

Risk Control Guide

HEALTH & SAFETY ON CONSTRUCTION SITES

Introduction and Scope

This Risk Control Guide provides general health and safety information and guidance on some of the common risk exposures in the construction industry. There are a diverse range of exposures within the construction sector and the hazards covered in this document are not intended to be exhaustive, rather intended to raise awareness and offer sources of good guidance and risk information.

The construction industry remains a hazardous place to work. The sector employs 7% of the UK workforce and within 2018/2019, 2.0 million days were lost and there were 30 fatalities and 7 fatalities of members of the public.

Health & Safety Executive (HSE) Statistics – October 2019. Of the 30 fatalities (for 2018 to 2019) 49% were falls from height, 14% trapped/collapse, 11% struck by vehicle, 10% struck by an object and 5% contact with electricity.

79,000 construction workers are suffering with ill health; 62% musculoskeletal, 21% stress/anxiety and depression and other of 17%.

The HSE issued 1,609 Prohibition notices in the 12 month period and 1,316 Improvement Notices. This equates to 60% of the total raised in all industries in the UK for the period. There were 158 “successful” prosecutions in court for offences.

Statistics via www.hse.gov.uk/statistics/industry/construction.

This Guide is based on United Kingdom regulation and practice. References are from UK sources.

Main Causes of Ill Health and Injury in the Construction Sector

Falls from Height

Falls from working at height remain the biggest cause of accidents and accounted for 49% of fatalities in 2018/2019 in the UK construction sector. The Work at Height Regulations came into force in 2005 to reduce the number of deaths and injuries from falls and the UK Health and Safety Executive (HSE) have developed a Work at Height Access Equipment Information Toolkit (WAIT).

Work at Height is defined as – “a place of work above or below ground level where a person can be injured if they fell from that place”. Access and egress to a place of work can be Work at Height”.

Further information and guidance is available from:

<http://www.hse.gov.uk/pubns/HSG150- Health & Safety in Construction>

<http://www.hse.gov.uk/work-at-height/wait/wait-tool.htm - WAIT Toolkit>

[http://www.hse.gov.uk/pubns - Health & Safety in Roof Work HS \(G\) 33. ISBN 9780717665273. Purchase or download and print a free copy.](http://www.hse.gov.uk/pubns - Health & Safety in Roof Work HS (G) 33. ISBN 9780717665273. Purchase or download and print a free copy.)

<http://www.hse.gov.uk/pubns - Working at Height – a Brief Guide 2014. ISBN 9780717664900. Purchase or download and print a free copy.>

Slips, Trips and Falls (STF's)

It is important to keep a construction site clear of trip hazards with good housekeeping, waste management and materials controls. Resources such as cleaning equipment and suitable waste receptacles should be provided, and all waste containers and skips should be emptied regularly. Care must be taken to avoid creating excessive dust when cleaning work areas, and dust suppression measures such as damping down dusty materials and waste, should always be considered.

Housekeeping should be audited as part of the planned site inspection schedule which should include constant visual monitoring by all employees, daily inspections of work areas by relevant supervisors, and planned inspections of the whole site e.g. on a weekly basis. A record should be kept of all such inspections.

Further information and guidance is available from:

<http://www.hse.gov.uk/construction/campaigns/fallstrips/booklet.pdf - Watch your step in the construction industry.>

<http://www.hse.gov.uk/construction/safetytopics/falls.htm - Construction Slips, Trips & Falls – reducing STFs on construction projects.>

Excavations

Most construction projects will involve excavation works of some form for foundations, sewers and drainage or other necessary earth removal. They may vary in depth, but are always considered potentially high risk activities. Excavations can be affected by diverse factors such as rainfall, weather (hot and cold), adjoining structures, ground conditions and vibration or other external loading factors. All excavations should be adequately protected against collapse.

Risks associated with buried cables and underground services present an electrical, fire or explosion hazard and must be suitably assessed and managed.

