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CDM 2015 Questions and Answers

A practical approach to design, safety and wellbeing

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The principal designer is expected to advise the client on the time and resources needed to effectively discharge their responsibilities in respect of health and safety on the project, as a key duty is to assist the client in the preparation of the pre-construction information, which should include preparation and planning time as this is extremely critical to managing projects safely.

Is there any recognised qualification and set of competencies that the principal designer must have?

No. However, designers must obviously be competent to do their job and have suitable experience and expertise.

The client has to ensure that the principal designer complies with their duties under CDM Regulations 9, 11 and 12, and so the client should look for evidence that the designer will be able to comply with those duties before appointing them.

A principal designer is described as the designer in control of the pre-construction phase appointed under CDM Regulation 5(1)(a) to perform the functions in CDM Regulation 11.

A designer is described in the CDM Regulations as

> any person (including a client, contractor or other person referred to in these Regulations) who in the course or furtherance of a business—
>
> (*a*) prepares or modifies a design; or
> (*b*) arranges for, or instructs, any person under their control to do so,
>
> relating to a structure or to a product or mechanical or electrical system intended for a particular structure, and a person is deemed to prepare a design where a design is prepared by a person under their control.

A formal qualification in respect of health and safety would be helpful but is not essential when appointing a principal designer. They must, however, have design qualifications appropriate for the designs they are undertaking.

Can a client appoint himself as principal designer?

Yes, provided they can demonstrate that they have the competency and resources to undertake the function.

The client must be familiar with the requirements of CDM Regulation 11, as these lay down the duties that are applicable to the principal designer.

The client must be able to demonstrate knowledge of the construction process, design function, and health and safety, including fire safety, and be fully conversant with construction practices and so on.

A client that is a company may appoint an employee as the principal designer under the CDM Regulations (e.g. a facilities manager or a project manager). They must have the resources, including time, to do the job and must not be placed in conflicting situations that are detrimental to the health and safety of the project.

The client should ensure that the principal designer is sent copies of the site meeting minutes and issued instructions to *read* them and to take whatever appropriate action is needed to ensure that they are fully up to speed with the project.

What fee should be paid for the services of a principal designer?

Fees can be either on a percentage of project or contract costs or can be a 'fixed fee' for the project, and may be included in the general design fees.

If an independent appointment is made to work alongside the design team, then fees could be a percentage of project costs, varying from 0.25% up to 3%, depending on project values.

Sometimes a one-off fixed fee and a percentage is charged.

A fixed fee should be based on an hourly or daily rate and the anticipated number of hours/days needed to complete the statutory duties placed on the principal designer.

The client should have a clear brief of what they want the principal designer to do. The client's requirements should be based on the CDM Regulations (i.e. the duties placed on the principal designer). If the client requires *other* services (e.g. site safety audits), make sure that this is specified as additional services and indicate whether fees are to be included in the percentage or fixed fee or to be invoiced separately on a time-charged basis.

It is easy for a client to pay a lot of money and receive poor value when appointing a principal designer. The position should be beneficial to the client and their design team and be a source of advice and information on health and safety issues.

The client should ask the principal designer the following questions in order to obtain an indication of how much time they propose to devote to the project

- How do you intend to gather information regarding the project?
- Will you be carrying out an initial site visit?
- How will you coordinate the designer's responsibilities under the CDM Regulations?
- How do you propose to check design risk assessments or other documentation?
- How long will it take you to prepare the pre-construction information document?
- How do you propose to communicate with the principal contractor during the construction phase to ensure that design issues, including temporary works, are coordinated?
- How often do you intend to visit the construction site, and for what purpose?
- How do you propose to coordinate the mechanical and electrical designers and contractors?
- How will you gather information for the health and safety file, and how long will it take you to prepare the health and safety file?
- How will you communicate your advice to me regarding the adequacy of management arrangements for the project?

If the majority of the construction health and safety plan has been agreed before the commencement of the construction works, there will be little need to change substantial parts of it. Details on site management, emergency procedures and welfare facilities may not change during the construction phase if they have been well thought through at the beginning.

If the construction health and safety plan needs to be updated, it should be done by adding information clearly and removing old information so as to avoid confusion. For instance, if the names of the trained first aiders change, the new ones should be added to the plan and the old ones removed; if the location of the first aid kit changes, this should be updated.

The most important thing about the construction health and safety plan is that the information contained in it is made available to all operatives on the site – the simpler the updates, the easier things will be understood.

