working, wind speeds shall be monitored by the contractor with the use of a suitable calibrated anemometer (wind speed meter).
- Where two or more drive units are installed, a system to prevent falling with overspeed is required. The MCWP provider shall ensure that there is the means to detect malfunctions in each drive unit that could indicate a loss of mechanical integrity.
- Tool tethers shall be used at all times – refer to the **CS-05 Tethering of tools** standard.
- An emergency rescue plan is to be developed. The rescue plan shall be communicated to all relevant persons, and the required resources to implement it available.

Mast climber with robust safety netting

Roller decks designed to close gaps to façade

Reference / supporting documents

- LCS-04 Work at height
- LCS-06 Prevention of falling objects
- CS-05 Tethering of tools
- CS-17 Plant and equipment
- Mast Climber Minimum Standard guidance document (available on the CMS)
- Work at height guidance (available on the CMS)

CS-08 Loading and unloading vehicles

Introduction

The loading and unloading of materials and plant forms a fundamental part of the project logistics and is key to the safe and efficient operation of any project. The measures that the project will use to safely unload, and load, vehicles are to be detailed in the project **Site Logistics and Traffic Management Plan**.

Minimum requirements

- Ground conditions for unloading / loading areas shall be of sound integrity to accommodate the weight of the vehicle and frequency of use, and maintained to this standard.
- Contractors are to confirm the size and type of vehicles that will be required to visit site to ensure they are suitable for the ground conditions and facilities that are provided.
- Access onto the bed of the vehicle shall be avoided where possible.
- Where deliveries are being made from the roadside, the camber of the road towards the curb is to be factored, regarding the effect this can have on the stability of the load.
- Contractors receiving deliveries are to agree with ISG the means of offloading materials (e.g. tower crane, telehandler, etc). This information is to be communicated to their haulier so that materials can be loaded
to suit.
- Moffetts are only to be employed on a level tarmac / concrete surface. Moffetts are not permitted for unloading / loading on inclines or uneven ground.
- Where the haulier is undertaking unloading / loading operations this is to be undertaken in accordance with the **Lifting plan for non-crane activities**.
- Hauliers unloading / loading mobile plant shall possess current valid certification for unloading the item of plant.

Segregated pit lane with vehicle barriers used

- The vehicle unloading / loading area is to be designated with fencing / barriers and clear warning signage to form a restricted area. This could be of a permanent nature, such as a pitlane, or established in different areas according to site logistics.
- Pitlanes formed in the public environment are to be formed of anti-crash fencing. Access and egress to the pit lane is to remain clear and free of obstruction. Pitlanes that are to be re-moved at the end of each shift are to be subject to the **Temporary works procedure**.
- Arrangements shall be made for pre-slung loads, or palletised loads, where the project has a forklift or telehandler.
- Vehicle drivers shall receive a driver's induction using the **driver induction form**.
- Drivers are required to wear five-point PPE in accordance with the **FS-05 Personal protective equipment (PPE**) standard.

Unloading and loading

- A person from the contractor receiving / returning the load shall meet the delivery driver and vehicle at the designated unloading / loading area.
- Before any unloading commences, the vehicle and load are to be inspected by the driver, to confirm to the responsible person that the load is stable and safe to unload.
- If access to the vehicle cannot be avoided, then a safe means of access (e.g. a Truck Safe, podium) shall be provided.
- Access to the vehicle is not permitted if fall protection measures are not in place. These could take the form of a scaffold gantry either side and to the rear of the vehicle with double guardrails and toe boards, or double handrails / straps to the sides of the vehicle. If straps are used, these need to be suitable for fall prevention and inspected prior to use.
- Where the fall prevention measures are installed to the vehicle, the full number of support posts required
  for the fall prevention measures shall be in place.
- The haulier's collective fall prevention measures shall be checked for suitability.
- If it is not possible for collective fall prevention measures to be fitted to the vehicle, then personal fall prevention / restraint measures shall be in place, and personnel trained in the safe use of this system.
- Fall arrest soft landing systems shall not be utilised.
- Stop blocks on the tail lift are to be engaged.
- Materials and plant designated storage areas are to be agreed prior to the load being accepted.
- When removing materials from project, the load is to be secured and checked by the driver prior to departure.
- Every vehicle driver is to make a full 360° check of the vehicle for any obstructions before moving off.

Delivery vehicle with edge protection and central running line

Delivery vehicle with integrated edge protection

Example of proprietary edge protection system

Example of tail lift edge protection system

Reference / supporting documents

■ LCS-02 People and plant interface ■ LCS-05 Lifting operations, lifting equipment and accessories ■ FS-05 Personal protective equipment (PPE) ■ CS-10 Traffic management and vulnerable road users ■ CS-22 Gate person and traffic marshal ■ CS-30 Temporary works ■ Lifting plan for non-crane activities (available on the CMS) ■ Site Logistics and Traffic Management Plan (available on the CMS) ■ Temporary works procedure (available on the CMS)

CS-09 Asbestos

Introduction

Asbestos can be found in any building built before the year 2000 including offices, schools, prisons, supermarkets etc, and continues to cause around 5,000 deaths every year.

When materials that contain asbestos are disturbed or damaged, fibres are released into the air. When these fibres are inhaled, they can cause serious diseases. These diseases do not affect a person immediately – they often take a long time to develop – but once diagnosed, it is often too late to do anything. Therefore, it is important to manage asbestos and asbestos works.

Asbestos is a specialist subject and of sufficient risk that ISG has several documents to accompany this minimum standard. These are listed below and should be read and followed in support of the minimum requirements:

- Asbestos management procedure
- Asbestos Guidance Notes
- Asbestos survey report - Review sheet
- Asbestos plan of works checklist
- Asbestos removal works - Weekly inspection
- Asbestos Audit

Minimum requirements

People / training

- Persons who may disturb the fabric of building during a refurbishment project, in a building constructed prior to 2000, shall hold a current asbestos awareness training certificate (UKATA or ITAP, or equivalent). As a minimum this shall be an online awareness course, undertaken in the past 12 months.
- Managers / supervisors shall have attended a (classroom based) managers / supervisors awareness training.
- Workers who plan to carry out work that shall disturb asbestos require a higher level of information, instruction and training, in addition to asbestos awareness. This should take account of whether the work is non-licensed, notifiable non-licensed work (NNLW) or licensed work, and shall be job specific. Those surveying, removing, supervising and / or working within an enclosure and analysing shall be competent to do so, and shall be able to demonstrate training to the appropriate level.

Surveys

- A refurbishment and demolition (R&D) survey shall be carried out on all projects that involve work on a building built before 2000.
- Those undertaking asbestos surveys shall be UKAS accredited, or equivalent.
- All survey reports shall be reviewed against the scope of works, and the **Asbestos survey report - Review sheet** shall be completed.
- The survey shall be reviewed with any changes in scope or area of works.
- There shall be no caveats, and areas of the proposed work area shall have been accessed by the surveyor.

Management survey

- Staff and contractors entering a building to undertake survey work as part of the preconstruction phase are to request a copy of the building's asbestos management survey when the building was constructed prior to the year 2000.
- When an existing building that was constructed prior to the year 2000 is utilised as a project office or welfare facility, a copy of the building's asbestos management survey shall be consulted.

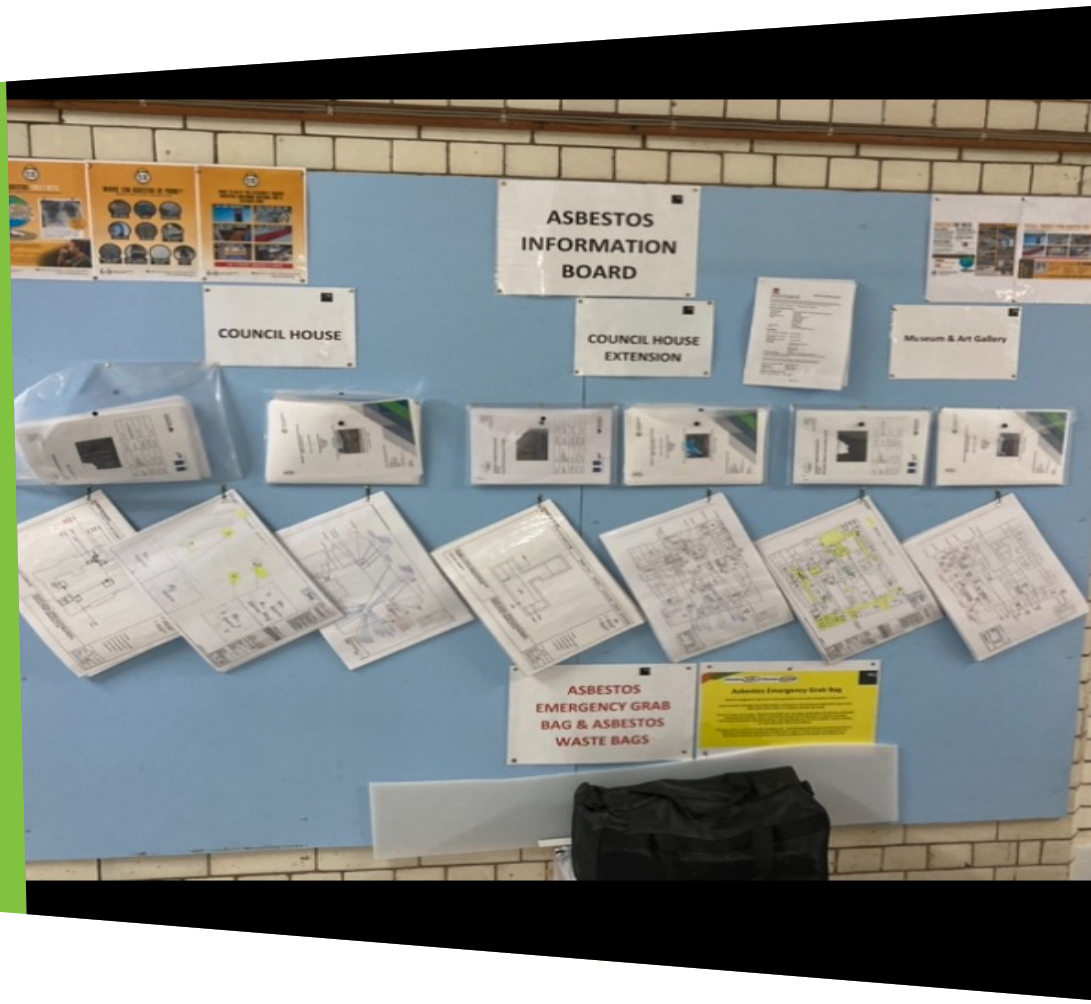
Grab bag

- All refurbishment projects shall have an asbestos grab bag, the contents of which shall include:
  - Paper suits x 4
  - Asbestos waste bags x 5
  - Respiratory protective equipment (RPE) - FFP3 (e.g. dust masks) x 3
  - Overshoes x 4 pairs
  - 'Warning suspected asbestos' signage
  - Red / white barrier tape
  - Gaffer tape
  - Plastic sheeting
  - Contact details for asbestos company to undertake sampling and reassurance (clean air) testing.

Communication

- On projects involving buildings constructed prior to the year 2000 where asbestos has been identified in the R&D survey:
  - The asbestos survey shall be made available to subcontractors.
  - An asbestos board shall be created with drawings indicating the locations where it is known asbestos is present.
  - Asbestos / asbestos-containing materials (ACM) shall be sprayed up or marked with warning stickers / signage.
  - Site records shall be maintained, with up-to-date records of asbestos that has been removed and that which remains.
- The project induction shall contain robust information relating to asbestos, including:
  - The location of known asbestos on the project.
  - Caution that unknown asbestos may still be present.
  - Action to take following the identification of suspected ACM.
  - The emergency procedures.
  - The location of the grab bag.

Asbestos information board and emergency grab bag

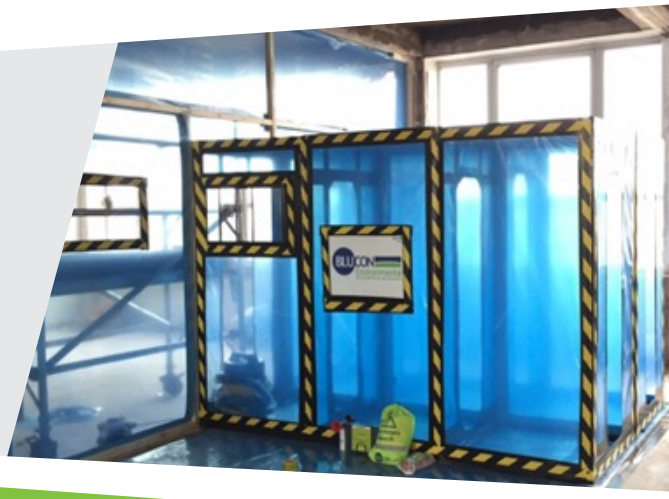


Removal, licence and notification

- The **Asbestos management procedure** shall be followed.
- A licenced subcontractor is required for ALL works involving any type or form of asbestos removal on any ISG site or premises.
- The asbestos removal subcontractor shall be a member of the Asbestos Removal Contractors Association (ARCA).
- In the UK, 14 days' notice shall be given to the Health and Safety Executive (HSE) of the intention to start works on licensable asbestos. This shall be done using an ASB5 Licensed Asbestos removal notification form. A copy of this shall be retained in the asbestos file on site.
- Before submitting the notification to the HSE, the safe system of work shall be reviewed and assessed using the **Asbestos plan of works checklist** and **Risk Assessment and Method Statement Review Form** to ensure it is appropriate and site specific.
- The safe system of work (Asbestos plan) is to detail the transit routes, decontamination units and final waste receptacle locations. This is to be shortest distance practically possible.
- **Asbestos removal works – Weekly inspection** and **Asbestos Audit** shall be completed during removal works.

Discovery

- Upon discovery of a potential ACM:
  - Works shall stop immediately.
  - The grab bag shall be retrieved and taken to the point of discovery. Using the contents (as listed above) the area shall be sealed and warning signage displayed.
  - Details of the people potentially exposed to ACM shall be recorded and issued to the health and safety team.
  - Persons potentially exposed shall remove contaminated clothing, which should be bagged and sealed, and issued with a set of overalls to wear.
  - Sampling shall be arranged.
  - Reassurance air test arranged and completed, and records maintained on the asbestos register.



Robust entry enclosure with emergency rescue kit

Reference / supporting documents

- Asbestos Audit (available on the CMS)
- Asbestos Flowchart Control (available on the CMS)
- Asbestos Guidance Notes (available on the CMS)
- Asbestos management procedure (available on the CMS)
- Asbestos plan of works checklist (available on the CMS)
- Asbestos removal works – Weekly inspection (available on the CMS)
- Asbestos survey report - Review sheet (available on the CMS)
- Risk Assessment and Method Statement Review Form (available on the CMS)

CS-10 Traffic management and vulnerable road users

Introduction

A large number of road traffic incidents involving HGVs occur each year, and a disproportionate number of these are construction vehicles. The aim of this standard is to improve vehicle safety through the design / maintenance of vehicles and fitting of appropriate safety equipment to existing vehicles, to ensure road safety is considered as important as site safety, and to work together to support vulnerable road users by adopting work-related road safety standards.

