



GUIDANCE NOTE – GN 5
SITE SAFETY FOR
COMMISSIONING ENGINEERS



2018 Edition

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1. GENERAL

Note: The Health and Safety Policy of the Main Contractor on site will always take preference as they are the ultimate employers, but you must do nothing to counter your own companies Health and Safety Policy.

The following is also good practice that should be adhered to.

- 1.1. HVAC Commissioning Engineers should be committed to ensuring that all work activities are carried out in accordance with all relevant statutory provisions and that all practicable measures will be taken to avoid health and safety risks to themselves or others who may be affected by their operations. Particular emphasis should be given to observing the requirements of the Construction (Design and Management) Regulations of 6th April 2015 as amended whilst considering the requirements of the associated HSE guidelines.
- 1.2. In practical terms HVAC commissioning engineers should be aware of, and follow, logical health and safety procedures in all the work they do on site.
- 1.3. There are many aspects of the work on site that you may come across which will be concerned with safety. In all cases, the bottom line is that you must take responsibility for both your own safety and the safety of those around you when carrying out your work.
- 1.4. If you act safely, and expect the same from others around you, the risk of accidents will be greatly reduced.
- 1.5. It is recommended HVAC Commissioning Engineers hold suitable CSCS Skillcards as defined in CSA **Guidance Note 6**. (Commissioning Trainees and Assistants - Red Card, Commissioning Engineers - Blue, Senior Commissioning Engineers - Gold, Commissioning Managers - Black).

2. ACCIDENT PREVENTION AND REPORTING

Accident and ill health prevention should be a high priority for all HVAC Commissioning Engineers.

Whenever an accident/occupational ill health incident or a near miss occurs, this should be reported and your Manager responsible for health and safety, or his/her appointed representative should immediately investigate it, and action should be taken to prevent or minimise the likelihood of a recurrence. All accidents/occupational ill health incidents and near misses must be reported.

These procedures must be operated where any incidents occur, which affect you, your fellow employees, occupiers of premises, contractors or members of the public.

RIDDOR's (The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013) injury reporting requirement is over seven days' incapacitation (not counting the day on which the accident happened).

Incapacitation means that the worker is absent or is unable to do work that they would reasonably be expected to do as part of their normal work.

Under RIDDOR you should still keep a record of all over-three-day injuries in the accident book.

The deadline by which the over-seven-day injury must be reported is fifteen days from the day of the accident.

In case of death or major injuries your company should notify the enforcing authority without delay.

They should report on line at www.hse.gov.uk/RIDDOR and complete the appropriate online report form. The form is submitted directly to the RIDDOR database. You should then receive a copy for records.

All incidents can be reported online but a telephone service can be used for reporting fatal and major injuries **only** at the HSE Incident Contact Centre on 0845 300 9923, Monday to Friday 8.30am to 5pm.

Specific categories of RIDDOR as amended, have to be reported to the enforcing authorities for the workplace.

The categories are:

- Fatality
- Major injuries – fractures, amputation, dislocation, loss of sight, electric shock/burn, unconsciousness or hospitalisation for over 24hrs.
- Unable to undertake their normal work for over 7 days (including days on which they would not normally work).
- Dangerous occurrences (Examples are):
 - Failure of equipment which may lead to injury, i.e. lifting equipment, pressure systems.
 - Scaffolding collapse or partial collapse.
 - Electrical incidents.
 - Incidents involving dangerous substances.

Specific RIDDOR listed occupational diseases must also be reported including cramp of the hand and forearm due to repetitive movements and carpal tunnel syndrome.

Reports should be made to:

The Incident Contact Centre
Caerphilly Business Park
Caerphilly
CF83 3GG

Tel: 0845 300 9923
Fax: 0845 300 9924
<http://www.riddor.gov.uk>

In addition to the requirements of RIDDOR the details of incidents, however minor, must be entered in the Accident Book as required by the Social Security (Claims and Payments) Regulations 1979 and the Social Security Administration Act 1992.

Note: After each Entry is made in the accident book the individual form is to be sent immediately to your Office for secure storage in accordance with data protection legislation. All Accident book entries should be kept back at your Office.