Risk assessments and method statements could be included as a separate document to the plan, making it easy to add new information to risk assessments without changing the overall plan.

If the principal contractor decides to implement a new permit to work procedure for a specific activity that has only recently come to light, then this permit to work system must be clearly explained in the construction health and safety plan.

An aspect of the construction health and safety plan that will need to be constantly kept under review, and updated when necessary, will be the fire safety plan. As construction work progresses, site exit routes may become altered (e.g. by permanent partitioning). Alterations must be clearly depicted on the fire safety plan.

The principal contractor should ensure that, perhaps once a week, time is set aside to review the construction health and safety plan, and any relevant changes that are made must be *communicated* to site operatives via the arrangements made for ensuring health and safety issues are considered (e.g. at the weekly site contractors' meeting).

Feedback from site operatives on health and safety matters should be considered, and the construction health and safety plan amended or updated to take into account operatives' concerns, ideas and suggestions as to how the site could be improved from a health and safety point of view.

Generic risk assessments will need to be reviewed and updated to incorporate site-specific issues. These should then be kept in a separate document to the construction health and safety plan, together with any associated method statements. Individual risk assessments can be issued to specific operatives as necessary, or, importantly, to the contractor foreperson so that they can assess what safety precautions need to be followed by their team.

Is the fire safety plan a separate document?

No. The fire safety plan can be an integral part of the construction phase health and safety plan, as fire safety matters are itemised in CDM Regulations 16–35.

The fire safety plan should identify fire risks throughout the site, such as

- combustible materials
- the use of hot flame equipment
- the use of liquid petroleum gas
- the use of combustible substances
- the storage and use of any explosive materials and substances
- sources of ignition (e.g. smoking)
- the use of heaters.

Once the potential fire risks are identified (i.e. where, when, why and how a fire *could* start on site – or in the surrounding area, yards, outbuildings), the fire safety plan should include precautions and procedures to be adopted to *reduce* the risks of fire. These could include

- operating a hot works permit system
- banning smoking on site in all areas
- controlling and authorising the use of combustible materials and substances
- providing non-combustible storage boxes for chemicals
- minimising the use of liquid petroleum gas, and designating external storage areas
- controlling the siting and use of heaters and drying equipment
- operating a permit to work system for gas and electrical works.

Having identified the potential risks and the ways to minimise them, there will always be some residual risk of fire. The fire safety plan should therefore contain the emergency procedures for dealing with an outbreak of fire, namely

- the types and locations of fire notices
- the location, number and type of fire extinguishers provided throughout the site
- the means of raising the alarm
- the identification of fire exit routes from the site and surrounding areas
- access routes for emergency services
- the procedure for raising the alarm
- the assembly point/muster point.

The fire safety plan should also contain the procedures to be taken on site to protect against arson, such as

- the erection of high fencing/hoarding to prevent unauthorised entry
- fenced or caged storage areas for all materials, particularly those that are combustible
- site lighting (e.g. infra-red and PIR sensors)
- the use of CCTV
- continuous fire checks of the site, particularly at night if site security is used.

Procedures for the storage and disposal of waste need to be included, as waste is one of the main sources of fire on construction sites.

Materials used for the construction of temporary buildings should be fire protected or non-combustible whenever possible (e.g. 30 min fire protection). The siting of temporary buildings must be considered early in the site planning stage, as it is best to locate them at least 10 m away from the building being constructed or renovated.

Having completed the fire safety plan, a sketch plan of the building indicating fire points, the assembly point, fire exit routes, the emergency services access route to site and so on should be completed and attached to the plan. The sketch plan (which could be an architect's outline existing drawing) should be displayed at all fire points and main fire exit routes, and must be included in any site rules/information handed out at the induction training.

What criticisms does the HSE have of construction phase health and safety plans?

The HSE has raised many concerns about the quality of construction phase health and safety plans, in particular regarding the general content, which is often not relevant to the project in hand. It would prefer thinner but more site-specific documents.