Minimum requirements

Traffic management

- A comprehensive **Site Logistics and Traffic Management Plan** shall be produced and re-viewed at regular intervals, as a minimum on a monthly basis.
- The plan is to detail strategic access routes and local access routes to be followed. Strategic access routes shall be recorded clearly on a map, and communicated to drivers and contractors using the plan.
- Contractors shall communicate logistics arrangements to their supply chain.
- The plan shall consider site suitability for safer vehicles inclusive of:
  - Approach angle
  - Material type
  - Rutting and bumps
  - Water.
- Crash map (www.crashmap.co.uk), or equivalent, to be incorporated into the plan.
- Safest 'last mile' vehicle routes to and from site shall be established and incorporated into the plan.
- The planned route to the project, where possible, shall avoid areas that may increase the traffic risk to vulnerable road users. As such, avoid routes that pass:
  - Residential areas
  - Schools
  - Hospitals
  - Health centres
  - Community centres
  - Sports facilities
  - Public transport infrastructure
  - Cycle superhighways
  - Bus stops.

- Site deliveries and collections are to be agreed, communicated and carefully managed by scheduling them in a manner that consciously avoids, where possible, the most congested times of the day, and in a way that is sensitive to local community.
- A delivery management system shall be employed. This can be either electronic or paper based.
- Consideration shall be given to vehicles or site plant leaving the project with mud on wheels.

Vulnerable road users

- Vulnerable road users are pedestrians who have the potential to unexpectedly step into the road or vehicle route. To address this:
  - HGVs shall have side guards, a close proximity sensor, CCTV or a Class V and Class VI mirror.
  - Signs shall be in place on the back of vans and lorries to warn cyclists of the dangers when passing.

Segregated vehicle pit lane

Traffic marshal checking driver information upon arrival to site

Reference / supporting documents

- LCS-02 People and plant interface
- CS-08 Loading and unloading vehicles
- CS-22 Gate person and traffic marshal
- Site Logistics and Traffic Management Plan (available on the CMS)

CS-11

Control of substances hazardous to health (COSHH)

Introduction

Control of substances hazardous to health (COSHH): Hazardous substances can take many forms including chemicals, products containing chemicals, fumes, dusts, vapours, mists, nanotechnology, gases (including asphyxiating gases and biological agents) and microorganisms that cause diseases such as leptospirosis or legionnaires disease.

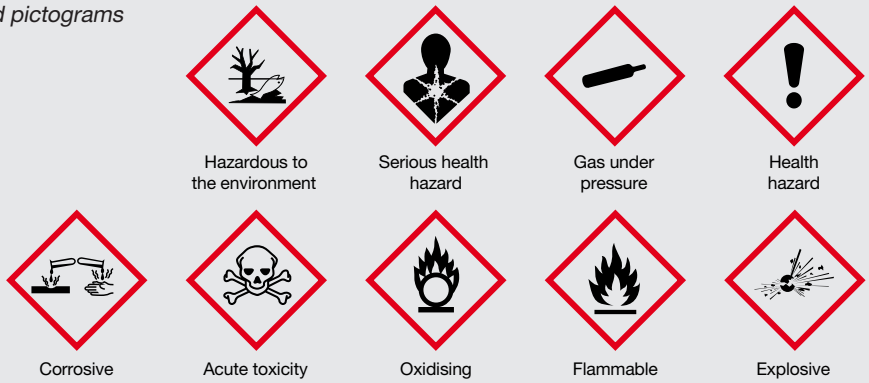
COSHH regulations do not address lead, asbestos or radioactive substances. These substances are controlled through their own specific sets of regulations.

Minimum requirements

- Before using hazardous substances, a COSHH assessment of the product shall be undertaken. As a minimum requirement, COSHH assessments shall include:
  - Type and form of substance
  - How the substance is to be used
  - Nature of risk and exposure route
  - Risk mitigation / control methods
  - Specific training and competency requirements
  - Storage arrangements
  - Correct type of PPE to be used
  - Emergency / spill response plan and equipment.
- Hierarchy of risk control shall be applied – eliminate COSHH where possible or substitute for less harmful, apply engineering controls, administrative controls, and PPE as the last resort.
- Read and comply with the information on the safety data sheet (SDS) and instructions on the product label. The SDS is not a COSHH assessment, as it does not provide the conditions in which the product will be used.
- Contractors shall maintain a COSHH Register for hazardous substances used on the project, complete with a copy of the safety data sheets. A copy of relevant COSHH assessments and safety data sheets are to be retained in the fire emergency box.
- The contractor shall ensure Workplace Exposure Limits (WEL) are complied with and not exceeded at any time.
- Where necessary and as identified on relevant COSHH assessments, the contractor shall provide for air movement, extraction and monitoring.
- All equipment used for COSHH control shall be maintained in effective working order.
- Contractors shall only bring onto site the minimum volume / quantity of hazardous materials required.
- Contractors shall provide suitably sized bunded areas for the safe storage of COSHH. Where COSHH presents a flammability risk, the storage unit shall be fire resistant and include ventilation.
- COSHH storage areas shall be provided with correct signage, located in designated areas, and segregated from other hazardous substances as necessary.
- COSHH substances shall be stored in designated areas only when not in use.
- Contractors shall provide spill kits, with a suitable number of operatives trained in emergency response relevant to the COSHH items used.

- Hazardous substances shall be stored in designated receptacles that are clearly labelled.
- Where identified by COSHH assessment, contractors shall set up a restricted work area with pedestrian barrier or similar, to ensure surrounding workers / trades are adequately protected.
- Contractors shall communicate the findings of the COSHH assessment to those carrying out the works.
- Health surveillance shall be provided by the contractor in compliance with COSHH regulations.
- Emergency procedures shall be detailed in all COSHH assessments and communicated to relevant persons. Contractors shall ensure that all equipment necessary for the emergency response is available at the workface.

Hazard pictograms



Example of a secure fully bunded COSHH store

Reference / supporting documents

■ LCS-03 Confined spaces ■ LCS-08 Fire safety ■ FS-05 Personal protective equipment (PPE) ■ CS-17 Plant and equipment
■ CS-23 Dust ■ CS-29 Welding ■ CS-31 Fuel storage and refuelling ■ COSHH Procedure (available on the CMS)
■ The Control of Substances Hazardous to Health Regulations 2002. Approved code of practice and guidance (available on the CMS)

CS-12 Access control

Introduction

Access control systems are vital to prevent unauthorised access to our projects. A well-established system aids projects through setting a high visual standard, automatic access for authorised operatives, a point of automatic emergency egress, and a method for tracking key performance indicators (KPIs).

DataScope is a strategic partner with ISG and has developed the DataScope Time and Attendance and Pre-induction platform to meet ISG requirements.

Minimum requirements

- The supplier of project access control systems shall be DataScope Systems Limited. DataScope shall be utilised as per the **Implementation of DataScope** procedure.
- ISG's contact details for DataScope are sales@datascopeplc.com, helpline telephone +44 (0) 845 450 7387.
- The location of the access control system shall be determined based on the project **Site Logistics Plan** and **Project fire plan and fire risk assessment**.
- Where employed, the DataScope delivery management system shall be used to schedule and plan deliveries.
- For sites using turnstiles, ISG shall supply an 'open network' 3G or 4G internet connection for the biometric enroller in the induction room.
- Where turnstiles are utilised, tool access points (i.e. hatches) are to be provided to enable personnel to pass tools and equipment onto the project without impeding access.
- The preferred method of turnstile activation is access cards. Biometric systems (e.g. fingerprint readers / facial scanners) are permittable, but must be approved via ISG by an email to the compliance team at group.compliance@isgltd.com.
- Project access systems must be configured for emergency access. Where practical, turnstiles shall be connected to any fire alarm systems and allow for the outwards passing of people from the project in an emergency scenario.
- Pedestrian access routes shall be a route segregated from vehicles and plant, with crossing points as appropriate.
- Robust vehicle gates shall be provided to a minimum height of 2.4m. The gates are to be of anti-climb construction, with any gaps secured with a fixed covering.
- All access points, including vehicle gates, are to be fully secured from unauthorised access and locked whenever unattended.
- A data privacy notice shall be displayed in a prominent area by the point of access. Where CCTV is in use, projects shall display a CCTV surveillance notice.
- Project teams are to ensure contractors are only given login access to their own companies, not 'All Companies'.

Contractor requirements

- Contractors are responsible for ensuring that operative pre-induction information is uploaded to DataScope ahead of time, including full competency details.
- Prior to arrival on a project, operatives shall complete the online pre-induction ahead of time. The induction and information must be completed and uploaded into the platform 48 hours prior to attending site.

Turnstile complete with access control and information board

Reference / supporting documents

- FS-02 Welfare and site set-up
- FS-03 Induction
- FS-04 Engagement – Choose safe. Choose health
- Implementation of DataScope procedure (available on the CMS)
- Project fire plan and fire risk assessment (available on the CMS)
- Site Logistics and Traffic Management Plan (available on the CMS)

CS-13 Access routes (including ramps and steps)

Introduction

It is critical that safe access routes are provided to all persons working on a project. This includes clearly defined and level walkways with ramps and steps required for changes in level, and physical segregation between vehicles and pedestrians.

Minimum requirements

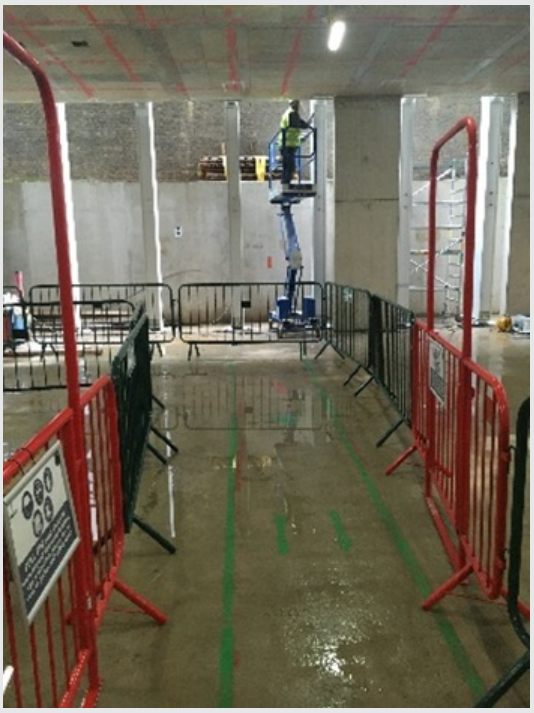
- Access routes around the project are to be clearly designated and free from tripping or other hazards. This includes on-site access routes, such as to materials storage areas.
- Access routes shall be covered with suitable material – tarmac, concrete or flags. By exception, stone may be used, this shall be compacted, level, and binded with dust.
- Access routes shall provide physical segregation between vehicles and pedestrians. Pedestrian walkways are to be provided with interconnected rigid red physical barriers or Chapter 8-compliant barriers adjacent to roadways.
- Red-hoop crossing points shall be established wherever a walkway is required to cross a vehicle route. The area shall contain clear warning signage for both vehicle users and pedestrians.
- Zebra crossings shall be established for long-term crossing points.
- Access routes shall be planned to avoid blind corners wherever practical. Visibility aids (e.g. convex mirrors) shall be provided to allow visibility to vehicle operators or pedestrians in areas with blind corners.
- Access routes shall be provided with adequate illumination.
- Access routes in proximity to other hazards shall be carefully planned. Protective measures for falling objects are to be provided in line with the project **Prevention of Falling Objects Pla**n (i.e. utilisation of façade sheeting, netting, fan solutions, protective tunnels, etc, as planned).
- Anti-slip matting or GRP grating shall be provided to any external areas where there is a residual slip hazard (i.e. GRP matting for rebar access or anti-slip matting for flat roof).
- Any areas under construction (e.g. pre-cast concrete stair landings) shall be infilled with plywood or screed before being utilised as an access route.
- Pre-cast concrete stairs shall be provided with pre-installed edge protection.
- For raised access flooring / changes in level, these areas shall be highlighted and protected with either interconnected rigid red physical barriers, warning cones with plastic chain or retractable safety strip, or equivalent.
- Cables shall be avoided along access routes. Where practical, cables shall be routed above head height or buried. If not practical, proprietary cable covers shall be positioned.
- Manholes and chambers shall be protected with proprietary markers or secure covers.
- Any small openings on access routes are to be protected.
- Safe access shall be provided into all excavations. For excavations greater than 1.2m depth a proprietary system shall be provided, where possible this is to be a stairs system in preference to a ladder access.
- Project teams shall ensure that a secondary means of emergency access is provided within the access route arrangements.

Ramps and steps

- Changes in level shall be clearly demarked.
- Any changes in level >100mm shall require access ramps or steps.
- Ramps and steps shall be provided with edge protection and handrails wherever there is falling from height risk.
- Access ramps and steps are to be constructed in accordance with the **CS-30 Temporary works** standard and **Temporary ramps engineering guidance**. Ground conditions (sub grade) shall be confirmed as appropriate for the imposed point loading from ramps or steps, specifically scaffolding.
- Where practical, bespoke access step units or scaffolding shall be selected to on-site constructed steps.
- Temporary ramps shall be strong enough to support the anticipated load, such that it doesn't deflect when in use. They shall be secure, so will not move during use. The front edge shall be chamfered, with all edges highlighted in yellow paint. Ramps shall include a slip-resistant surface, suitable for wet conditions.
- Where ramps are in use for materials movement, preference shall be given to auto-braked / auto-cut-off plant / equipment to avoid loss of control (including trolleys and pallet trucks).
- Gradient selection for ramps shall be based on the use of the ramp and not simply limited to the space available. Steep ramps shall be avoided as they can cause accidents from runaway wheeled items.
- All ramps and steps shall be formally inspected (recorded) not less than every seven days by the temporary works co-ordinator / supervisor.

Fully designed access ramps

Internal access route



End protection installed where barriers present trip hazard (RB2000 shown)

Internal / external access routes with anti-slip matting and clear directions

Reference / supporting documents

■ LCS-02 People and plant interface ■ LCS-06 Prevention of falling objects ■ FS-02 Welfare and site set-up ■ FS-03 Induction
■ FS-04 Engagement – Choose safe. Choose health ■ CS-10 Traffic management and vulnerable road users
■ CS-12 Access control ■ CS-30 Temporary works ■ Prevention of Falling Objects Risk Assessment and Plan (available on the CMS) ■ Temporary ramps engineering guidance (available on the CMS)

CS-14 Housekeeping and materials storage

Introduction

Housekeeping is not just cleanliness. It includes keeping work areas neat and orderly, maintaining walkways and floors free of slip and trip hazards, and removing waste materials. Management of construction materials is fundamental to the safe and efficient operation of any construction project. Effective housekeeping and materials storage can eliminate workplace hazards, improve quality of work, and allow for efficient site management.

