Construction Fire Safety: Responsibility and Competence Matrix

The purpose of the matrix is to identify and outline the roles and the responsibilities of those involved in fire prevention on construction projects. This will include those that have statutory duties and external fire safety professionals, who have a role in fire prevention during the design, pre-construction and the construction phase. The tables in this document set out the minimum knowledge needed for each role and have been produced to support the construction industry in defining the Skills, Knowledge, Training and Experience needed by each of the duty holders' roles. The tables enable the user to help identify areas where gaps in competence exists and where improvement is required. The tables can be used in good faith; however, it is difficult to define every situation where there might be a fire risk. The tables give the user a structured framework to base their decisions on, or opportunity to seek further clarity. The user of the tables must understand the basic fire safety requirements for both a construction site and a completed building and understand the impact of their activities on these; for example, fire stopping, compartmentation, and escape routes.

All duty holders need to have an understanding of the factors that contribute to construction fire risk and the safeguards available for reducing them. Duty holders also need to have knowledge of guidance and legislation which governs fire prevention on construction projects. To support this, the tables signpost you the information relevant to each of the duty holders and specific roles in fire management. By using the links in the left-hand column of the table, it will take you to the legislation/guidance where you will be able to research those roles.

Responsibility of Duty Holders in Line with Current Legislation and Guidance.	Client	Principal Designer	Designer	Principal Contractor	Fire Risk Assessor / Advisor	Responsible Person*	Contractor	Fire Safety Coordinator	Fire Marshal / Fire Warden	Worker
The Regulatory Reform (Fire Safety) Order 2005(FSO), Fire Scotland Act 2005(FSA), & The Fire Safety Regulations (Northern Ireland) 2010	Yes	N/A	N/A	Yes	Yes	Yes	N/A	N/A*	N/A	N/A
CDM 2015	Yes	Yes	Yes	Yes	N/A*	N/A*	Yes	N/A*	N/A*	Yes
HSG168	Yes	Yes	Yes	Yes	N/A*	Yes	Yes	Yes	Yes	Yes
JCoP 9th Edition	Yes	Yes	Yes	Yes	N/A*	Yes	Yes	N/A*	Yes	N/A

N/A* Not a specific role within CDM 2015 but must have a good knowledge and understanding of the of the legislation and guidance.
N/A No specific responsibilities to their role but a level of understanding of the of the legislation and guidance will be benefit the design and construction phase.
Responsible Person* The Responsible Person role is a duty required within FSO in England & Wales. In Scotland and Northern Ireland this duty falls upon the employer, landlord or person in control, if a building is in refurbishment.

Considerations for all Duty Holders:

Construction Clients have the perfect opportunity to set the tone of the project. Clients must provide information at the pre-construction phase of any existing fire arrangements (e.g. existing fire strategy, fire risk assessment, emergency procedures in an existing building, the clients pre-construction information and any known fire hazards regarding their site (e.g. location of fuel storage, chemical contamination of land or nearby properties).

Principal Designers, Designers, Principal Contractors and Contractors all need to have not only knowledge of the requirements for fire safety under Building Regulations but also an effective understanding of the legislation and related guidance for managing fire risks during construction, so that they can be designed out and/or appropriate measures put in place to control and mitigate the risks on site. All roles must co-ordinate and co-operate so the risk of injury to any person from fire or explosion is properly managed.

In some cases, a higher fire risk may be present due to the type of structure, for example, a high rise or timber frame; or due to the prevailing site circumstances of the construction, for example, the presence of more workers, more combustible materials on-site, or the work carried out on occupied places. Duty holders should have sufficient experience to recognise when such circumstances are likely to arise and plan for this during the pre-construction phase and then implement appropriate precautions during the build. When such high risks are involved duty holders should have access to professional fire safety specialists, who have the Skills, Knowledge, Training and Experience to identify and control fire risks during construction. Such expertise can be in-house or third-party. It is not necessary for such specialists to always be a member of the in-house team, but it is important that they are genuinely available in 'real time' whenever needed. The need for access to specialist expertise will vary from organisation to organisation depending on their activities, the scope of works or level of responsibility in the project team.

When considering and managing fire risks during construction it is essential that the Principles of Prevention are implemented throughout the design and construction phase by all the relevant duty holders. The principles which can be applied to minimising fire risks during construction are in the following hierarchy:

1. Avoiding the risks (e.g. designing out process fire risks or adopting construction methods that avoid fire risks);
2. Evaluating the risks which cannot be avoided (e.g. using the appropriate category of timber frame with fire mitigation measures);
3. Reducing the risks at source (e.g. minimising flammable and combustible materials and processes with the potential to cause fire);
4. Adapting to technical progress (e.g. using cold processes and thermal imaging equipment where hot works remain);
5. Replacing the dangerous by the non-dangerous or less dangerous;
6. Developing a coherent overall fire prevention policy which covers technology, organisation of work and the influence of factors relating to the working environment;
7. Giving collective protective measures priority over individual protective measures (e.g. connected alarms that sound in all areas of the site);
8. Giving appropriate instructions to employees about both process risks and general fire precautions in the event of a fire.