3. Risk Hierarchy and Prevention

The Management of Health and Safety at Work Regulations 1999/2006 as amended; The Manual Handling Operations Regulations 1992/2002; The Control of Substances Hazardous to Regulations 2005 as amended and other current legislation require that for **all** work activities, the risks to the health and safety of employees and other persons should be identified and assessed. Site specific/job specific/project specific and where

required on-site risk assessments will also be produced by the designated competent responsible person(s).

When the risks are considered unacceptable they must be eliminated, minimised or reduced to an acceptable level. Risk assessments should cover for example:

- Substances hazardous to health with reference to Workplace Exposure Limits
- Manual handling operations
- Construction activities relating to designs
- Maintenance activities relating to designs

As indicated above this list is not exhaustive

Written records of assessments should be produced and should include hazard identification, identifying those groups of persons especially at risk and the means of control necessary.

4. TRAINING

Your company should provide training and instruction in health and safety issues, including when either changes in technology, materials, working practices or work location dictate.

You should receive general health and safety awareness training for office and site activities, on a regular basis, and this training is supplemented by training in specific aspects.

- 4.1 Your employer should ensure that you have suitable training and experience in all the work that you are required to do including the use of any instrumentation or equipment that is required.
- 4.2. It is also your responsibility to ensure that you are competent in all the work that your job involves.
- 4.3 The principal contractor/contractor may require some evidence of your, knowledge, experience training and skills, particularly where the work involved is especially hazardous. You may, therefore, need to have certificates/evidence of training and overall competence.

5. Toolbox Talks

Toolbox talks are important in high-risk industries such as construction. They can deliver new knowledge, refresh existing knowledge and help you to comply with the law.

Toolbox talks are short health and safety talks covering a range of safety issues such as asbestos awareness, working at height and ladder safety. They are not however a replacement for full training courses.

For further information on toolbox talks refer to CITB Construction skills <https://www.citb.co.uk>

6. PERSONAL SAFETY

- 6.1 Before setting off to work on site, make sure you are properly equipped to carry out your work safely. **Note:** Different sites may have different requirements.
- 6.2 You should have, as a minimum, the following items of personal protective equipment (PPE):-
- Hard hat
 - Fluorescent hi-vis waistcoat or jacket

- Eye protection such as safety glasses / goggles (e.g. especially when you are drilling ductwork test holes)
 - Gloves
 - Ear defenders / plugs (for protection in noisy areas)
 - Foot protection with mid-sole protection
- 6.3. You are responsible for looking after your own personal protective equipment and making sure that it is in fully serviceable condition and therefore you should:-
- never leave your hard hat in the sun; this can make it become brittle.
 - do not put stickers on your hard hat other than those provided by the principal contractor/contractor (e.g. to certify your safety induction training). The use of stickers can also make the hard hat brittle.
 - if you see any signs of brittleness, or other damage, have your hard hat replaced.

7. RISK ASSESSMENT AND TYPICAL SITE HAZARDS

- 7.1 Your employer should consider the general and particular safety aspects involved in your work and prepare a written risk assessment covering these. These can take the form of RAMS (Risk Assessment Method Statement). This essentially is your method statement for your works but including the associated task risk assessments.
- 7.2. For particular sites, the principal contractor/contractor may prepare a risk assessment covering safety aspects especially applicable to his project/contract.
- 7.3. You and your company should always produce a site-specific risk assessment covering all site-specific risks and hazards within the environment of the project. This should be reviewed and made available to all your employees. General format consists of evaluating the particular risk and scoring the risk against likelihood and severity and then implementing control measures and scoring again to bring to an acceptable and safe level.
- 7.4. You should ensure that copies of any risk assessments are available to you and familiarise yourself with the contents.
- 7.5. There are a number of typical site hazards which will often be present. These include:-
- Open trenches
 - Holes in the floor slabs or missing tiles in false floor systems.
 - Open shafts
 - Noise from other trades or processes (causing distraction or ear damage).
 - Arc welding flashes (causing eye injury or distraction)
 - Working at height or on roofs.
 - Working in confined spaces
 - Persons working overhead
 - Risk of tripping (e.g. over pipe work, cables etc.)
 - Live electrical equipment, panels and distribution boards.
 - HV and LV switch rooms.
 - Rotating plant.
 - Hot work (fire and fume risks)
 - HTHW, MTHW and steam distribution systems.
 - Water treatment chemicals.
 - Explosive or flammable atmosphere (e.g. battery charging rooms).