Minimum requirements

Housekeeping

- Any waste material and debris shall be removed from work areas at regular intervals. Contractors shall ensure housekeeping is reviewed and addressed daily by their supervisors.
- All persons shall undertake a general tidy-up of their work area at the start of shift, before breaks, and at the end of shift.
- Adequate and suitable waste containers shall be made available to allow for all types of generated waste
  to be disposed.
- Any timber materials are to be de-nailed immediately.
- Any exposed reinforcement bar (rebar) shall be protected with covering strips or anti-impalement mushroom caps.
- ISG shall issue clean-up notices, with associated charges, where high standards of housekeeping are not maintained by contractors.

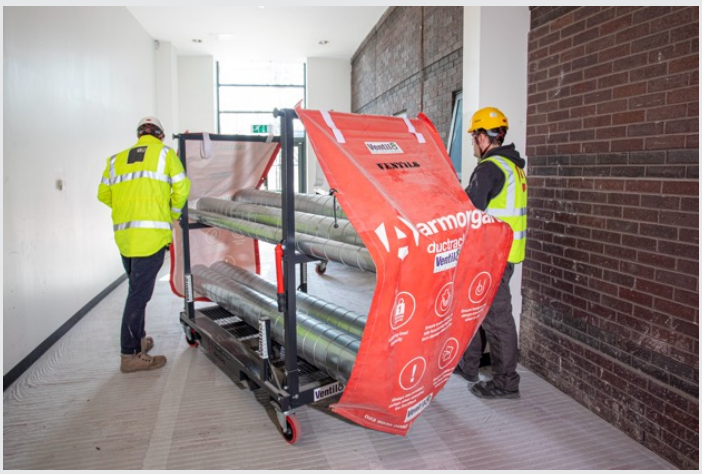
Materials storage

- Just-in-time delivery and the use of off-site storage shall be implemented where practical to reduce the amount of material on site at any one time.
- All deliveries are to be scheduled and planned using the project delivery management system.
- The location and size of materials storage areas is to be planned, agreed, and allocated between ISG and contractors.
- Materials storage areas shall be planned to ensure that all materials are accessible and free of obstruction.
- Materials storage area planning shall consider handling routes to the required workface. The distance between storage areas and work activities should be kept as short as possible in order to reduce handling risks.
- Materials storage / lay down areas shall be clearly marked and segregated.
- Materials shall not be stored, or laid down, in walkways, fire escape routes or vehicle routes.

- Contractors shall provide clear signage to demark their storage areas.
- Materials shall be stacked in a safe manner with securing straps where necessary. No leaning materials are permitted (e.g. sheets, boards, frames and doors). Also refer to the **CS-33 Storage and transport of sheet materials** standard.
- All toolboxes / site boxes must be provided with clear signage indicating ownership by the contractors. Lids to tool / site boxes shall have soft-close or hydraulic status, be lockable, and contain a lifting handle.
- 'A frames' and stillages being used to transport or store materials must be designed, manufactured and CE marked. The safe working load (SWL) must also be displayed.
- Ductwork and pipework bends and consumables shall be stored in a solid container that can be easily relocated.
- Lengths of ductwork and pipework are to be stored on a suitable storage rack with no exposed sharp edges.
- Storage racks shall be utilised for the storage of long lengths of materials with no exposed sharp edges (e.g. pipework, ductwork, electrical containment, uni-strut, dry lining stud work or similar). Requirements for storage racks are:
  - Storage racks are not to be overloaded.
  - Materials shall be equally distributed to prevent the rack overturning.
  - Racks are to be provided with lockable wheels, with these applied wherever the unit is stored.
  - Signage must be clearly displayed to detail ownership, SWL, and the weights of individual items.

Toolboxes / site boxes with soft-close hydraulic lids

Storage rack with protective covers for ductwork



Flammable and hazardous materials – including gas cylinders and LPG

- Flammable and hazardous substances shall be stored in accordance with manufacturer requirements, and only stored in flame-resistant containers with ventilation. Due to fire risk, the storage locations must be agreed in advance and located externally only, as far away from any buildings or temporary accommodation as practical.
- This section must be read in conjunction with the **LCS-08 Fire safety** and **CS-11 Control of substances hazardous to health (COSHH)** standards.
- Where large amounts of flammable waste / material are stored, these shall be covered with LPS 1207 or equivalent compliant covering material.
- The following measures are to be implemented when gas or LPG is to be stored on a project:
  - Gas / LPG cylinders shall be stored away from combustible materials. They are not to be stored within or close (within 10m) of occupied buildings (including temporary accommodation).
  - Cylinders shall be stored at ground level – remote from pits, drains and low-lying areas where practical.
  - Cylinders shall be stored in bespoke gas safety cages and locked.
  - Warning signage and display notices shall be displayed wherever gas / LPG is stored by the providing contractor (i.e. 'LPG – Highly flammable', 'NO SMOKING' or 'NO NAKED FLAME').
  - Cylinders shall be stored in a vertical position and restrained where required to prevent them from falling.
  - Empty cylinders shall be stored in a separate cage to full cylinders.
  - LPG / gas cylinders shall be stored at least 3m away from other cylinders like oxygen, chlorine and ammonia.
  - For the transport of cylinders, only bespoke gas lifting cages or manual trolleys are to be utilised. This equipment shall have a means of securing the cylinders during transport.
  - A written procedure shall be in place to detail robust emergency arrangements where LPG / gas cylinders are in use or stored.
  - The provision of automatic flammable gas detection equipment shall be considered for enclosed storage locations.

Well-managed materials in designated area

Reference / supporting documents

- LCS-06 Prevention of falling objects
- LCS-08 Fire safety
- FS-02 Welfare and site set-up
- CS-11 Control of substances hazardous to health (COSHH)
- CS-27 Manual handling
- CS-33 Storage and transport of sheet materials

CS-15 Demolition

Introduction

All demolition, dismantling and structural alterations shall be carefully planned and carried out in a way that suitably controls risk. Key issues arising from demolition and dismantling works include falls from height, falling materials, uncontrolled collapse, risks from connected services, plant and people segregation, hazardous materials, noise, and vibration.

This standard applies to structural demolition. The stability of a structure depends on the inter-action of its component parts. An incorrect sequence in the removal of these parts can result in a premature and unplanned collapse.

Minimum requirements

- The ISG health and safety team shall be notified of any demolition works prior to commencement.
- Preconstruction information and surveys are to be provided, carried out and reviewed. These shall include asbestos refurbishment and demolition survey, existing utilities, structural reports, the presence and location of substances hazardous to health, topographical and environmental.
- Demolition supervisors and operatives shall be able to demonstrate their competence in line with the Certificate of Competence of Demolition Operatives (CCDO) Scheme or equivalent. Certification shall be held on site.
- Plant operators shall hold the required CPCS competency for the related plant, along with the appropriate add-on training for high-reach demolition rigs and munchers, etc.
- All persons involved in the demolition or alteration of building structures constructed before the year 2000 shall hold asbestos awareness training certification – refer to the **CS-09 Asbestos** standard.
- A demolition plan shall be supplied by the contractor, detailing the sequencing and methods of demolition, and shall be issued with a safe system of work.
- The demolition plan shall be reviewed by a temporary works co-ordinator and an engineer employed to confirm the method and sequencing to maintain stability of the building and any adjacent structures, where required.
- Plan and manage activities to reduce health risks (particularly dust-related). The demolition plan shall include measures to reduce dust and noise (e.g. water / mist cannon suppression).
- Demolition operatives shall wear full-length overalls.
- Where scaffolding is required, the demolition plan will include details on the sequencing of demolition and removal of scaffolding to maintain structural stability.
- Permissions, consents and licenses shall be required before work commences (e.g. Section 80, ASB5 Licensed Asbestos removal notification form).
- A **Permit to demolish** shall be issued prior to commencing works. Other permits such as electrical, confined spaces, hot works may be applicable.
- Those undertaking demolition activities shall understand their responsibility for the safe disposal of all materials leaving the site.

Reference / supporting documents

- CS-09 Asbestos
- CS-23 Dust
- CS-24 Noise
- CS-26 Hand arm vibration (HAV)
- CS-30 Temporary works
- Permit to demolish (available on the CMS)

CS-16 Scaffolding

Introduction

This standard applies equally to scaffolding packages procured directly and those procured through contractors. This is to be utilised in conjunction with ISG's **Scaffolding minimum standards** guidance document, Prevention of Falling Objects Guidance and Strategy" document and relevant National Access & Scaffolding Confederation (NASC) technical guidelines, or equivalent.

Minimum requirements

Appointment

- All scaffold contractors shall be selected from ISG's contractor supply chain database. Where a scaffold package is part of a contractor's package, the scaffold contractor selected shall be approved on ISG's supply chain database.
- Scaffold contractors are to be a member of the NASC, unless otherwise authorised.

Competency

- All scaffolders shall be CISRS registered, and work in accordance with all NASC guidance documents, or equivalent.
- One advanced level scaffold supervisor, with either SMSTS, SSSTS or CISRS supervisor competency shall be present.
- Scaffold labourers shall not carry tools.
- Trainee scaffolders shall be under full-time supervision by a CISRS advanced scaffolder.

Design

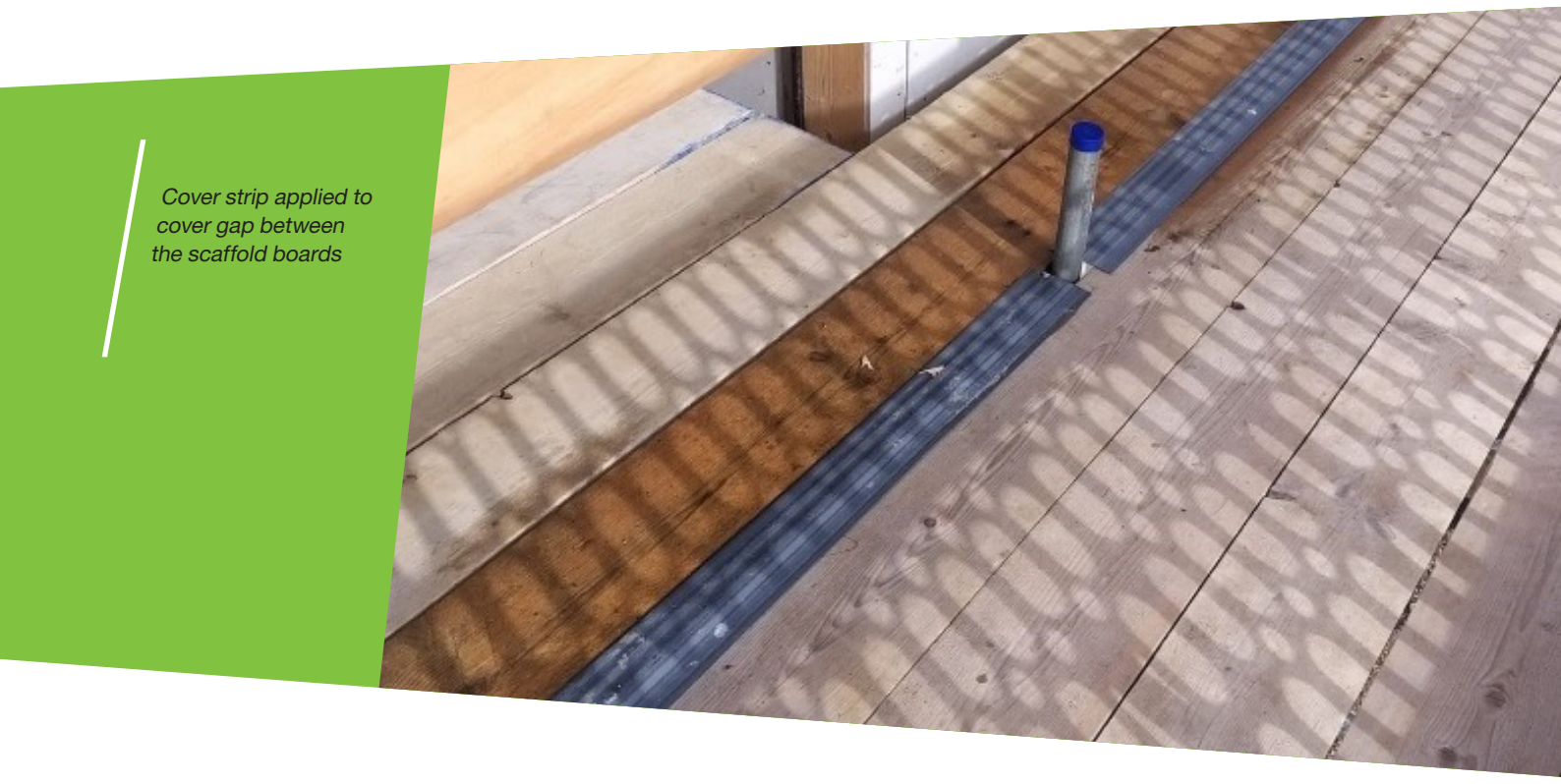
- All tube and fitting scaffolds are to be designed in line with the requirements of NASC guidance TG20, or equivalent.
- All types / brands of system scaffolding used shall conform to the relevant BS EN 12810/12811 standards, or equivalent.
- All scaffolds are to be designed by a competent person, in accordance with the **Temporary works procedure**.

Safe system of work

- All scaffolds shall be erected, modified or dismantled in accordance with the requirements of NASC guidance SG4, or equivalent.
- Where scaffolding works are to be completed over public areas, these shall be subject to a robust exclusion zone with interconnected red pedestrian barriers and clear warning signage, with a marshal to secure the zone.
- Where an exclusion zone cannot be provided, a climbing fan shall be employed and shall rise and lower with the erection or dismantling respectively.
- All tools shall be tethered. Materials shall be tethered in high-risk environments.
- A separate documented safe system of work for dismantling shall be in place. This shall clearly detail the striking sequence, methodology and works-specific rescue plan.
- Only electric winch or braked pulley wheels are permitted and shall be subject to a lifting plan.

Scaffolds

- Lapped boards are not permitted without justification.
- Gaps are not permitted between boards (including between inside standards).
- Twisted boards are not permitted.
- Horizontal protruding tubes are not permitted.
- Materials may only be stored vertically when restrained and the scaffold has been designed to accommodate the load.
- Scaffold sheeting and debris netting shall be branded wherever possible and shall be fire retardant to the LPS 1215 specification for external materials.



Cover strip applied to cover gap between the scaffold boards

Gantries and loading platforms

- Scaffold gantries are to be double boarded with polythene sheeting sandwiched between, with this covered with buffalo board or similar.
- Gantries / loading platforms are to be boarded or brick guarded to the top guardrail. This is to be designed and constructed in accordance with the **Temporary works procedure** and **Prevention of Falling Objects Plan**.
- Gantries / loading platforms shall clearly display their safe working load (SWL) with pictorial examples.
- Roll-over guardrail / gating shall be the minimum requirement.

Scaffold ties and anchors

- Physical ties and fixings shall be tested in line with NASC guidance TG20 and TG4, or equivalent, with a written record of the tests completed and issued to ISG.
- A minimum of three anchors or 5% of all anchors installed (whichever is greater) shall be tested by a competent person. This person shall be different to the person who installed the ties.
- Should a scaffold anchor fail its proof test, then the frequency of anchor testing shall be doubled. This frequency doubles again should a second anchor fail. Should more than two anchors fail, then 100%
  of the anchors shall require proof testing and the anchor used, and installation method, to be revisited.
- All anchors shall be clearly labelled and tagged ‘Do Not Remove’.
- All testing equipment to be calibrated in line with the manufacturer’s guidance.