Baseline Competencies Required for Duty Holders

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Client

- Ensure suitable arrangements for fire risks during the project to include the appointment of a Principal Designer and Principal Contractor that has the relevant Skills, Knowledge, Training and Experience to prepare and implement suitable pre-construction and construction phase fire safety plans.
- Ensure they have access to competent advice, either in house or from an external source, to discharge their duties.

Principal Designer

- Have an effective understanding of the Client duties under CDM so that they can ensure the Client is aware of their responsibilities during the pre-construction and construction phases of the project, including where technical advice might be needed (e.g. fire risk assessments for on and off-site risks), and the information the client should provide about fire hazards or existing precautions.
- Have the relevant Skills, Knowledge, Training and Experience required, including the organisational resource to plan, manage and monitor the pre-construction design phase, which may continue during the pre-construction phase, including the identification of fire risks and the application of the principles of prevention to these.
- Understand client and contractor needs for information during pre-construction phase regarding fire risk and any specified fire mitigation.
- Have knowledge and understanding of the mechanism for fire ignition and spread and measures to prevent and mitigate these.
- Should be familiar with the general fire precautions for the fire management on construction sites, including ensuring adequate means of escape.
- Be able to co-ordinate the design process and ensure that fire risks arising from design are addressed by all designers so far as is reasonably practicable.
- Co-ordinate with the principal contractor where needed to incorporate suitable general fire precautions required for the construction phase.
- Have an awareness of the relevant legislation and guidance including: CDM 2015, FSO 2005, FSA 2005, FSR 2010, HSG168, JCoP 9th Edition and relevant Building Regulations.
- Understand the needs of local fire and rescue service.

Designer

- Have the relevant Skills, Knowledge, Training and Experience, or organisational resource to address relevant fire risks arising from their design and decisions.
- Have knowledge and understanding of the mechanisms for fire ignition and spread and measures to prevent and mitigate these and be able to apply these to their design (this should include the risks to those both on site, and those around adjacent buildings).
- Have an awareness of the relevant legislation and guidance including: CDM 2015, FSO 2005, FSA 2005, FSR 2010, HSG168, JCoP 9th Edition and relevant Building Regulations.
- Designers should be able to determine the stages at which the fire safety provisions to be present in the final building/structure are implemented (or removed in the case of refurbishment/demolition), or compensated for until they are implemented, to eliminate or reduce these risks so far as is reasonably practicable.

Principal Contractor

- Have the relevant Skills, Knowledge, Training, Experience required, including the organisational resource to identify, manage and co-ordinate construction site fire risks controls.
- Ensure they have access to competent advice, either in house or from an external source, to discharge their duties.
- Be fully familiar with requirements around fire management on construction sites, including the sequence of work to be followed, site induction and the shift working patterns.
- Know and understand the planning and monitoring of fire information during the construction phase.
- Know and understand the mechanisms for fire ignition and spread, and prevention controls during construction.
- Be able to recognise process fire risks, in particular hot works, and know how to avoid and reduce these risks, including permit to work systems and fire watches.
- Be able to identify and provide suitable general fire precautions and evacuations for the construction phase including means of escape, fire detection, alarm and firefighting.
- Have an awareness of the relevant legislation and guidance including: CDM 2015, FSO 2005, FSA 2005, FSR 2010, HSG168, JCoP 9th Edition and relevant Building Regulations; this includes where the principal contractor might become the responsible person.

Fire Risk Assessor / Advisor

A competent fire risk assessor must;

- Have the relevant Skills, Knowledge, Training, Experience required, including the organisational resource to identify, manage and co-ordinate construction site fire risks controls.
- Appreciate generally the concept of risk assessment as it applies to fire.
- Understand the terms “fire hazard” and “fire risk” and appreciate the relationship between the two.

- Within the fire risk assessment, be able to justify a subjective opinion on differing levels of fire risk for the purposes of making comparisons in premises where the fire risk assessment is being carried out.

To enable the fire risk assessor to carry out the above, the fire risk assessor should;

- Be aware of the broad range of methodologies of fire risk assessments available.
- Be able to select and apply an appropriate methodology of fire risk assessment in respect of the premises to which the fire risk assessment relates.
- Be able to identify fire hazards (both common and process) and the risks associated with those hazards.
- Be able to apply an understanding of fire hazard and fire risk in the premises in context, to make an informed judgement on the appropriate level of fire precautions in the premises where the fire risk assessment is being carried out.
- Be able to express fire risk for the client in such a manner as to provide at least, a broad comparison of the fire risk at different premises within a single estate of properties.

