

A Guide to Fire Safety on Construction Sites

By Paul Henson, sales & marketing director at Ramtech Electronics

All responsible organisations place the safety and protection of their workforce above all else. When it comes to construction sites, because of the presence of flammable materials, hot work practices and an ever changing nature, you need a fire alarm system that is effective, reliable and compliant with the appropriate legislation. The UK's construction industry is covered by a number of laws, guidelines and codes of practice, including:

- The Regulatory Reform (Fire Safety) Order (2005)
- The Construction (Design and Management) Regulations
- HSE Fire Safety Guidelines for Construction Sites (HSG168)
- The Fire Protection Association Joint Code of Practice
- BS5839-1 – Fire detection and fire alarm systems for buildings.
- The Structural Timber Association's 16 Steps to Timber Frame Construction

All of these set out fire safety requirements in relation to their particular focus, and each specifies that an appropriate fire alarm system must be used. These guidelines form a comprehensive set of best practice indicators for the use and installation of fire safety systems in the construction industry.

The basics: complying with EN 54

In addition, the Construction Products Regulation (CPR), which came into force in 2013, says that fire alarm products sold in the EU must be tested and independently certified against Harmonised European standards. In the case of fire detection and fire alarm products, that standard is EN 54.

In terms of ensuring that the fire detection and alarm products that you choose comply, it must be certified to the parts (there are 31 in total) of EN54 which detail the particular engineering, manufacturing and testing requirements for each different type of component or product within the system. For example, Part Eleven deals with the technical requirements for manual call points while Part Three deals with those for sounders.

Check the CE marking

Generally speaking a product must be marked with the CE mark for it to be sold in Europe. The CE mark is a declaration made by the manufacturer that the product complies with all appropriate European Directives on the date that the product is sold.

For some products the manufacturer can self-declare that the product complies, but in the case of the CPR and EN 54 for fire detection and alarm products they must be independently tested to the appropriate standard by a recognized test house.

EN 54 specifies an extremely robust set of tests for each type of unit which may form part of a fire detection and alarm system. These tests must be undertaken in a fully-approved nominated testing house.

The tests are designed to ensure that fire alarm and detection products will perform safely under all conditions which the product can be reasonably expected to experience, so the testing phase is exhaustive and includes:

- Physical stress testing
- Testing against extremes of temperature, humidity, water etc
- Manufacturing testing – this includes a mandatory annual assessment to ensure the manufacturing process is up to scratch.

Ask your supplier

Fire safety law is a large and complex area. However, when it comes to your fire alarm and detection system compliance, there are really only a couple of simple things to bear in mind – when it comes to ensuring that a supplier is offering a fully compliant fire alarm system you simply need to ask for a Declaration of Performance for each type of unit within the system and always check the CE mark on the product.

By doing this you will ensure the system you use is properly tested and certified as compliant with the most recent and stringent legislation and standards. Common sense suggests that your construction site and its staff must be protected by a suitable fire alarm system. EN54 is the appropriate standard to use to test fire detection and alarm system components. Its use is mandatory in completed buildings, so logically it's appropriate to use it for the higher risk environment of a construction site.

£200k Fine After Employee Struck by 7.5 Tonne Vehicle

Employers have been warned about the importance of ensuring that pedestrian routes are clearly marked and physically separated from vehicle routes, following the prosecution of national recycling firm SITA UK Limited, after an incident in which an employee was struck by a 7.5 tonne telehandler.

Preston Crown Court heard that the company failed to provide adequate segregation between pedestrians and moving vehicles at a waste transfer station in Darwen, Lancashire.

As an employee walked across an outside plastics hand sorting area, he passed behind a stationary telehandler. The telehandler began to reverse and struck the worker who was knocked to the ground and then run over by the rear wheel of the vehicle. His resulting injuries caused him to be hospitalised for two months.

The Health and Safety Executive (HSE) prosecuting told the Court the company had identified the risks but failed to put in place suitable controls to stop people being hit by vehicles.

SITA UK Limited of Grenfell Road, Maidenhead, Berkshire, pleaded guilty to breaching Section 2 (1) of the Health and Safety at Work Act 1974 and was fined £200,000 with £11,998 costs.

HSE inspector Stuart Kitchingman said after the hearing: "Employers need to look carefully at their workplaces regularly to make sure that pedestrian routes are clearly marked and physically separated from vehicle routes wherever possible.

"The employee could have easily been killed and still has severe mobility problems as a result of the accident. He is unlikely to be able to work in the near future."

HSE Cautions On Card Use After Newsnight Exposé

HSE has responded to a joint BBC London and Newsnight investigation, which has called into question the flagship scheme for certifying builders.