Handover / acceptance / inspection

- Statutory scaffold inspections shall be included within the scaffold contractor’s package.
- Prior to handover / acceptance of the scaffold, ISG and the scaffold supervisor shall jointly inspect, and a full temporary works scaffold handover pack shall be in place prior to the handover certificate being accepted.
- All scaffolds are to be visually inspected daily and recorded at intervals no greater than every seven days or following alterations / events that may have affected the stability or integrity of the scaffold.

Example of scaffold tubes and boards tethered, using drop-tested tethers in high-risk environment

- Scaffold inspections shall be undertaken by a suitably competent person who has attended a CISRS scaffold inspection training course, or a CISRS Scaffolder or Advanced card holder, who is permitted to inspect structures up to the grade of their card (i.e. CISRS Scaffolder basic structures, and Advanced scaffolder all structures), or equivalent.
- Partial handover shall not be accepted unless incomplete areas are fully secured and a design for the working scaffold is issued. This design shall be reviewed and approved by an independent temporary works engineer.

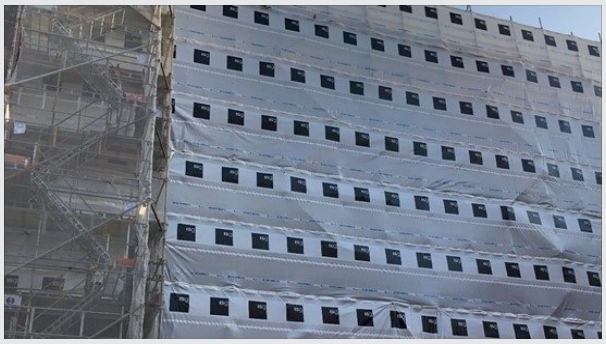
Record keeping

- A scaffold inspection tagging system shall be used and affixed at all points of access, and gantries / loading areas.
- Statutory inspection reports and a scaffold register are to be maintained on site.

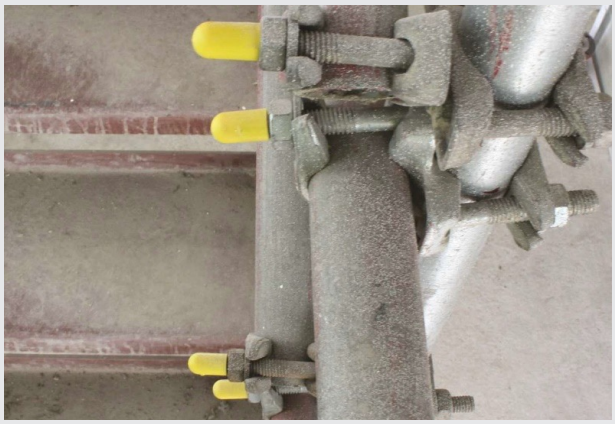
Access

- System stair towers shall be utilised as the primary means of access where practical.
- Ladders shall be suitable and sufficient, fixed, and protected by access hatches or gates.
- Caps are to be placed on bolts and ends of tubes.
- All scaffolds erected on public areas are to be protected by either timber hoarding or secured with Heras-style fencing built according to the ISG-approved temporary works design.

External scaffolding with full-height monoflex / containment netting



All scaffold bolts projecting into walkways and staircases need to be capped



Reference / supporting documents

- LCS-04 Work at height
- LCS-06 Prevention of falling objects
- CS-30 Temporary works
- Prevention of Falling Objects Risk Assessment and Plan (available on the CMS)
- Scaffold procedures and guidance (available on the CMS)
- Scaffolding minimum standards guidance document (available on the CMS)
- Temporary works procedure (available on the CMS)

CS-17 Plant and equipment

Introduction

The management, operation and maintenance of plant and equipment on our projects is critical to ensuring the continued safety and health of those that work on our projects.

In relation to this standard, mobile plant refers to heavy construction machinery, and work equipment refers to any other equipment or apparatus used in construction.

Minimum requirements

- Contractors shall maintain an up-to-date register of all plant and equipment.
- All mobile plant and work equipment shall be maintained in good working order.
- Mobile plant and work equipment identified as defective shall be immediately quarantined until repaired.
- Operators of plant and equipment shall be able to demonstrate competency and knowledge of operational instructions, maintenance activities and emergency actions.
- Mobile plant and work equipment shall be provided with fixed or interlocking guards, wherever practical, to prevent access to dangerous parts of machinery.

Specific requirements for mobile plant

- Many items of mobile plant are of sufficient risk or belong to a specialist subject area that ISG has written specific standards and guidance to accompany them, i.e. **CS-06 Use of mobile elevating work platforms (MEWPs)**, **CS-07 Mast climbing work platforms (MCWPs)**, **CS-34 Telehandlers and rotary telehandlers** and **CS-35 Dump trucks**.
- All mobile plant shall be fitted with an amber flashing beacon, and green flashing beacon for seat belt warning.
- Mobile plant shall provide operators with a 360° field of vision from the operating position, sufficient to see an object 1m high, 1m from the machine. (This can be achieved by the use of mirrors, Fresnel lenses or cameras.)
- A mobile plant register shall be maintained, and copies of certificates held.
- Contractors shall provide details of mobile plant thorough examination and pre-use inspections prior to the mobile plant being used.
- All inspections of mobile plant (i.e. first use, daily, weekly, maintenance, and examinations) shall be completed and issued to ISG as part of the weekly contractor return.
- When out of use, keys shall be removed from items of mobile plant.
- Plant maintenance shall be carried out in a barriered-off restricted work area with a safe system of work supplied in advance and accepted by ISG.
- Bucket changing areas shall be clearly defined with barriers.
- Mobile plant shall carry an appropriate fire extinguisher.

Specific requirements for work equipment

- Work equipment shall incorporate a suitable means of isolation from all power sources, where practical.
- Contractors shall carry out noise and vibration assessments for specific equipment (e.g. handheld power tools, plant, etc).

Abrasive wheels

- Contractors shall ensure those who utilise abrasive wheels have received formal training in the mounting of abrasive wheels.
- Where angle grinders are used, blade guard and side handle shall be in place.
- The correct abrasive wheel type, size, and maximum operating speed shall be used for the specific equipment.

Cartridge tools

- Cartridge-operated tools shall only be used by competent personnel who can provide evidence of training.
- Cartridges and cartridge tools shall not be used in explosive atmospheres, and when not in use they shall be stored in a separate secure location.
- Suitable PPE shall be worn as identified on the contractor's safe system of work to mitigate the risk of eye injury.

Compressed-air equipment

- All air receivers and pressure vessels shall carry a written scheme of examination prepared by a competent person.
- Air receivers and pressure vessels, including those integrally fitted to compressors, shall be marked with their safe working pressure and a distinguishing number. They shall also be fitted with a safety valve, pressure gauge and drain cock.
- Mobile compressors shall be set up level with all guards and covers correctly fitted. Periodic checks shall be made by a competent person that lubrication, coolant, and fuel levels are adequate.
- Hoses shall be maintained in good order and are to be inspected before use. Hose whip checks shall be used on all hoses greater than 15mm diameter, or when required by risk assessment.

Electrically operated tools

- Preference shall be given to battery-operated tools. Where this is not practical, the tools shall be earthed or double insulated, and the power source restricted to 110 volts.
- Where tools are rated above 110 volts they shall be subject to further risk assessment and controls (e.g. use of electrical breakers and armoured cables).
- Portable electrical tools and battery chargers shall be inspected before use and subjected to portable appliance testing before first use and a minimum of every three months. Evidence of inspection shall be readily available.

Hand tools

- Hand tools shall be selected to suit the work, be appropriate to the task, and be maintained in a serviceable condition.
- Consideration shall be given to the location where the tools will be used (e.g. avoiding sparks and use of Atex equipment in flammable atmospheres).
- Cutting edges shall be sharp, handles free from cracks and splinters, and chisel heads and hammers shall be free of burrs or splits.

Pneumatic tools

- Couplers shall be fully locked, and a hose whip check fitted to prevent the hose whipping should a coupling fail.
- Pressure shall be released from the system before attempting to disconnect hoses.
- The compressor shall be maintained in accordance with manufacturer's guidelines.
- Compressors shall be set up level with all guards and covers correctly fitted.

Reference / supporting documents

■ LCS-02 People and plant interface ■ CS-06 Use of mobile elevating work platforms (MEWPs) ■ CS-07 Mast climbing work platforms (MCWPs) ■ CS-08 Loading and unloading vehicles ■ CS-19 Cranes and anti-climb ■ CS-20 Piling ■ CS-21 Mechanical systems ■ CS-25 Cutting areas ■ CS-29 Welding ■ CS-32 Hoists – goods and passenger ■ CS-34 Telehandlers and Rotary telehandlers ■ CS-35 Dump trucks

CS-18 Concrete and screed pumping

Introduction

Concrete pump installations and delivery systems can be extremely hazardous. Significant risks include:

- Depressurisation of high pumping pressures
- Uncontrolled movement of delivery systems
- Failure of delivery system connections
- Failure of metallic delivery lines and parts due to abrasive wear
- Uncontrolled discharge of pumped material
- Uncontrolled release of cleaning components
- Collapse / overturning of pump rigs.

Minimum requirements

- The ground shall be prepared to receive the truck mixer and pump vehicle.
- Vehicle stabiliser loading must be calculated in accordance with the **Temporary works procedure**.
- Pump vehicle stabilisers shall be fully extended, and proprietary base-pads used.
- Pump operator shall hold an appropriate CPCS / NPROS certificate, or equivalent.
- Pump operator shall have full line of sight or radios in place between pump and delivery point.
- Ensure that wash-out is effectively managed, including run-off during purging and cleaning.
- A safe system of work shall be produced and formally accepted prior to commencement of works.
- Emergency stop buttons shall be provided in accessible positions. Functionality shall be checked before use.
- Delivery hoses shall be routed to minimise impact on other operations and pedestrian routes.
- Stationary delivery lines shall be secured with proprietary fixings designed to withstand the pumping delivery forces.
- Metallic delivery lines and fittings shall be periodically checked for abrasive wear (thinning) caused by moving aggregate. Records shall be submitted to the ISG project team.
- The minimum number of flexible delivery hose lines shall be used. They shall be secured sufficiently to prevent hose lines moving and whipping uncontrollably.
- A robust exclusion zone shall be erected around the pumping operation.
- Flexible delivery hoses shall be securely connected, clamped, and secured. Where lever couplers are used, secondary retaining pin-clips shall be fitted. Threaded handle couplers are a durable alternative and have no requirement for secondary retaining clips.
- Concrete pumping operatives shall wear steel toe-cap and mid-sole wellington boots, safety helmets, light eye protection, disposable coveralls and concrete-resistant gloves.
- Clearing blockages and cleaning delivery lines can be extremely hazardous. This risk shall be addressed in contractor safe systems of work. Sponge ball and ‘pigs’ shall be used in conjunction with catch baskets. All personnel shall move away from the area until competent individuals clear the blockage.

Screed pumping

- All rotating (mixer) parts shall be guarded and with complete grilles. A pre-use inspection shall confirm the hatch and grille interlocks are effective to prevent access to moving parts.
- Flexible delivery hoses shall be securely connected, clamped, and secured with secondary retaining ring or pin fasteners.
- Whip checks shall be provided to hose couplers that have no secondary retaining device.
- Flexible delivery pipes shall be secured with suitable fixings capable of withstanding the pumping delivery forces and to minimise hoses lurching uncontrollably.
- Flexible delivery hoses shall be routed to minimise trip hazards.

PPE, including overalls, while working with pumped concrete

Reference / supporting documents

- FS-05 Personal protective equipment (PPE)
- CS-08 Loading and unloading vehicles
- CS-10 Traffic management and vulnerable road users
- CS-11 Control of substances hazardous to health (COSHH)
- CS-17 Plant and equipment
- CS-30 Temporary works
- Temporary works procedure (available on the CMS)

CS-19 Cranes and anti-climb

Introduction

All lifting operations shall be suitably planned, co-ordinated and managed. Failure of loads, cranes or critical components can lead to catastrophic accidents. In addition, persons gaining unauthorised access to cranes presents a significant risk to personal safety. Measures are required to prevent unauthorised persons gaining entry to projects or cranes.

Minimum requirements

- Over-sailing – a tower crane slewing circumference shall not encroach over private property unless permission has been legally obtained, in liaison with ISG's insurers.
- Crane bases shall:
  - Have a base design which is checked in line with the **Temporary works procedure** and specific guidance in **Temporary works guidance Note 03 – tower crane foundation and tie guidance**.
  - Be designed with bases that avoid base fixing angles and connectors being submerged by ponding water. The design shall incorporate drainage wherever practical.
  - Be subject to an inspection of crane foundation structure at the time of installation, and two weeks post installation.
  - Have an information board displayed on or near to the crane base (on the anti-climb hoarding).
  - Have lightning protection installed when forming the base, with a braided connection to the mast.
- ISG shall ensure that an assurance measurement of tower crane mast verticality shall be completed following completion of mast installation.
- Aircraft warning lights shall be fitted to all tower cranes installed.
  - Unless otherwise specified, a minimum single (lower intensity – 200 candela) aircraft warning light shall be fitted to the highest point possible, visible from all directions. Cranes that operate via generators shall have battery back-up installed for the aircraft warning lights.
- Anti-collision and zoning devices shall be fitted to tower cranes in scenarios where either:
  - Tower cranes have overlapping slewing circumferences.
  - Where slewing circumferences are within 5m.
  - Where tower cranes can approach or over-sail restricted or public areas.
- All tower crane installations shall have a crane hook-block camera system. The system shall include an in-cab monitor with a 30-day recording loop feature.
- Cranes shall not operate during the hours of darkness without safety lighting.
- Tower cranes shall have a working anemometer, which can be read from ground level.
- Audible warnings shall be utilised by slingers / signallers to warn personnel of an imminent lifting operation or approaching suspended load (i.e. air-horn or electronic whistles).
- Crane operators are considered as safety critical workers and require a medical fitness certificate.

Lifting plans and documentation

- As an absolute minimum, cranes shall have an in-date certificate of thorough examination (12-monthly). Where tower cranes may be used for the transport of persons the crane shall be thoroughly examined on a six-monthly basis.
- Tower crane lift plans shall be prepared by an experienced Appointed Person (AP) trained to NPORS / CPCS level (minimum). Completed lift plans shall be provided to ISG with no works to take place until these are approved by an AP. Agreed methods are:
  - ISG directly employed AP
  - Specialist AP services
  - ISG agency-employed AP.
- For specific lifting plans requirements, refer to the **LCS-05 Lifting operations, lifting equipment and accessories** standard.