Visual inspections of the excavation and any support structure or edge protection should be carried out daily, and before entering. Formal recorded inspections should be carried out by a suitably qualified and experienced competent person at least every 7 days, following any alterations, or when any conditions increasing the risk of collapse may have occurred (i.e. heavy rainfall).

Some excavations may also be classed as confined spaces and therefore will need additional precautions. All work involving excavations should be closely supervised and controlled by an appropriate permit to work. Entry to excavations should be kept to an absolute minimum and restricted to specifically trained and authorised personnel only.

Further information and guidance is available from:

<http://www.hse.gov.uk/pubns/cis64.pdf> - Excavation Safety

<http://www.hse.gov.uk/construction/safetytopics/excavations.htm> - Structural stability during excavations

<http://www.hse.gov.uk/pubns/priced/hsg47.pdf> - Avoiding Danger from Underground Services

<http://www.citb.co.uk/GE700companion> - supporting publication for the CITB Site Managers Safety Training scheme (SMSTS). In particular booklet/section D – section 7 High Risk Activities – excavations and checklists GD 11-13.

<http://www.hse.gov.uk/pubns> - Safe work in confined spaces (Regulations 1997)

[http://www.hse.gov.uk/pubns/HSG150- Health & Safety in Construction](http://www.hse.gov.uk/pubns/HSG150-Health&SafetyinConstruction)

Struck by Vehicles

In the period 2018-2019 there were 3 fatalities in construction in the UK, where someone was struck by a moving vehicle and a further 5 killed due to being trapped by something collapsing, overturning or out of control. The majority of these deaths could have been avoided by effective planning, segregation of pedestrians, control of mobile plant operations, inspection and maintenance of the plant, and thorough training assessment and briefing of site personnel.

Further information and guidance is available from:

<http://www.hse.gov.uk/pubns/priced/hsg144.pdf> - Safe Use of Vehicles on Construction Sites

<http://www.hse.gov.uk/pubns/> CIS52 – Safe Use of Site Dumpers

<http://www.hse.gov.uk/pubns/indg199> - Workplace Transport Safety

<http://www.citb.co.uk/GE700companion> - supporting publication for the CITB Site Managers Safety Training scheme (SMSTS). In particular booklet/section C – section 5 and 6.

Construction (Design and Management)

The main regulations with regard to managing health and safety in construction are the Construction (Design and Management) Regulations 2015. These regulations specify the duties of:

- Commercial Clients
- Domestic Clients
- Designers
- Principal Designers
- Principal Contractors
- Contractors
- Workers

Further information and guidance is available from:

<http://www.hse.gov.uk/construction/cdm/2015/index.htm>

<http://www.hse.gov.uk/construction/pubns/books/153.htm> - Managing Health & Safety in Construction – guidance on legal requirements (Sept 2019).

<http://www.citb.co.uk/GE700companion> - supporting publication for the CITB Site Managers Safety Training scheme (SMSTS). In particular booklets/sections A Legal & Management (A03) and C General Safety.

Fire Safety on Construction Sites

Each year there are hundreds of fires on construction sites, endangering lives and damaging property. Good fire safety practice is essential to prevent fires from starting and minimising the impact of those fires that do occur. The UK HSE provides a comprehensive guide to construction site fire safety.

Additionally the Joint Code of Practice is published by the Fire Protection Association, administered under the RISC Authority Scheme in conjunction with UK Insurers and the construction insurance industries to provide detailed guidance and a framework for construction site fire safety assessment and control. The Joint Code of Practice provides guidance in relation to emergency procedures, fire protection, temporary buildings and accommodation, arson, security, fire extinguishers, storage of flammables and stored materials, hot work, utilities, waste, plant and machinery, smoking, high-rise and large timber framed buildings.

Key issues associated with construction site fire safety include:

Fire Safety Management

All fire safety and fire prevention arrangements together with details of fire hazards that could not be eliminated should be documented within a Fire Safety Management plan.

Suitable individuals should be formerly appointed and trained in specified fire safety roles.

Timber Framed Buildings

Fire hazards should be carefully managed and in the UK timber frame buildings should be constructed by a contractor registered with the Structural Timber Association Society (STA).