Aired last night, the investigation revealed that a string of test centres had been rigging health and safety exams, throwing into question the competence of workers and potentially undermining the Construction Skills Certification Scheme, which demonstrates skills and grasp of health and safety.

Seen as a benchmark, the CSCS cards were launched by the industry in 1995 and nine of the UK's top 10 biggest construction companies demand them before workers can enter a site.

The investigation revealed widespread, organised cheating, allowing untrained builders on to construction sites. It also revealed that a number of test centres are offering guaranteed passes for cash, enabling workers lacking English to obtain qualifications.

Responding to the BBC programme, a HSE spokesperson said that H&S legislation (CDM 2015) requires that contractors must not appoint or employ workers unless they have or are in the process of obtaining the necessary skills, knowledge, training and experience to carry out the tasks in a way that secures their own and others' safety and health.

"Card schemes in the construction industry can be used by contractors to help assess some elements of competency, such as specific training, qualification and basic health and safety awareness," the spokesperson said. "No card provides complete evidence of competence and additional enquiries and/or supervision are normally needed. Cards alone cannot be relied upon as a measure of competence and should not be used as a 'passport' onto a construction site."

HSE adds that there is no legal requirement to possess a card and the regulator does not administer or have any remit for card schemes.

The health and safety watchdog told SHP that HSE inspectors target small construction sites (20 or fewer workers on site) and the refurbishment sector for proactive visits as this is where the injury incidence is highest and management control tends to be weakest.

"The purpose of inspection is to sample the management of common health and safety risks such as exposure to silica dust and work at height, by examining planning, the provision of plant, equipment, and protective equipment, and training and instruction," the spokesperson said. "Enforcement action is taken where duty holders fail to manage risks in relation to any of these areas."

Working at height – a lesson from Bahrain

By David Towson, RRC International

A colleague in Bahrain related this story to me:

"In the summer this year I developed a habit of walking to the nearby coffee shop to have my morning coffee after checking my emails. "The coffee shop is situated in the very busy financial district in the heart of the capital. One morning as I walked down the road trying to avoid the crazy road traffic I noticed from a distance that the coffee shop area was very busy with many policemen around, flashing vehicle lights, red tape isolating the area.

"I turned round trying to avoid getting involved just in case it involved public violence or other related security incidents. But curiosity took me back as I managed to walk to the other side of the building and enter the coffee shop only to be shocked by the scene of a man having fallen to his death three metres in front of the entrance to the shop.

"Apparently he had fallen from the cradle as he was cleaning the building glass windows of the 30 floor building when the wire snapped at one end of the cradle sending him down on his head to die."

This is a salutary lesson about not only the dangers of working at height but also about equipment maintenance. It is made the more real to me as I myself have visited this coffee shop many times.

Risk assessment for work at height issues is in principle relatively straightforward and easy. This is largely because the risks of work at height in most common scenarios are well known. The choices available to you for managing those risks are also mostly well-known too. But where people really need the help is in making the right choices of access equipment in a given situation.

In the absence of specific legal direction, real companies have to weigh up the competing demands of time, cost, resources, space requirements (proximity of other buildings) etc against the benefits in terms of marginal increase in safety. Individual home owners are even more aware of this – they don't generally keep a handy mobile access tower or MEWP as a second vehicle in the garden (ah, now "drive your MEWP to work day" would be an idea).

So, in practice you are left with the following basic strategies for eliminating or controlling work at height risks:

Building Design – The UK even has a code of practice covering building design for this exact purpose (BS 8560) – to encourage designers (i.e. architects) to take work at height access requirements into account from the very beginning and, as far as possible, eliminate the need for it. There is a companion code (BS 8454) which covers training for work at height.

Example: one designer was considering using water-based exterior paint high up on a building but decided on balance to go for solvent based because it was far more durable and so would require far less frequent maintenance access at height.

Hierarchical Approach – this is the familiar avoid work at height (if possible), prevent falls, minimise the distance of the fall mantra. Partly this is enabled by the previous point about building design, but these are also the choices you have to make with an existing building (where you have to live with the design or retro-fit). In this regard the HSE's Work At Height Access Equipment Information Tool (WAIT)

does sterling work raising your game. The tool takes account of a range of important factors – height where you are working, duration of work, how often the access equipment has to be moved, whether there is restricted access, type of work (heavy vs light) and whether the access equipment needs to be freestanding or not. You are then left with a range of informed choices.

Note however that you often need to use a combination of methods and have an eye for the overall risk. Don't end up reducing the specific risk of work at height but then increasing it in some other area through poor choices of control strategy (erecting some forms of protection is not without risk either).