Mobile crane operations

Anti-climb requirements (crane base security)

- Access to the crane base shall be restricted by the provision of a 3m (minimum height) solid, or anti-climb panel enclosure with splayed top complete with a lockable access door. Demountable fence panels are unsuitable.
- Access to crane bases shall have a lock that can be opened from both sides. Only authorised persons are permitted to access the tower crane.
- Materials shall not be stored adjacent to or fixed to the anti-climb structure.
- All tower crane installations shall have an anti-climb skirt, or an anti-climb panel frame fitted to the crane mast to prevent the scaling of the outside of the mast.
- Lockable access hatches to the landing – it is a mandatory requirement that the provision of a horizontal barrier and lockable trapdoor in the interior of the mast within an external anti-climbing mechanism is adopted. Consideration is to be given to the emergency arrangement to ensure that the key to the trapdoor is readily available to an authorised person in the event of an emergency. Note: The trapdoor is not to be locked during operational hours.

- Anti-climb mesh shall be added. The anti-climb mesh shall be fitted to the outside of the crane mast over a 2m high area, thus providing additional security in stopping persons climbing the outside of the crane mast. Note: It is important to ensure that there are no openings in the mesh or the cables over the outside allowing / providing climbing aids up the outside of the crane. Consideration shall also be given to situations where the mast can be accessed from the upper floors of the building.
- The crane operator's walking route shall be delineated and maintained free of obstruction and trip hazards.
- CCTV to the crane base, providing out-of-hours visuals of the crane, is to be considered within vulnerable areas (city centres / high-risk areas). This can be linked to the out-of-hours security system, where 24-hour monitoring can be provided.

Anti-climb mesh enclosure installed around crane base

Emergency rescue

- While it is the expectation that fire and rescue services will attend site in the event of an emergency, this service shall not be relied on.
- Notwithstanding any rescue arrangements made with the local fire and rescue services, contingency planning / measures shall be in place for the rescue of personnel from tower cranes. There is a risk that the casualty may be in immediate danger, or the rescue services delayed.
- Projects shall plan to ensure a sufficient rescue team is on site at all times for tower crane operations.
- All persons involved in rescue shall have specific training in the rescue equipment to be used. The rescue equipment will require thorough examination on a six-monthly basis (e.g. Gotcha).

Emergency rescue operations with Gotcha kit

Mobile cranes – specific requirements (including mobile, crawler and spider cranes)

- Where mobile cranes are engaged directly by ISG, this shall be via a contract lift arrangement.
- Irrespective of the type of mobile crane required, planning is vital to ensure the crane can arrive on site and safely carry out the lifting operation without incident.
- A competent AP shall be formally appointed to assist with planning and the preparation of the lift plan. Works are not to commence until the lift plan has been accepted by the ISG lift manager.
- A safe system of work (lifting plan, risk assessment and method statement) shall be in place and approved for mobile cranes. Key considerations that shall be detailed are:
  - Ground conditions
  - Airspace notifications and aircraft warning
  - Over-sail permissions
  - Proximity hazards
  - Exclusion zones
  - Wind speed monitoring
  - Out-of-service arrangements
  - Base assembly
  - Overhead lifting
  - Lifting accessories
  - Route of lifting and slewing.
- Ground conditions are critical and shall be managed under the **Temporary works procedure**.
  - The AP, operational team and the temporary works co-ordinator shall satisfy themselves there are no services, voids, slopes or retaining walls that may destabilise the crane while it is operating.
  - Ground load bearing details shall be provided and included within calculations. The ground load bearing conditions, including any preparation, shall be designed and the proposed design checked.
- A competent crane supervisor shall be appointed and be in attendance during all mobile crane lifting operations.
- Mobile cranes are to be less than 15 years old.
- Mobile cranes shall be thoroughly examined within the previous 12 months, or the previous six months if lifting personnel.
- Upon rigging of a mobile crane, checks shall be made by the crane supervisor to ensure that the operator has set up in accordance with the lift plan.
- Outriggers shall be deployed centrally on the crane mat, with base-plates positively attached to their respective hydraulic ram. Crane outrigger mats shall be founded in accordance with the approved design.
- All crane operators shall demonstrate the correct training and competency, specific to the crane being operated. The crane operator shall be authorised prior to operation.
- Mobile crane operators are considered as safety critical workers and require a medical fitness certificate.
- ISG and contractor shall ensure that the mobile crane work area and associated plant movements are fully segregated from other work areas by interconnected red pedestrian barriers and clear warning signage.

Reference / supporting documents

- LCS-02 People and plant interface
- LCS-05 Lifting operations, lifting equipment and accessories
- LCS-06 Prevention of falling objects
- FS-06 Safety critical medicals and fit to work
- CS-17 Plant and equipment
- CS-30 Temporary works
- Temporary works procedure (available on the CMS)

CS-20 Piling

Introduction

Piling operations are a high-risk activity. Poorly planned or non-managed piling activities present significant risk of injury.

This standard shall be read in conjunction with the **LCS-05 Lifting operations, lifting equipment and accessories** standard.

Minimum requirements

- Detailed information regarding existing services, based on the site survey, shall be held. The survey shall identify the ground conditions to the full depth of the piles, effects of noise and vibration on the local environment.
- Piling operations shall be in accordance with the **Breaking ground procedure**.
- Working platforms (piling mats) are to be designed and constructed in line with the **Temporary works procedure**.
  - The working platform plan dimensions shall take into account the pile locations, ensuring that at no time will the piling rig tracks approach within 2m of the edge of the working platform.
  - The working platform design and any access ramps will require verification and completion of a certificate.
  - The working platform will require regular inspection throughout its life to identify when the platform is degrading due to the plant operating on it, other materials contaminating it (e.g. mud, spoil) or excavations through the platform. Inspection and maintenance shall be recorded.
  - Piling mats shall achieve the correct California Bearing Ratio (CBR) to adequately support the piling rig.
- The piling rig operator, rig attendant, concrete pump operator, and general operatives shall all hold approved competency cards with the correct category and endorsements for the works they are undertaking. This shall be to the requirements of the Federation of Piling Specialists (FPS) or equivalent.
- Mobile elevating work platforms (MEWPs) shall be used for rigging and de-rigging operations. The climbing of rig masts will be by exception, authorised by the piling supervisor in accordance with the use of integrated fall arrest equipment. The use of non-permanent ladders and bosun's chairs will not be permitted.
- Piling rig work areas and associated plant movements shall be fully segregated from other work areas by interconnected red pedestrian barriers and clear warning signage.
- Any aborted piles shall have the hole filled and suitably compacted immediately to prevent the possibility of persons falling into the aborted pile hole.
- Delivery lines shall be blown / washed out at the end of each shift. Measures shall be in place to ensure that the blow-out ball, or pig, are safely captured when they exit the delivery equipment. Any slurry spill will be cleared immediately.
- Details of spoil clearance from the auger shall be included within the safe system of work.
- At least one emergency stop shall be fitted and located in an accessible position on the piling rig.
- Pile breaking / cropping – hydraulic pile breakers shall be used wherever practical. For larger pile diameters, specialist equipment shall be utilised. This shall be read in conjunction with the **CS-17 Plant and equipment** standard.
- Bespoke piling rig equipment shall be selected in the first instance, and wherever practical. Where site conditions necessitate piling equipment suspended from a crane / excavator, a Rated Capacity Indicator (RCI) is required.

Piling rig specific requirements

- Piling rigs and associated cranes shall be provided with an in-date and valid Thorough Examination Report. This includes any lifting accessories / equipment, such as winches.
- Concrete delivery hoses shall be provided with certification of testing (12-monthly requirement).
- Certification of test and inspection is required for steel concrete delivery lines and bends. This shall include evidence of regular monitoring of steel thickness and records for taking out of service / replacement
  as applicable.
- All moving and rotating parts shall be effectively guarded to prevent mechanical contact, or entanglement.
- All augers and cutters shall be continuously cleaned to prevent spoil collecting. In particular, spoil laden CFA auger strings ascending to such a height above ground level, as to cause injury from the spoil arisings becoming dislodged and falling uncontrolled from height, must be avoided.
- A mechanical means of cleaning augers shall be used.

Protection of newly constructed piles

- Measures shall be put in place to ensure that open bores and newly cast piles are protected to prevent possible slips, trips or falls (e.g. use of cover plates or grilles).
- Exposed reinforcement bars shall have protective strips or caps attached.
- Vehicle routes shall be planned for the avoidance of areas with exposed pile caps, wherever possible.

Reference / supporting documents

■ LCS-01 Excavations and avoidance of underground services and utilities ■ LCS-02 People and plant interface ■ LCS-05 Lifting operations, lifting equipment and accessories ■ CS-17 Plant and equipment ■ CS-18 Concrete and screed pumping ■ CS-30 Temporary works ■ Breaking ground procedure (available on the CMS) ■ Temporary works procedure (available on the CMS)

CS-21 Mechanical systems

Introduction

Failure of high-pressure systems can be catastrophic. Careful planning and co-ordination of works is critical to ensuring these work activities do not place persons at risk.

Minimum requirements

- All service routes shall be co-ordinated with other trades to avoid potential clashes where possible.
- All materials shall be loaded / unloaded in accordance with the **CS-08 Loading and unloading vehicles** standard and stored in accordance with the **CS-14 Housekeeping and materials storage** standard.
- Preference shall be given to fabrication of containment, ductwork and pipework at ground level.
- Cutting of containment, ductwork or pipework shall be carried out using suitable cutting equipment. Where handheld cutting equipment is used, the material shall be held with a suitable workbench / vice.
- Containment, ductwork and pipework supports, where fitted at high level and fixed underside of slabs / steelworks, shall be subject to a regime of pull testing.
- Where threaded rods are used as part of a proprietary support system, end caps are to be applied. Contractors shall cut back threaded rods as soon as practical.
- Material handling and installation of equipment into bracketry supports shall be carried out in accordance with accepted safe systems of work, outlining what equipment will be used to reduce manual handling and prevent materials from falling while being fitted into position, including partially completed runs.
- Threading and bending machines shall be positioned to allow clear access and avoid causing obstructions, with suitable warning notices displayed.
- Machines shall be placed on drip trays and the surrounding floor suitably protected.
- Guards shall be fitted to any rotating parts, and end guards installed around rotating pipe ends.
- Operators shall not wear loose clothing / loose gloves or use other materials that could become entangled with moving parts.
- Threading and bending machines shall be operated by foot switches. Power supply leads are to be routed to avoid damage and prevent trip hazards.
- Where mechanical services pass through openings on floors, risers, roofs, etc, contractors shall ensure openings are protected with suitable edge protection, covers or service collars.
- Where permanent or existing services are live within a building, warning signage shall be positioned in prominent locations.

Working adjacent to existing pressurised systems

- Existing high-pressure systems shall be identified and marked up with appropriate warning signage.
- Access routes shall be checked to ensure suitable ‘step overs’ are in place – with particular attention to plant rooms, risers and roofs.

Pressure testing

- Pressure testing shall be carried out with a safe system of work supplied in advance and accepted by ISG. The safe system of work shall fully detail:
  - Layout of pipework
  - **Pipe work pressure testing permit**
  - Lock Out Tag Out
  - Test pressure and duration
  - Anticipated loads on flanges and bends
  - Anchor blocks and thrust blocks
  - Filing and venting points
  - Testing equipment to be used
  - Supervisory staff and labour.
- Contractor inspection and test plans shall be supplied in advance and accepted by ISG prior to acceptance of the safe system of work.
- Works shall be undertaken in line with the Building Engineering Services Association (BESA) TR6 Guide to Good Practice – Site Pressure Testing of Pipework, or equivalent.
- Calibrated test gauges shall be used, and certificates provided prior to any testing works.
- Preference shall be given to the use of digital pressure test gauges providing an accurate means of identifying minor leaks.
- Times of pressure tests shall be agreed with all parties prior to testing commencing.
- Signage, barriers and exclusions zones shall be in place.
- Works on a system shall not commence without verification the pipework is not pressurised.
- Systems shall not be filled until an approved method of draining the system is agreed and hose connected to a drain.
- Testing, including filling and venting, shall be supervised by a competent person with experience of the testing methods.
- All blank flanges, bends and junctions shall be fully supported and anchored before filling operations commence. Support and anchorage calculations shall be checked in line with the **Temporary works procedure**.
- An inspection / walk down of the system shall be carried out prior to testing.
- Pressure release valves of adequate size and marked with the set pressure shall be installed on the system under test. The pressure release valves shall be inspected before use.
- Test pressure shall be brought up in increments by not more than 10% and held without dropping prior to test personnel entering the area to check for leaks; this should be repeated until the final pressure is reached. The system should not be inspected until a reasonable period after the pressure level is reached.
- Pressure testing levels shall not be exceeded.
- Pneumatic testing above 1 bar pressure and hydrostatic testing at or above 15 bar pressure shall be conducted in a controlled manner e.g. carried out when the floor area adjacent to the system under test is clear of others, exclusion zones are in place, and / or the test is completed out of normal working hours.
- When carrying out hydrostatic testing, cleaning stations shall be on standby e.g. mops, buckets, spill kits etc.
- Any high-risk equipment in close proximity e.g. electrical cabinets shall be identified, and adequate control measures implemented.
- Standing in front of blank flanges, bends or junctions shall not be permitted while filling and testing is in progress.

- Test pumps and gauges shall be located so that the operator is clear of the end of the pipeline.
- Clamps and bolts on bolted flanges shall not be altered while a system is under test.
- Pressure shall be gradually reduced when the testing is complete.
- When de-pressurising pipework, persons shall be protected with exclusion zones / signage, and ear protection to be made available where necessary.
- Copies of test certificates shall be supplied to ISG upon completion.

Reference / supporting documents

- LCS-04 Work at height
- FS-05 Personal protective equipment (PPE)
- CS-08 Loading and unloading vehicles
- CS-14 Housekeeping and materials storage
- CS-25 Cutting areas
- CS-30 Temporary works
- Permit to Work Procedure (available on the CMS)
- Pipe work pressure testing permit (available on the CMS)
- Temporary works procedure (available on the CMS)

CS-22 Gate person and traffic marshal

Introduction

A gate person is critical to manage the point of entry / gates to any project. It is important that the gate person acts in a professional manner that ensures positive interaction with stakeholders, suppliers and members of the public. Traffic marshals manage site traffic in the context of the delivery management system.

Minimum requirements

- A task-specific safe system of work shall be in place for gate person duties, communicated to the gate person, and included in the project logistics plans.
- Contractors shall ensure that a task-specific risk assessment is completed for any site personnel undertaking vehicle marshalling or banksman activities. This is to be approved prior to works commencing, and communicated to the relevant persons.
- Gate persons and traffic marshals shall be trained and competent to undertake their duties (e.g. CPCS Plant and Vehicle Marshaller A73, CLOCS Site Access Traffic Marshal, or equivalent).

Gate person dress code

- In addition to the five-point PPE minimum standards, the below dress code also applies to plant and vehicle traffic marshals / banksmen who need to present a professional image:
  - Orange hi-vis trousers and coat which conform with EN471 Class 3.
  - Orange safety helmet, fitted with a multi-safety helmet light.
  - A body-mounted camera shall be worn where there is a public interface.