Some of the common deficiencies are itemised as follows

- Activities are not assessed; that is, those activities with health and safety risks that affect the whole site or specific trades (the storage and distribution of materials, the movement of vehicles, pedestrian access ways, the removal of waste, the provision and use of common mechanical plant, the provision and use of temporary services, commissioning and testing procedures, etc.).
- Management arrangements do not focus sufficiently on the role of risk assessments.
- Site supervisors and managers do not have reasonable knowledge of safety, health and welfare requirements and standards.
- Site supervisors and managers are not familiar with the contents of the construction phase health and safety plan.
- Monitoring arrangements are overlooked or the 'competent' person performing this role is not suitably qualified.
- Details of welfare provision are limited to a few lines of the plan. They should cover in explicit detail the requirements and implementation of Schedule 2 of the CDM Regulations 2015.
- Fire precautions, including arrangements for the fire alarm system (if required) and emergency lighting, are often overlooked.
- The implication for health and safety of tight timescales for the project are not fully addressed in the plan. The plan often fails to recognise that shortening a construction programme increases the amount of material stored on site and increases the number of operatives on site, both of which lead to restricted work space, inadequate supervision, poor coordination and control, and so on. This issue should be clearly set out in the section of the plan that covers 'preparation and planning time'.

Follow the hierarchy of risk control, namely

- eliminate
- reduce
- isolate
- control.

Actions for controlling HAV risks could include

- Substitution
  - Look for alternative work methods that eliminate or reduce exposure to vibration.
  - Mechanise or automate the work.
- Equipment selection
  - Make sure that equipment selected or allocated for tasks is suitable and can do the work efficiently.
  - Limit the use of high-vibration tools wherever possible.
  - Use suitable low-vibration tools wherever possible.
- Maintenance
  - Introduce appropriate maintenance programmes for your equipment to prevent avoidable increases in vibration.
  - Sharpen and replace regularly items such as chisels and abrasive discs so that equipment is efficient and keeps employees' exposure time to the minimum possible.
- Work schedules
  - Limit the time your employees are exposed to vibration.
  - Plan work to avoid employees being exposed to vibration for long, continuous periods (several shorter periods are preferable).
- Clothing
  - Provide your employees with protective clothing when necessary to keep them warm and dry. This should encourage good blood circulation, which should help protect them from developing vibration-related diseases.
  - Anti-vibration gloves, which aim to isolate the wearer's hands from the effects of vibration, are available commercially. They must not be the main control mechanism, but can be included in a range of control measures. However, gloves and other warm clothing can be useful to protect vibration-exposed workers from cold, helping to maintain circulation.

Actions for controlling whole-body vibration risks could include

- training and instructing operators and drivers to
  - adjust vehicle speed to suit ground conditions
  - adjust suspension seats and controls correctly
  - follow worksite routes that minimise whole-body vibration risks
  - operate attached equipment smoothly

- choosing machinery that is suitable for the job
- maintaining machinery and roadways to an adequate standard by
  - making sure that site roadways are well maintained (potholes filled in, ridges levelled, debris removed, etc.)
  - maintaining vehicle suspension systems correctly (wheels, cab, seat, tyre pressures, etc.).

What training should I give my employees on the use of vibrating equipment?

Employers should ensure that employees fully understand the level of risk they may be exposed to, how it is caused and the possible health effects. For example

- which work equipment and processes cause vibration risks, and their respective levels of risk
- how their personal daily exposures compare with EAVs and ELVs
- what symptoms of ill health they should look out for, to whom they should report them and how they should report them
- what control measures have been taken or are planned to reduce risks
- the use of PPE where required (e.g. special clothing required to keep the body and/or hands warm)
- what training is in place or planned for operators, supervisors and managers in their respective roles to ensure control of exposure (e.g. through the correct selection, use and maintenance of equipment or restriction of exposure times)
- what health surveillance has been or will be provided, how it is going to be provided and why it is important, as well as the overall findings (in anonymous form)
- employees are expected to
  - follow instructions they are given on safe working practices
  - report problems with their equipment, such as unusually high vibration levels
  - cooperate with the programme of control measures and health surveillance.

Should equipment manufacturers or suppliers provide information about the risks of vibration syndrome from their equipment?

Manufacturers of machinery are required by the Supply of Machinery (Safety) Regulations 2008 to design and construct their products to minimise vibration risks and to provide their customers with information on vibration emissions from their equipment, on the safe use of the equipment and to warn of residual risks.

Suppliers of vibrating equipment, including plant hire companies, must pass on to their customers any information received from manufacturers about the level of vibration emissions and the effects of vibration on users.

Employers must ensure that they use any information from suppliers and manufacturers wisely when calculating the exposure levels of vibration for operatives, as they must ensure that the equipment is being used in similar circumstances and conditions to the manufacturers' trial data.