In addition, where the fire risk assessment is being produced as part of the construction planning, the fire risk assessor should:

- Understand different types of hot work processes that may be used during the construction phase
- Understand the use of highly flammable and flammable materials and substances that may be present during construction activities
- Be aware of the combustibility of materials used in the construction process and the likely quantities of these materials
- Understand who may be affected by any fire on the construction site

The fire risk assessor should be able to;

- Understand and apply the appropriate principles of prevention.
- Identify and have an understanding of the different types of hazard. Evaluate the risk and consider the appropriate method of managing the risk.
- To enable the fire risk assessor to carry out the above, the fire risk assessor should;
- Understand the term "so far as reasonably practicable" (SFARP).
- Understand how SFARP should be applied proportionately to the risk in the premises. Understand that removal of the hazard should be the first step in fire prevention. Understand if the hazard cannot be removed the next step is to reduce the risk. Understand that if the risk cannot be reduced to an acceptable level then appropriate protective measures will need to be implemented.
- Understand when the fire risk assessment needs to reviewed and revised.
- Understand the need to maintain the measures undertaken above, especially when changes are made to the use, structure or layout of the premises

Responsible Person (England & Wales) – Employer, Person in Control, Landlord (Scotland & Northern Ireland)

- Have the relevant Skills, Knowledge, Training and Experience required to identify, manage and coordinate construction site fire risks controls.
- Be fully familiar with requirements around fire management on construction sites including the building fire strategy, construction stage fire risk assessment, fire safety plan including emergency arrangements.
- Understand and be able to apply their duties under The Regulatory Reform (Fire Safety) Order 2005, Fire Scotland Act 2005 & The Fire Safety Regulations (Northern Ireland) 2010 including providing information to the fire and rescue service about changes to the building, and providing means of escape, fire detection and alarm.
- Understand that fire risks will change during the construction phase and be able to identify changes to general fire precautions arrangements already in place. As a client, they may be informed of these by the Principal designer.
- Have an awareness of the relevant legislation and guidance including: CDM 2015, FSO 2005, FSA 2005, FSR 2010, HSG168, JCoP 9th Edition and relevant Building Regulations.

Contractor

- Have the relevant Skills, Knowledge, Training and Experience required, or organisational resource to identify, manage and coordinate fire risks applicable to the scope of works and their activities.
- Have an understanding of general fire hazards (sources of ignition, fuel and oxygen) during construction, the sequence of work to be followed, and be fully familiar with requirements around fire management on construction sites.
- Have the knowledge and understanding in the planning and monitoring of fire risks in relation to their work.
- Have the knowledge and understanding of the mechanisms for fire ignition, spread and prevention controls during construction.
- Have an awareness of the relevant legislation and guidance including: CDM 2015, FSO 2005, FSA 2005, FSR 2010, HSG168, JCoP 9th Edition and relevant Building Regulations.
- Be able to identify where their back-office support team (Estimators, Designers, Quantity Surveyors) make decisions that impact on design and ensure they have appropriate knowledge to recognise fire hazard and risks.
- Make use of recognised industry training standards such as The Build UK Training Standard and Renewable Energy Association's Training Standard.

Fire Safety Co-ordinator

- Have the relevant Skills, Knowledge, Training and Experience required to identify, manage and coordinate fire risks applicable to their work activities.
- Be fully familiar with requirements around fire assessment and management on construction sites.
- Knowledge and understanding in the planning and monitoring of fire risks.
- Knowledge and understanding of the mechanism for fire spread and prevention controls during construction.
- Have an awareness of the relevant legislation and guidance including: CDM 2015, FSO 2005, FSA 2005, FSR 2010, HSG168, JCoP 9th Edition and relevant Building Regulations.

Examples of tasks that could be carried out by the fire safety co-ordinator include:

- Promoting a fire safe work environment;
- Ensuring general housekeeping is in good order and waste controlled;
- The safe storage of flammable liquids;
- Smoking and hot works is controlled on-site;
- Serviced and signed fire extinguishers available;
- Fire Plan is implemented and communicated at inductions and briefings;
- Where required permit-to-work systems are Implemented and controlled;
- Ensuring any area specified in a hot work permit must is subjected to a fire watch:

Fire Marshal / Fire Warden

Be trained and have the relevant Skills, Knowledge, Training and Experience to ensure that:

- General house-keeping is in good order and waste controlled;
- The safe storage of flammable liquids;
- Smoking and hot works is controlled on-site;
- Serviced and signed fire extinguishers available;
- Fire Plan is implemented and communicated at inductions and briefings;
- Where required permit-to-work systems are Implemented and controlled;
- Any area specified in a hot work permit must be subject to fire watch arrangements;

Worker

Have the Skills, Knowledge, Training and Experience required to understand and comply with fire safety measures in construction and for the finished building relevant to their role, including;

- Understanding the fire triangle;
- Site emergency procedures and escape routes;
- Selection of correct fire extinguisher;
- Understanding and awareness of fire risks specific to their trade/role;
- Knowing when to raise concerns and to whom;
- Liaising with the Fire Marshal/Fire Warden;
- Knowledge and understanding key significant risks relevant to their work;
- Knowledge and understanding of permit to work procedures.