Gate persons shall:

- Represent the project in a professional manner.
- Ensure the security of site at points of entry, specifically that:
  - The site is maintained in a secure condition at gates / entrances.
  - Undesirable or non-authorised individuals do not gain access to site.
  - Deliveries are permitted in line with the planned delivery schedule.
  - Vehicles entering site are safely accompanied by banksman / traffic marshal.
  - Vehicles entering / leaving site cause no / little impact to adjacent highways.
  - Strong communication between gate and office is maintained.

- Inform the project team immediately in the event of any type of incident.
- Maintain a polite, informative and helpful manner with members of the public, while retaining caution and control of the gate at all times.
- Be consistent and report any challenging situations to the project lead immediately.
- Assist the project by undertaking duties in line with the CLOCS standard where applied.
- Attend daily briefings with the project team such that deliveries are planned and monitored.
- Assist team members in ensuring that all visitors to site are properly greeted and safely directed to the site office.
- Always act in the best interests of ISG and always place the health and safety of the public and the workforce as their top priority.

Gate person attending delivery vehicle

Reference / supporting documents

- LCS-02 People and plant interface
- LCS-05 Lifting operations, lifting equipment and accessories
- CS-10 Traffic management and vulnerable road users
- CS-12 Access control
- CS-17 Plant and equipment

CS-23 Dust

Introduction

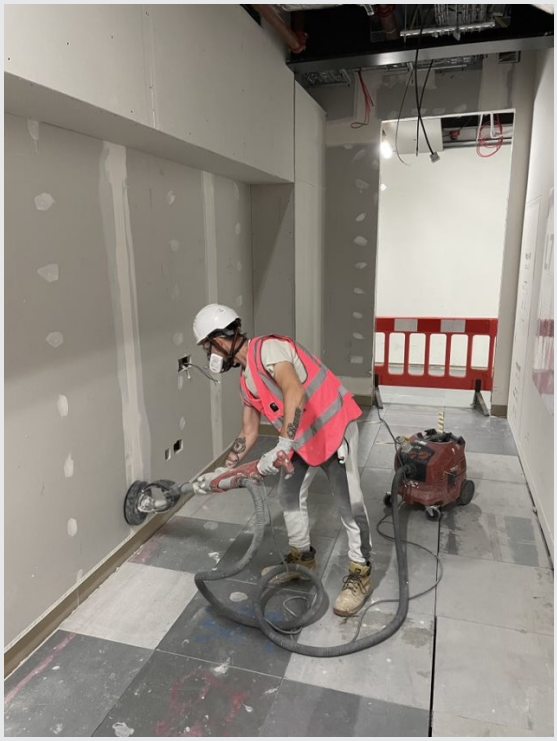
Long-term health effects from dust exposure are one of the most prevalent occupational health diseases in the construction industry. Each year, 12,000 lung disease deaths are estimated to be linked to past exposure at work. Dust arising from construction activities shall be controlled in line with this standard.

Minimum requirements

- The hazards from dust exposure shall be eliminated or reduced as low as practical by designing out these processes and activities.
- A COSHH assessment shall be produced and formally accepted by ISG prior to the commencement of any dust generating activities.
- All persons shall ensure that workforce exposure limits are never exceeded.
- The safest (lowest dust generating) method shall be selected by all contractors.
- Where practical, dust mitigation shall be achieved through the cutting of materials off site.
- Dedicated cutting areas, or areas of the site for cutting operations, shall be implemented. These areas shall be segregated from other personnel with robust interconnected barriers and clear warning signage.
- Where dust generating activities take place, cutting benches shall be provided with integrated dust extraction systems.
- Where there is a background (residual) dust exposure risk, an air-filtration system / forced-air ventilation is required e.g. Dustcube / Aircube units with a minimum standard filter of 'M' (Medium).
- The best available techniques to capture or suppress dust at source shall be implemented (i.e. dust extraction or water suppression as the minimum requirement).
- All on-tool dust extraction systems and vacuum cleaners shall be fitted with a HEPA type filter to a minimum standard of 'M' (Medium) or 'H' (High).
- Full dust extraction will be required for any mechanical sanding-down operations, including drylining and decoration contractors.
- For vacuum extraction, bagged extraction units shall be selected over non-bagged units.
- A safe system of work shall be in place for emptying any extraction units.
- Clean-up operations shall be completed via either a vacuum cleaner, scrubber type unit, or other equipment specifically designed to control dust. The filter on these units shall be a HEPA type filter to a minimum standard of 'M' (Medium) or 'H' (High).
- Respiratory protective equipment (RPE) may only be used as the last resort, or where control measures do not reduce residual dust to a safe level. RPE shall meet the requirements set out by the **FS-05 Personal protective equipment (PPE)** standard.

- Any cartridge filter masks shall meet the FFP3 standard with this clearly marked on the mask.
- Users of any tight face RPE shall be clean shaven and hold a valid face-fit testing certificate for the corresponding type of mask.
- Where this cannot be achieved, a positive pressure air-fed hood shall be utilised.
- Press-to-check type masks shall be used. Replaceable filters shall be changed in line with the manufacturer's instructions.

'M' class dust extraction in use



Clean-up operations with vacuum cleaner

Reference / supporting documents

- FS-05 Personal protective equipment (PPE)
- CS-09 Asbestos
- CS-11 Control of substances hazardous to health (COSHH)
- CS-25 Cutting areas

CS-24 Noise

Introduction

Exposure to noise at work can cause irreversible hearing damage. It is a common health problem that can be difficult to detect as the effects build up gradually over time. The noise hazard shall be effectively controlled on any construction project.

Minimum requirements

- The noise exposure hazard and control measures shall be included in all approved contractor safe systems of work.
- The hierarchy of noise risk control (i.e. eliminate or substitute any noisy activities where practical) are required to be applied.
- Processes that generate excessive noise shall be undertaken off site where possible.
- Pre-drilled holes shall be given preference over on-site drilling operations.
- The lowest practical noise generating equipment and plant shall be selected.
- Wherever practical, electric motors shall be used instead of diesel or petrol engines. Any acoustic covers, silencers and mufflers fitted to plant and equipment shall be used.
- All persons and contractors shall comply with the legal noise action levels of 80dB(A), 85dB(A) and 87dB(A).
- Control of noise exposure to others shall be included within the safe system of work.
- Noise enclosures shall be used to reduce noise levels. Where this is not practical, noise barriers or other acoustic controls shall be used.
- Where required, hearing protection zones (HPZ) shall be implemented with interconnected red pedestrian barriers and clear warning signage. Hearing protection shall be available at the access point to the HPZ. Contractors shall ensure that surrounding workers / contractors are adequately informed of the HPZ.
- Personnel using hearing protection shall be trained in the safe wearing, storage and use, in line with the manufacturer's usage instructions.
- Any defects to noise control equipment shall be reported.

Hearing protection required for loud operations

Noise enclosure / barriers used to mitigate noise exposure to other site users

Reference / supporting documents

■ FS-05 Personal protective equipment (PPE) ■ CS-17 Plant and equipment ■ CS-25 Cutting areas

CS-25 Cutting areas

Introduction

Uncontrolled cutting stations generate significant hazards to persons using the cutting stations and those working in the immediate area, this may include occupational noise exposure, hot works and ergonomic risks.

The following control measures shall be in place prior to commencing work on any cutting station or bar threading / bending area. The control measures are designed to ensure adequate segregation, reduce noise emissions, hot works risks and trailing cables, eliminate poor housekeeping and improve posture of the operator.

Minimum requirements

Metal-cutting stations

- A fully enclosed proprietary workbench system shall be used, which incorporates fire-rated sound deadening foam.
- Noise risk assessments shall be undertaken, and control measures shall be in place.
- **Hot works permit** to be displayed on the cutting station.
- Fire extinguisher to be placed on the housing.
- Adequate illumination shall be provided for the task to aid cutting.
- Barriers to be erected around the cutting area with the contractor's name displayed.
- Hearing protection zone signage shall be displayed.
- Waste bin to be stationed in the immediate vicinity of the cutting station.
- Cables shall be positioned to not create a trip hazard.

Where bespoke cutting booths cannot be used, the following shall also be implemented:

- An appropriate and sturdy bench.
- End stands and saw clamps used to secure equipment to the bench.
- Screens to contain sparks.

Timber-cutting stations

- All timber chop saws shall be fitted with vacuum extraction, in line with the **CS-23 Dust** standard (minimum ‘M’ (Medium) or ‘H’ (High) requirement).
- Cartridge filter masks shall meet the FFP3 standard with this clearly marked on the mask. Press-to-check type masks shall be used. Replaceable filters shall be changed in line with the manufacturer’s instructions.
- A proprietary or designed workbench system shall be used.
- Adequate illumination shall be provided for the task, to aid cutting.
- Barriers to be erected around the cutting area with the contractor’s name displayed.
- Waste bin to be stationed in the immediate vicinity of the cutting station.
- Cables shall be positioned to not create a trip hazard.

Example of proprietary metal-cutting station

Example of proprietary workbench system

Reference / supporting documents

■ LCS-08 Fire safety ■ FS-05 Personal protective equipment (PPE) ■ CS-11 Control of substances hazardous to health (COSHH) ■ CS-14 Housekeeping and materials storage ■ CS-17 Plant and equipment ■ CS-23 Dust ■ CS-24 Noise ■ CS-26 Hand arm vibration (HAV) ■ Hot works permit (available on the CMS)

CS-26 Hand arm vibration (HAV)

Introduction

Exposure to vibration at work can cause irreversible damage through Hand Arm Vibration Syndrome (HAVS). HAVS includes conditions such as vibration white finger, muscle weakness and permanent numbness. Vibration hazards shall be effectively controlled on any construction project.

Minimum requirements

- Contractors shall ensure that hand arm vibration risks are assessed and adequately controlled for all activities. The contractor shall assess whether any employees are likely to be exposed to vibration at or above an exposure action value (EAV), or above an exposure limit value (ELV).
- A hierarchy of control shall be implemented as the core principle of vibration control.

01 Eliminate

Vibration risks shall be designed out where practical. Consideration shall be given to alternative methods that prevent use of vibrating tools, this may include modern methods
of construction (MMC) and Design for Manufacture and Assembly (DfMA).

02 Substitute

Where risk cannot be eliminated, consideration shall be given to alternative methods to mitigate vibration (e.g. surface coatings, or jet washing instead of scabbling, or using remote-controlled demolition equipment / breakers).

03 Engineering controls

Adequate controls shall be affixed to equipment to mitigate vibration risk.

04 Administrative controls

The safe system of work shall incorporate measures such as task rotation and planning to mitigate exposure risk.

05 PPE

Shall be utilised as the last resort when planning and controlling vibration risk.

- HAVS exposure monitoring is required for any person placed at risk from vibrating equipment. Should a person be exposed above the exposure action value, or equivalent, further action is required and shall be evidenced. These controls shall include:
  - Reducing of exposure to as low as reasonably practical by implementing a programme of appropriate operational and technical measures (i.e. consider alternative work methods, different tools and / or rotating the workforce etc).
  - Health surveillance programme for relevant individuals.
  - Provision of suitable information, instruction and training with regard to HAVS.
- Persons shall not be exposed to vibration above the ELV.

Vibration risk assessment requirements

- The safe system of work shall incorporate the hierarchy of controls.
- The safe system of work shall detail the task, tool vibration magnitude, trigger time, and duration of exposure (including any exposure to intermittent vibration, or repeated shocks).
- Equipment shall be selected with the lowest practical level of vibration in their tool class.
- The safe system of work shall identify and control vibration exposure to any persons whose health is at particular risk.
- Control measures shall be detailed and implemented to minimise vibration exposure.
- For operatives using multiple vibration tools, the exposure from each tool shall be monitored to ensure no individual surpasses the ELV.
- Details of employee health surveillance shall be included.
- Contractors shall record personnel exposed to vibration, and the level of exposure. Records shall be submitted to ISG management weekly, and records held by the contractor.
- HAVS records are to be periodically checked by ISG and contractors.
- The safe system of work shall detail where vibrating equipment has the potential to affect the stability of a structure. Monitoring and control measures are to be implemented.

Reference / supporting documents

■ FS-05 Personal protective equipment (PPE) ■ CS-17 Plant and equipment ■ CS-24 Noise ■ CS-25 Cutting areas

CS-27 Manual handling

Introduction

ISG's contractors and workforce should know the risks, plan their work and use sensible control measures to protect workers from musculoskeletal disorders (MSDs).

MSDs injuries can have a serious impact on a worker's ability to perform tasks, their quality of life, and in some cases their ability to stay in work and earn a living. Many can suffer from long-term pain and discomfort.

Minimum requirements

- Manual handling shall be eliminated early in the design stage, where possible.
- Consideration shall be given to alternative products that alleviate manual handling or reducing the weight of items.
- Specific manual handling risk assessments shall be carried out by contractors for their works to ensure the task is suitably assessed considering 'TILE' (Task, Individual, Load, Environment) for activities involving manual handling. Extra consideration shall be given to activities with repetitive lifting (e.g. block laying).
- Lifting aids shall be identified for use where possible to eliminate or reduce the amount of manual handling as far as reasonably practical – forklifts, cranes, powered pallet trucks, trolleys etc.
- Contractors shall provide operatives with manual handling training when required.
- Musculoskeletal risks and control measures, including mechanical lifting aids, shall be assessed when planning waste removal from the workface.
- Contractors shall organise work to minimise the amount of handling necessary, using mechanical means where possible.
- The location and size of materials storage areas is to be planned, agreed, and allocated between ISG and contractors.
- Materials storage areas shall be planned to ensure that all materials are accessible and free of obstruction.
- Materials storage areas planning shall consider handling routes to the required workface. The distance between storage areas and work activities should be kept as short as possible in order to reduce handling risks.
- Where ramps are in use for materials movement, contractors shall use auto-braked / auto-cut-off plant / equipment to avoid loss of control, in line with the **CS-33 Storage and transport of sheet materials** and **CS-13 Access routes (including ramps and steps)** standards.
- Concrete kerbs and paving slabs shall be laid using mechanical lifting aids.
- Pipe lifters shall be used for the laying of concrete drainage pipes.
- Contractors shall chock objects that may roll, such as drums and pipes, and keep heavy articles near floor level.
- Contractors shall inspect their pallets, platforms, containers and racks regularly for damage, and prevent damage from mechanical lifting equipment, for example forklifts.
- Materials shall be stacked according to size, shape and weight. Heavier materials shall be stored on lower shelves and under lighter materials.

- Where shelving is used for storage, contractors shall keep all material within the horizontal dimensions of the shelves. Contractors should try to store all manually loaded material between knee and shoulder height.
- Contractors shall use properly constructed racks where possible and secure to a wall or floor where practical.
- Contractors shall not lean heavy stack materials against structural walls or exceed the safe loading of racks, shelves or floors.
- Materials shall never be de-stacked by throwing down from the top or pulling out from the bottom.
- If banding is damaged or materials displaced, contractors shall not stack materials on top – make stacks safe to prevent collapse.