Hot Work

Hot work (including welding, cutting and grinding generating heat and sparks) is a major cause of fire on construction sites. Where possible hot work should be avoided, i.e. replaced with alternative cold work options. Where hot work cannot be avoided, this should be carried out under strict procedures and supervision incorporating comprehensive hot work permits, controls and fire-watch periods. Hot work should cease at least one hour before site works finishing and site closure.

Arson

Construction sites are particularly vulnerable to arson attack. Suitable physical security precautions, guarding and arrangements to eliminate or reduce susceptible combustible materials will significantly reduce the risk. Waste should be effectively managed and removed from site as soon as practicable.

Waste Management/ Housekeeping (including storage of flammable liquids and gases)

Good housekeeping and waste management will reduce the amount of combustible materials stored on site which are susceptible to fire from accidental or malicious ignition. Similarly superior storage arrangements for hazardous materials such as flammable liquids and gases will improve construction site fire safety. The above should be supported by regular inspections and audits. Suitable storage arrangements must be made for liquids on site with consideration for bunding, refer to RSA's Hazardous Materials Risk Control Guide (RCG016).

Smoking

Another major cause of fire on construction sites is illicit smoking. Ideally this should be prohibited throughout all construction sites. Where smoking cannot be eliminated, designated smoking areas may be acceptable provided that they are very carefully controlled and managed – see Fire Prevention on Construction Sites 9th Edition 2015 (JCOP) section 21.

Temporary Covering Materials and Installations (including gas / electrics/ heating etc.)

A common feature of construction sites are temporary coverings used to protect finished surfaces, fixtures and fittings that are susceptible to abrasion or similar damage. These should be non-combustible or fire retardant (LPS 1207 rated). Similar considerations should be applied to scaffolding netting and sheeting.

Temporary buildings and utility supplies should be sited and arranged to minimise fire hazards. For example combustible temporary-cabins should be located a safe distance from the building under construction and readily accessible emergency shut-off valves should be provided for flammable gas supplies. See JCOP section 13.

Fire Protection and Emergency Planning (fire fighting equipment)

Suitable provisions should be made for fire risk assessment, evacuation, fire alarms, fire escape signage and lighting, fire detection, fire-drills and escape routes and portable fire fighting equipment. Consideration should be made to changes during all stages of the build and for complex construction projects suitable liaison should take place with the local Fire Brigade. Competent persons should be appointed under the CDM Regulations 2015 to manage and oversee this.

Plant and Vehicles

Fire hazards associated with plant and vehicles on construction sites, include flammable fuel, hot exhaust pipes and other hot engine surfaces. Suitable management of this equipment and fuel storage is therefore essential.

http://www.hse.gov.uk/construction/safety_topics/mobile_plant.htm – mobile plant and vehicle health and safety.
http://www.hse.gov.uk/construction/safety_topics/mewps.htm – mobile elevated work platforms health and safety.

Sources of Guidance and Information

There are numerous freely available leaflets and booklets on construction site fire safety available from the HSE website; <http://www.hse.gov.co.uk>

Any aspect of Health & Safety guidance and information can be accessed using the website “search” function. These include:

[http://www.hse.gov.uk/pubns/HSG150- Health & Safety in Construction](http://www.hse.gov.uk/pubns/HSG150-Health%20&%20Safety%20in%20Construction)
<http://www.hse.gov.uk/pubns/priced/hsg168.pdf> - Fire Safety in Construction

A copy of the Fire Prevention on Construction Sites - Joint Code of Practice (JCoP) can be purchased from the RISC Authority: <http://www.thefpa.co.uk/shop/>

The Construction Industry Training Board (CITB) website is www.citb.co.uk. The comprehensive guidance set of booklets GE700 covers all aspects of Health & Safety on construction sites.

CITB has comprehensive and up to date construction site health & safety guidance and welfare information.

European Guidelines for Fire Prevention on Construction Sites are available from: <http://cfpa-e.eu/cfpa-e-guidelines/guidelines-fire-protection-form/>

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