Good old managing the way you work needs to be factored into all of this. For example, that the effects of wind are more pronounced at higher altitudes and when carrying large sheet materials (as anyone who has been on a high protein diet will know...). The old standbys of housekeeping/waste management, maintaining/inspecting equipment and trained play their part. Finally, be prepared for emergencies – rescue from heights is not as easy as from the ground.

At the very least it's acutely embarrassing after the relief of being caught by fall arrest equipment to face the realisation of "Now what do I do?" You'll just never hear the last of it. Building sites can be so cruel...

The Asbestos Crisis: Why Britain Needs an Eradication Law

A cross-party group of MPs have called for the eradication of all the remaining asbestos in Britain's workplaces and public buildings.

A report by the all-party parliamentary group on occupational safety and health calls for regulations requiring the safe phased and planned removal of all the remaining asbestos in Britain.

The parliamentary group found asbestos is still a serious threat. This year, according to official figures, 5,000 people in Britain are likely to die prematurely as a result of asbestos exposure. This is around three times the number of road accident deaths.

Simple regulations for managing asbestos in the workplace, however good, will never protect workers from risk. So long as asbestos is found in any place where someone could be exposed there will be a danger. The group point out that the only way to eradicate mesothelioma in Britain is by removing asbestos. That will not be easy and there is a need for a realistic timetable, but work towards that should start now, they say.

In the report, the group calls for:

- all commercial, public, and rented domestic premises should have to conduct, and register with the HSE, a survey done by a registered consultant which indicates whether asbestos containing material is present, and, if so, where it is and in what condition, to be completed no later than 2022
- where asbestos is identified in any premises, all refurbishment, repair or remedial work done in the vicinity of the asbestos containing material should include the removal of the asbestos. Where no such work takes place, or is planned within the foreseeable future, the dutyholder must develop and implement a plan for the removal of all asbestos which ensures that removal is completed as soon as is reasonably practical but certainly no later than 2035. In the case of public buildings and educational establishments, such as schools, this should be done by 2028
- the HSE, local authorities and other enforcing agencies must develop a programme of workplace inspections to verify that all asbestos containing material identified is properly marked and managed, and that asbestos eradication plans are in place and include, as part of the plan, an acceptable timeframe for the eradication. Resources should be made available to the enforcing agencies to ensure that they can ensure that all workplaces and public places are complying with the regulation relating to management and removal, and that disposal is being done responsibly and safely
- before any house sale is completed, a survey should be done which includes a survey of the presence of asbestos. Any asbestos containing material should be labelled. Information on the presence of asbestos should be given to any contractor working on the house.

Ian Lavery, chair of the all-party group said “There is far too much complacency about the asbestos which we can still find in hundreds of thousands of workplaces as well as a majority of schools where children face exposure to this killer dust. We believe that the Government needs to start now on developing a programme to ensure that asbestos is safely removed from every workplace and public place so that we can end, once and for all this dreadful legacy which has killed so many people, and will continue to kill until asbestos is eradicated.”

Contractor’s Neglect of Safety Leads to £16,000 in Fines

A specialist piling contractor has been fined after it was found to be operating a powerful rig without a safety guard around the rotating auger.

Sevenoaks Magistrates’ Court heard how Health and Safety Executive (HSE) inspector Melvyn Stancliffe made an inspection of a site in Maidstone, Kent, in December 2014 and witnessed the piling rig in operation without a safety guard.

HSE had previously visited three sites where the same company, Southern Piling Limited, had been carrying out work and had raised concerns about the guarding standards on each occasion. After this latest visit, HSE was told that the machine had been in use for at least two-and-a-half weeks, without the guard.

Southern Piling Limited, of The Pagets, Newick, Lewes, East Sussex, was fined a total of £16,000 and ordered to pay nearly £5,000 in costs after pleading guilty to breaches of Regulation 11(1)(a) of PUWER 1998 and Regulation 13(2) of the Construction (Design and Management) Regulations 2007.

Speaking after the hearing, inspector Stancliffe said:

“There was simply no excuse for the way the machine was being used. It was in the middle of the site and there was nothing to prevent the guard from being fitted.

“I dread to think, even at low speed, what might have happened had someone inadvertently fallen on to the unguarded auger. This is incredibly powerful machinery, capable of causing life-changing or even fatal injuries.

“There has been industry guidance and HSE guidance on the guarding of piling and drilling machines for some time.”

For more information about machinery safety visit www.hse.gov.uk/toolbox/machinery/safety.htm

Construction Safety Solutions Ltd

Introduction: The information provided here can help you keep up to date with the latest legislation, changes in working practices, HSE strategies and give examples of where some companies or individuals got it wrong.

We would welcome the opportunity to demonstrate our capabilities and work with you on your future construction projects, if you would like to discuss projects or our service provision in more detail please contact us directly and we will be happy to help.