TILE (Task, Individual, Load, Environment)

Example of power barrow to reduce manual handling while moving excessive amounts of material

Proprietary trolley used as a manual handling aid

Reference / supporting documents

- FS-07 Setting people to work
- CS-08 Loading and unloading vehicles
- CS-13 Access routes (including ramps and steps)
- CS-14 Housekeeping and materials storage
- CS-33 Storage and transport of sheet materials

CS-28 Adverse weather

Introduction

Adverse weather conditions introduce specific hazards that can impact the workplace and people's health. Adverse weather can place people at risk, and it is critical that these hazards are identified, managed and controlled.

High winds / storm conditions – high winds can significantly increase the risk of falling objects, work at height and lifting operations.

Extreme heat / summer working – working in conditions where temperatures are high can cause heat exhaustion, heat stroke, skin cancer, fatigue, dehydration, loss of concentration and potential for an increase in incidents.

Extreme cold / winter working – cold conditions create many challenges, including creating hazardous working conditions, fewer daylight hours, fatigue, loss of concentration and thermal discomfort.

Minimum requirements

- Contractors shall ensure their documented safe systems of work address the risks associated with extreme heat, cold, and works during other adverse weather conditions.
- Site logistics and traffic management plans shall allow for mitigation controls for adverse weather working. The project logistics plan shall be reviewed at regular intervals, as a minimum on a monthly basis.

High winds

High winds have the potential to cause damage and falling objects on / from site and there is a need to review and assess the risk during these periods. Activities that are susceptible to high winds include:

- Fencing or hoardings are particularly vulnerable, due to their lightweight construction and acting as a physical resistance to the wind.
- Roofs (particularly lightweight, temporary and low pitch roofs) due to wind uplift.
- Cladding (tiles, flashings, panels, etc) – wind-driven rain can cause uplift or defects.
- Walls and partitions (internal or external) in a temporary condition before permanent stability has been fixed.
- Temporary propping or edge protection can fail if not stabilised or secured correctly. This is particularly a concern for high-level buildings close to edges.
- Roof or slab work on high-level buildings, leading to loose materials.
- Lifting equipment (tower cranes, mobile cranes, excavators, hoists, etc) – loads can be severely affected.
- Scaffolding works (erecting and dismantling) – structures in a temporary state are subject to failure with high winds.

Fully consider whether all risk activities have incorporated relevant wind loading calculations at design stage, and prior to installation and works commencing.

Preparing for high winds

- Wind speeds and prevailing direction shall be regularly monitored, using a suitable calibrated anemometer or similar.
- External areas, especially roof levels, shall be reviewed in advance of forecast high winds to remove / secure any loose materials (e.g. use of containment netting).
- Materials in the process of being installed shall be secured with the permanent fixing arrangement complete with any additional support required, prior to leaving the workface.
- Doors, windows and voids shall be closed where possible on the windward side of a building, as wind uplift danger is substantially increased.
- Contractors shall establish and maintain a rigorous inspection and maintenance schedule to identify, inspect and repair damage, in vulnerable areas.
- The use of lifting equipment shall be suspended where winds are likely to exceed those deemed safe by the manufacturer's instructions or specific design.
- Work at height activities shall be reviewed and mitigated and / or rescheduled during high wind periods.
- Scaffold boards shall be securely clamped to withstand strong winds.
- The workforce should be made aware of the heightened risks and areas of concern during high winds.
- Items of temporary works shall be inspected following any event that may have impacted strength or stability, including after adverse winds. These structures shall only be brought back into use following an inspection by a competent person.

Extreme heat / summer working

Extreme heat is defined as working conditions without adequate thermal comfort due to hot air temperature. These requirements apply for all times including summer and any other time when a weather alert is issued by a national body (e.g. the Met Office).

- Personnel shall be informed of the hazards and controls for working in extreme heat / summer working, including skin damage. Personnel shall be encouraged to cover skin and wear long sleeves to protect from direct sun exposure / UV rays.
- Shaded areas shall be provided for breaktimes.
- Works shall be planned to minimise exposure to direct sunlight and in hot areas. Where practical, works should be planned to take place in shaded areas or at cooler times.
- Drinking water and receptacles shall be provided and readily available.
- Urine hydration charts shall be displayed in toilet areas to assist in the monitoring of hydration levels.
- The workforce should be made aware of the heightened risks and control measures when working in extreme heat.

Extreme cold / winter working

Extreme cold is defined as working conditions without adequate thermal comfort due to cold air temperature. These requirements apply for all times including winter and any other time when a weather alert is issued by a national body (e.g. the Met Office).

- Access routes shall be reviewed prior to commencement of works on site by a member of ISG management. Where conditions are not deemed acceptable, access routes shall be closed until action is taken to mitigate the risk.
- Adequate supply of rock salt / de-icer shall be available for access route areas.
- Lighting to access routes and roadways shall be inspected prior to commencement of works. Where lighting areas are not deemed adequate, additional lighting units shall be provided.
- Access routes shall be maintained in good condition and free from risk associated with slipping hazards and poor lighting.
- Contractors shall ensure the workforce has adequate clothing and PPE for cold weather conditions.
- Materials storage areas shall be reviewed to ensure they are not affected by the cold, wind, rain or snow.
- Lagging or trace heating shall be installed to exposed water supplies to welfare areas.
- Heaters in the welfare and drying areas shall be in good working order and effective.
- The workforce should be made aware of the heightened risks and control measures when working in extreme cold.

Reference / supporting documents

■ LCS-04 Work at height ■ LCS-05 Lifting operations, lifting equipment and accessories ■ LCS-06 Prevention of falling objects
■ FS-05 Personal protective equipment (PPE) ■ FS-07 Setting people to work ■ CS-03 Roof work ■ CS-17 Plant and equipment ■ CS-30 Temporary works

CS-29 Welding

Introduction

Welding is a fabrication process that joins materials, usually metals or thermoplastics, by using high heat to melt the parts together and allowing them to cool, causing fusion. Welding is distinct from lower temperature techniques, such as brazing and soldering, which do not melt the base metal.

Welding fumes can cause lung cancer, asthma and other health conditions. This applies whether welding is indoors or outdoors, therefore controls shall be implemented.

Minimum requirements

- Welding operations shall be eliminated by design wherever possible, however, a **Hot works permit** shall be completed in advance of the works. For brazing, or soldering of copper, the use of thermal heat mats, designed to fit around the diameter of the pipe, shall be employed where there is a risk of radiated heat transfer.
- Design, manufacture, prefabrication and assembly to negate the potential welding risk on site, shall be given preference.
- Hierarchy of risk control shall be applied – eliminate welding where possible, or substitute for less harmful, apply engineering controls, administrative controls, and PPE as the last resort.
- No welding works are to be undertaken unless a documented safe system of work has been accepted and agreed.
- The person undertaking the welding operations shall have suitable experience in the use of the type of the equipment and nature of the work being undertaken.
- Exposure to any welding fume released shall be adequately controlled using engineering controls (typically local exhaust ventilation (LEV)). This includes other hot metal works e.g. brazing, soldering, hot cutting, grinding, tack welding.
- Engineering controls shall be correctly used, suitably maintained and are subject to thorough examination and test, where required.
- Engineering controls alone cannot control exposure, so adequate and suitable respiratory protective equipment (RPE) shall be provided to control risk from any residual fumes.
- A **Hot works permit** shall be completed before works commence.
- Welding operations shall be suitably screened, with appropriate warning signage erected excluding unauthorised entry into the area.
- Gas bottles shall be stored in designated areas with clear warning signage.
- Gas bottles shall be transported on suitable trolleys and secured. Gas bottles shall be removed from the building at the end of each shift / working day and secured in ventilated proprietary cages.
- Anti-flashback devices shall be fitted to cylinders.
- Daily inspections of welding hoses shall be completed. Hoses must be in effective working condition – only crimped connections to hoses shall be permitted.

- Welding equipment shall include an earth lead direct to machine within 2m of work location.
- Fire-fighting equipment shall be in place, in line with the **Hot works permit** requirements.
- Where welding operations are undertaken at height, e.g. risers and perimeters of buildings, robust measures shall be implemented to prevent sparks / droplets falling.

Reference / supporting documents

■ LCS-08 Fire safety ■ FS-05 Personal protective equipment (PPE) ■ CS-17 Plant and equipment ■ CS-25 Cutting areas ■ Hot works permit (available on the CMS) ■ Health and Safety Executive (HSE) WL2 – Welding in confined / limited / restricted spaces
■ Health and Safety Executive (HSE) WL3 – Welding fume control

CS-30 Temporary works

Introduction

Temporary works shall be managed in accordance with the **Temporary works procedure**. Temporary works can be described as providing an 'engineered solution' that is used to support or protect either an existing structure or the permanent works during construction, or to support an item of plant or equipment, or the vertical sides or side slopes of an excavation during construction operations on site or to provide access. It is used to control stability, strength, deflection, fatigue, geotechnical effects and hydraulic effects within defined limits. This could include, but is not limited to, the design, construction and management of:

- Scaffolding
- Formwork / falsework
- Working platforms
- Site hoarding
- Propping
- Excavations
- Construction stage stability of the permanent and temporary works
- Loading the existing structure with construction activities / plant / materials
- Construction sequencing
- Temporary site accommodation

Minimum requirements

Bid stage

The initial planning for the project developed by the bid team shall review:

- The requirement for and concept of all temporary works.
- The programming of any specific / significant temporary works.

- The classification and categorisation of any identified temporary works is to be completed at this stage. Examples of items of temporary works and their associated engineering and implementation risks are shown below:

Heras fencing

2.4m-high hoarding

Mobile crane working platform

External safety screen

Preconstruction stage

The following are the protocols that shall be followed once the project has been secured:

- A handover meeting between the bid and construction teams shall be completed.
- The Principal Contractor Temporary Works Co-ordinator (PCTWC) for the project shall be appointed using the **Appointment of PCTWC** letter, following a review of the **PCTWC Competency Assessment** form in relation to the complexity of the project.
- Agree and obtain deputy designated individual (DDI) / project director's approval for any contractor's systems / procedures to be used, if replacing (or additional to) ISG's systems / procedures.
- Prepare the **Temporary Works Register**, transferring the risk classifications and categories onto it.
- Prepare Section A (Design Brief) of the **Temporary Works Control Sheet** for those elements of temporary works design.
- Complete Section B (Design and Design Check) of the **Temporary Works Control Sheet**.

Construction stage

The following are the processes that shall be followed once the project is in the construction phase:

- Finalise Section A and B of the **Temporary Works Control Sheet**.
- Update and maintain the **Temporary Works Register**.
- Complete the inspections to the agreed regime and record on the **Temporary works inspection sheets**.
- Complete Section C (**Construction Checks** / **Permit to Load**) of the **Temporary Works Control Sheet**.
- A temporary structure shall not be loaded or brought into operation until a **Permit to Load** has been issued.
- Carry out regular **Temporary Works Audits** in accordance with ISG procedures.

Contractors

Contractors may be appointed by ISG to manage their own temporary works under their own procedures with their own temporary works co-ordinator (TWC) and temporary works supervisor (TWS). This shall follow a formal appointment process and approval. Under these circumstances, PCTWCs are required to ensure the contractor is implementing their procedures in accordance with ISG's requirements for the project.

Where ISG intends to appoint a contractor to manage their own temporary works, the project director shall authorise this by ensuring the checks detailed on the **Subcontractor Temporary Works Checklist** have been completed to their satisfaction and the formal **Subcontractor Temporary Works Conditions** has been signed and included in the subcontract order for the works.

All contractors carrying out temporary works on an ISG site shall provide a competent TWC and / or TWS to manage their temporary works and liaise with the PCTWC.

The below duties shall be completed by a contractor TWC, as per ISG's **temporary works procedures**:

- Liaise with the PCTWC on the content of the contractor's temporary works register.
- Provide the PCTWC with the design and design check information for their own temporary works.
- Ensure checks, inspections and tests are carried out, as required.
- Provide relevant information to the PCTWC for inclusion in the health and safety file.
- Provide the design brief to the PCTWC and confirm no adverse effect on temporary works in the vicinity.
- Ensure the PCTWC has approved company procedures to be used (if working to own proce-dures).
- Provide the PCTWC with the appointment and acceptance of the position of TWC.
- Liaise with the PCTWC on control limitations on site (authority to authorise permits).

Reference / supporting documents

- LCS-01 Excavations and avoidance of underground services and utilities
- CS-02 Protection of voids, risers, shafts and lift shaft edge protection
- CS-07 Mast climbing work platforms (MCWPs)
- CS-15 Demolition
- CS-16 Scaffolding
- CS-19 Cranes and anti-climb
- CS-20 Piling
- CS-32 Hoists – goods and passenger
- Appointment of PCTWC (available on the CMS)
- PCTWC Competency Assessment form (available on the CMS)
- Subcontractor Temporary Works Checklist (available on the CMS)
- Subcontractor Temporary Works Conditions (available on the CMS)
- Temporary Works Audit (available on the CMS)
- Temporary Works Control Sheet (available on the CMS)
- Temporary works inspection sheet (available on the CMS)
- Temporary works procedure (available on the CMS)
- Temporary works procedures and guidance (available on the CMS)
- Temporary Works Register (available on the CMS)
- BS 5975: 2019, Clause 5.1.1.1, or equivalent

CS-31 Fuel storage and refuelling

Introduction

Unplanned storage of fuel or refuelling activities presents significant risks of exposure to hazardous substances or negative environmental impact. It is critical that these activities are safely completed, with the risk of fuels entering drains and watercourses mitigated.

This standard includes oil covers, petrol, diesel, biofuels, kerosene, synthetic oils, biodegradable oils and liquid bitumen-based products (e.g. waterproofing or damp-proofing products). Storage containers include cans, oil drums, fixed tanks, intermediate bulk containers (IBCs) and mobile bowsers.

Minimum requirements

- Fuel storage and refuelling areas shall be in a suitable area to mitigate environmental risks. Fuel storage areas shall be positioned:
  - 50m distance from any spring, well or borehole, or 10m from any watercourse, ditch or drainage channel.
  - In areas where fuel cannot enter drains, loose fitting manhole covers, or soak into unmade ground where it could pollute groundwater.
  - Away from areas where a spill could run over hard ground to enter a watercourse or soak into unmade ground where it could pollute groundwater.
  - Away from roof areas (as spilt fuel can run down guttering, which is connected to surface water systems).
  - Away from areas that are at risk of flooding.
  - In areas determined by the project's **fire risk assessment**.
  - Away from highly trafficked areas (i.e. not adjacent to haul roads or plant areas).
- Fuel shall be stored in bespoke containers with adequate structural integrity to not burst or leak.
- Fuel in containers shall be stored away from vehicular traffic routes to avoid damage from collision. If this is not feasible, barriers or bollards should be placed around the container.
- A suitable spill response station shall be in proximity to all fuel storage areas. This shall contain a suitably sized spill kit, a means of disposing of spill waste, and **Spill response procedure**.
- An **Environmental emergency response plan** shall be developed for areas where fuel is stored.

Equipment	Secondary containment / bund	Other requirements
Storage drums 	Shall be placed on a bund which provides containment capacity equal to 110% capacity of the drum.	A drip tray, with at least 25% capacity of the drum, shall be provided for refuelling activities and general drips. Where practical, drums should not be stored in the open where drip trays can fill with rainwater and overflow.
Intermediate bulk containers (IBCs) 	A singular IBC shall be provided with a secondary containment or bund equal to 110% capacity of the IBC. Where multiple IBCs are stored, the secondary containment or bund shall have capacity equal to either 25% of the combined capacity of all containers, or 110% capacity of the largest container, whichever is greater.	Where IBCs are hydraulically linked, they shall be treated as a single container with a secondary containment or bund equal to 110% capacity of the IBC.
Mobile bowsers 	Any mobile bowser with a capacity >=200 litres shall have a secondary containment system with a capacity of 110% of the storage capacity of the bowser. The containment system shall not be fitted with a drainage point.	Any tap, or valve through which oil can leave the bowser, shall have a lock, which shall be locked shut when the bowser is not in use. Any flexible delivery hose connected to the bowser shall be capable of being locked within the bowser's secondary containment system when not in use. Any hand pump used to dispense oil shall be physically locked shut when the bowser is not in use.
Generators	Any generator with an integral fuel tank capacity >=200 litres shall have a secondary containment system with a capacity of 110% of the storage capacity of the fuel tank. The containment system shall not be fitted with a drainage point.	Pipework delivering oil from a tank to a generator is particularly vulnerable. Secondary containment for the entire system (storage tank and generator) shall be provided wherever practical.
	All containers shall be stored in secondary containment when not in use and on plant nappies / pads when in use. After use, containers shall be returned to a secondary containment area.	Oil for small plant / equipment shall be stored in proprietary containers that are fit for purpose.

Refuelling

- Deliveries of any fuels / oils shall be supervised. Any drums, cans, IBCs etc shall be placed within a secondary containment area immediately following delivery. Fuels / oils shall never be left in unsecure or high-risk locations (e.g. within 10m of drains or watercourses).
- Designated refuelling areas shall be used; ad hoc or temporary fuelling facilities are not permitted.
- Refuelling shall be carried out in a designated area with an impermeable surface sited away from watercourses, ditches or drains.
- Where practical, plant shall incorporate an integrated refuelling pump and hose, with auto shut-off.
- Proprietary fuel dispensing hoses, with automatic cut-off trigger nozzles, shall be utilised (i.e. so they cannot be propped open).
- Refuelling operations shall always be supervised and never left unattended.
- A plant nappy, or equivalent pad, shall be placed under plant or equipment during refuelling.

Examples of spill response stations with instructions clearly displayed

Reference / supporting documents

- FS-05 Personal protective equipment (PPE)
- CS-11 Control of substances hazardous to health (COSHH)
- CS-14 Housekeeping and materials storage
- CS-17 Plant and equipment
- Environmental emergency response plan (available on the CMS)
- Project fire plan and fire risk assessment (available on the CMS)
- Spill response procedure (available on the CMS)

CS-32 Hoists – goods and passenger

Introduction

Hoists are a type of construction elevating equipment used to provide vertical access for persons or materials. Hoists present several risks which include work at height, falling objects, electrical, and crushing injuries.

Within this standard, differentiation is made between passenger and goods hoists. A passenger hoist includes a full enclosure to the hoist platform including all sides and a roof. A goods hoist is not fully enclosed and is only permitted for the transport of materials.

Minimum requirements

- All hoists shall comply with BS 7212 – Code of practice for the safe use of construction hoists, or equivalent, and be constructed in accordance with the **Temporary works procedure**.
- Hoists shall be selected based on the maximum size and weight of material that will be transported.
- Hoists shall only be utilised following a certificate of thorough examination issued on installation, following joint inspection with an ISG manager. Thorough examinations are required on a minimum six-monthly basis.
- An audible travel alarm shall be installed and audible whenever the hoist is in motion.
- Hoists shall incorporate mechanically interlocked landing gates.
- Signage (i.e. duties board) shall be provided to all hoists to clearly display the machine's safe working load (SWL), machine ID number, operating wind speed, and project emergency rescue arrangements.
- Hoists shall never be used above the manufacturer's stated safe wind speed. Wind speeds shall be monitored with the use of a suitable calibrated anemometer (wind speed meter).
- Fixed guards shall be installed around the mast section at ground level to prevent contact with any moving components.
- All operatives using passenger hoists shall be able to demonstrate competency in their safe use and operation (IPAF, NPORS, CPCS, or equivalent). In addition, operators shall hold recorded familiarisation training from the hoist provider.
- Hoist operators shall complete daily pre-use and weekly detailed inspections. Any defects are to be immediately reported to ISG.
- Hoists shall be installed with an isolation switch with key. Keys are to be removed after each shift and surrendered to ISG.
- The power supply to any hoist shall be protected from damage or unauthorised access.
- Ramp access to hoists shall be in line with the **CS-13 Access routes (including ramps and steps)** standard.
- Protection shall be in place on each lift opening to eliminate any gaps which may pose a potential risk of falling objects.
- A suitable exclusion zone shall be erected around the base of all hoists.
- A project-specific emergency rescue plan shall be developed to include rescue from hoists. The emergency rescue plan shall be communicated to all individuals who are likely to be affected.

Passenger enclosed type hoist with base segregation

Example of signage to clearly display authorised hoist operators

Reference / supporting documents

■ LCS-04 Work at height ■ LCS-06 Prevention of falling objects ■ CS-13 Access routes (including ramps and steps)
■ CS-17 Plant and equipment ■ CS-30 Temporary works ■ Temporary works procedure (available on the CMS)
■ Work at height guidance (available on the CMS)

CS-33 Storage and transport of sheet materials

Introduction

Sheet materials (including plasterboard, cement board and glazing) are utilised throughout the construction process. There are significant hazards associated with the stacking, storage and handling of sheet materials. Board trolleys are employed as a simple and effective method of transporting boards to reduce manual handling. However, incidents have occurred where the boards or trolley have toppled, striking and trapping a person's leg resulting in serious injury.

Minimum requirements

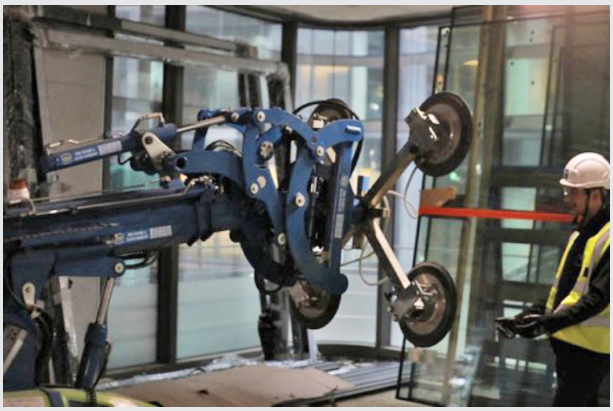
- This standard shall be read in conjunction with the **CS-14 Housekeeping and materials storage** standard.
- Sheeted materials shall not be stored or left leaning unsecured at any time (i.e. plasterboard, plywood, mdf, glazing, frames and doors). Preference shall be given at all times to sheet materials being laid flat onto pallets or stillages.
- Sheet materials stored at a high level, exposed or in windy areas shall be secured.
- If there is insufficient space, sheet materials can be stored vertically – they shall be secured to a suitable anchor point. They shall not be stored in areas likely to cause congestion or on escape routes.
- 'A frames' and stillages being used to transport or store materials shall be designed, manufactured or CE marked. The safe working load (SWL) shall also be displayed.
- Where 'A frames' and stillages are fitted with wheels, brakes are to be fitted and applied.
- Fragile materials, such as glass, shall be adequately protected and banded, or strapped when being stored or transported.
- Where multiple panes of glass are stored on a single stillage, each pane shall be individually secured with banding.
- Door frames / linings and doors shall also be strapped when being stored or transported around site.
- Sheet material trolleys shall be utilised for transporting sheet materials to reduce manual handling, with preference given to flat trolleys. Sheet material trolleys shall:
  - Incorporate a restraint mechanism for vertical / leaning sheet materials.
  - Clearly identify and display the number and type of material that can be safely loaded onto a trolley.
  - Consider use of an auto-lock wheel braking mechanism.
  - Where ramps are in use for materials movement, preference shall be given to auto-braked / auto-cut-off plant / equipment to avoid loss of control (including trolleys and pallet trucks).
- Access routes for sheet material trolley movements shall be assessed for size and suitability, free from obstruction, and ramps to be of sufficient strength and gradient.
- The contractor's safe system of work shall clearly identify the number and type of material that can be safely loaded onto a board trolley.
- Where roof sheets are stored on the steel frame prior to installation, they shall cross three bays and be secured with ratchet strap, or equivalent.

Board trolley with auto-lock break and restraining mechanism

Rotating board trolley to provide safe storage and working bench

Glazing secured to stillage with individual banding

Example of glazing lifting aid



Reference / supporting documents

■ LCS-06 Prevention of falling objects ■ FS-02 Welfare and site set-up ■ CS-11 Control of substances hazardous to health (COSHH)
■ CS-14 Housekeeping and materials storage ■ CS-27 Manual handling

CS-34 Telehandlers and Rotary telehandlers

Introduction

Telehandlers and Rotary telehandlers are complex items of machinery that are widely used for moving materials and goods around projects. Incidents involving such machinery can cause costly damage to the plant itself, buildings, fittings and goods, as well as the potential for major injury.

This standard applies to telehandlers and Rotary telehandlers greater than 10m.

Minimum requirements

Working environment

- A survey of the site is to be undertaken to ensure the telehandler being selected is the most appropriate machine for the task, and the environment in which the plant is being used.
- Telehandlers and Rotary telehandlers shall only be permitted to operate on designated traffic routes when traversing the site.
- The approach angle (maximum angle of ramped areas) shall not exceed that stated in the manufacturer's instructions.
- Telehandlers shall not travel with the boom arm extended or at height.
- Exclusion zones are to be erected at the base of loading bays.

Equipment

- An amber flashing beacon shall be installed, and activated whenever the machine is in motion.
- A green flashing seat belt beacon shall be fitted to all telehandlers and Rotary telehandlers. The green flashing beacon provides an indication that the seat belt is fastened.
- A reversing camera shall be fitted to all telehandlers and Rotary telehandlers.
- A dash camera shall be installed on forklift trucks operated on the public highway.
- Forkeze system, or equivalent, shall be installed on all telehandlers and Rotary telehandlers.
- All telehandlers and Rotary telehandlers shall be fitted with a telemetric system. ISG is to be given access to the information contained upon request.
- The machine is to be operated and maintained in accordance with the manufacturer's instructions.
- The cab shall be maintained in a clean and tidy condition, free of obstacles under the foot pedals.
- Telehandler tyres shall be inflated to the tyre pressure detailed in the manufacturer's instructions and form part of the daily checks.

Operator

- The operator shall be fit to work, both physically and mentally.
- The operator shall hold documented familiarisation training on the make and model and possess the relevant category of CPCS, or equivalent.
- The operator shall have suitable experience of the type of forklift / telehandler and nature of the work being undertaken.
- The operator has the final decision on any lift.

Lifting operations

- A specific risk assessment shall be in place for each telehandler and Rotary telehandler. A detailed lift plan is required for any loads lifted below the forks or where an attachment is fitted to the machine (e.g. fork-mounted crane hook, jib hooks, winch, etc).
- Loads shall be fully inspected and secured prior to lifting and transporting.
- Loading and unloading vehicles shall be undertaken in accordance with the **Site Logistics and Traffic Management Plan, CS-08 Loading and unloading vehicles** standard, and the **LCS-05 Lifting operations, lifting equipment and accessories** standard.
- Only auto-locking tipping skips will be permitted.

Reference / supporting documents

■ LCS-02 People and plant interface ■ LCS-04 Work at height ■ LCS-05 Lifting operations, lifting equipment and accessories ■ CS-08 Loading and unloading vehicles ■ CS-10 Traffic management and vulnerable road users ■ Site Logistics and Traffic Management Plan (available on the CMS) ■ Safe use of telehandlers in construction (available on the CMS)

CS-35 Dump trucks

Introduction

The operation of dumper truck vehicles on site presents a significant safety hazard. Significant risks include collisions between plant and pedestrians, overturning of machines and loading / unloading activities, and require careful planning and control.

This standard applies to forward-, side- and rear-tipping dumper vehicles and dump trucks.

Minimum requirements

- Wheeled one-tonne dump truck vehicles are not permitted.
- All dump truck vehicles greater than six tonnes shall have an enclosed cabin.
- A 360° field of vision shall be provided from the operating position, sufficient to eliminate blind spots from the machine. This can be achieved by the use of mirrors, Fresnel lenses or cameras.
- Contractors shall provide details of mobile plant thorough examination and pre-use inspections prior to any dump truck brought into use.
- All inspections of dump trucks (i.e. first use, daily, weekly, maintenance, and examinations) shall be completed and issued to ISG as part of the weekly contractor return.
- Operators of plant and equipment shall be able to demonstrate competency and knowledge of operational instructions, maintenance activities and emergency actions. The minimum training requirement is CPCS, or equivalent.
- Dump trucks shall only be used on designated routes with clear segregation between pedestrians and plant, in accordance with the **LCS-02 People and plant interface** standard.
- Seat belts shall be worn at all times when in operation.
- When not attended, keys shall be removed from the dump truck. Operators shall use a key lanyard to ensure the key remains with the operator.
- Dump trucks shall not be driven with the skip raised. Operators are to retract the skip before travelling.
- No passengers are allowed on any dump truck vehicle.
- Dump truck tyres shall be inflated to the tyre pressure detailed in the manufacturer's instructions and form part of the daily checks.

Forward- and side-tipping dump trucks

- Dump trucks shall be provided with:
  - Operational amber flashing beacon
  - Operational green flashing beacon for seat belt warning
  - Roll-over protection systems (ROPS)
  - Secure engine covers and fuel tank filler cap
  - Reversing proximity alarm, audible at 10m
  - Where towing, a proprietary tow-hitch and pin shall be utilised
  - A suitably sized spill kit
  - Appropriate fire extinguisher.
- Suitability of dump truck use on inclines shall be subject to a site-specific risk assessment to ensure stability of the machine. The approach angle (maximum angle of ramped areas) shall not exceed that stated in the manufacturer's instructions.
- Operators shall dismount any non-enclosed dump trucks while being loaded.
- A means of preventing the vehicle from moving forward while tipping shall be in place (e.g. stop blocks).

Articulated dump trucks

- Material condition shall be considered before loading, and the load capacity reduced where there is a risk of material binding.
- Dump trucks shall never be overloaded – loads shall be levelled by excavator operator prior to departure.
- A site-specific safe system of work for the provision and use of dump trucks on stockpiles shall be in place. The approach angle (maximum angle of ramped areas) shall not exceed that stated in the manufacturer's instructions.
- Dedicated vehicle routes shall be in place for dumper trucks, taking into account passing bays. Where there are single-route lanes, the loaded vehicle has priority.

Example of dump truck with enclosed cabin

Reference / supporting documents

■ LCS-02 People and plant interface ■ CS-08 Loading and unloading vehicles ■ CS-17 Plant and equipment

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