7.6 Typical Site Hazards

Commissioning work may involve inherently hazardous working conditions. The following items indicate examples of particular dangers.

- Burning/Scalding Hazards from medium and high temperature hot water or steam distribution systems. Wherever possible, carry out work on such systems when they are circulating ambient or reduced temperature fluids. Where this is not possible, wear suitable protective clothing, particularly gloves and goggles. Use non-invasive instruments to measure fluid flow rates (e.g. ultrasonic flow meter) and temperatures (e.g. surface thermometer).
- Permit-to-Work schemes may be operated by the principal contractor/contractor for hot work, work in confined spaces or areas with difficult access, work on running plant (e.g. fans, pumps etc) or work on “live” electrical plant or high temperature fluid systems (e.g. HTHW, MTHW or Steam). Ensure that you understand fully the requirements of the schemes and comply with them.

7.7 Hazardous Environments

Dangerous fumes can be emitted from fume cupboard extract systems and even from combustion outlets (e.g. boiler flues).

Refrigerant leakage's, while not necessarily toxic, can result in injury particularly in poorly ventilated areas.

Radioactive areas are clearly marked and must only be entered by properly trained and equipped, competent, authorised personnel.

Exposure to microwave radiation from communications aerials and dishes should be controlled in accordance with the instruction provided.

Explosive/flammable atmospheres.

7.8 Other Hazards

Special equipment which you may have to operate should have full instructions for its safe use. Make sure you read these and follow them carefully.

Inverter drives used on variable speed motors can hold a dangerously high electrical voltage charge for at least 5 minutes after they have been isolated. Again, read the manufacturer's instructions and comply with them.

8. WORKING AT HEIGHT AND ACCESS PROVISIONS

Working at height is always high-risk activity and falls are a major cause of accidental death in the construction industry and need to be avoided by adherence to the work at height hierarchy and provision of suitable access equipment being properly and competently used.

High safety standards are essential for all working at height and the nature of the precautions required must be assessed for each individual job. This procedure sets out responsibilities, precautions and provides general guidance for good practice relevant to all working at height.

8.1 Purpose

The purpose is to ensure:

- Working at height is avoided wherever possible.
- When working at height is unavoidable all hazards are considered and sufficient safe systems of work are in operation that will actively reduce the risk of injury to all persons involved.
- Compliance with relevant legislative requirements.
- Best practice is adopted.

8.2 Definitions

8.2.1 Working at Height

All falls from any height must be prevented. Work at height means work in any place, including a place at or below ground level or when a person is accessing or exiting from such a place (except via a staircase in a permanent workplace) where if regulatory measures are not taken, a person could fall a distance likely to cause personal injury.

8.2.2 Short duration work

Short duration work is measured in minutes rather than hours. It includes jobs such as for example, replacing a few tiles, making minor adjustments to equipment, inspections and access to other areas/locations. Work at height is still dangerous even if it lasts for a short time and appropriate safety measures are essential. In regard to this area, ladders can be used if after assessing the risks the use of more suitable work equipment is not justified because of the low risk and short duration. Short duration is taken to be between 15 and 30 minutes depending upon the task.

Check with each site as to whether ladders can also be used for low risk work.

8.2.3 Ladders

Ladders refers to fixed ladders, all portable ladders, section ladders, extending ladders, combination ladders and stepladders. Note: If working off ladders you should have suitable training, skills, knowledge and experience.

8.2.4 Working platform

A working platform constitutes any platform used as a place of work or as a means of access or egress from / to a place of work (e.g. scaffolding, trestle, mobile platform). Note: If working off platforms you should have suitable training, skills, knowledge and experience.

8.3 Legal Requirements

The Work at Height Regulations 2005 (as amended)

The overriding principle of these regulations is that employers must do all that is reasonably practicable to prevent anyone falling. The hierarchy for managing work at height is as follows:

- Avoid work at height where possible.
- Use work equipment or other measures to prevent falls where working at height cannot be avoided.
- Where the risk of falling cannot be eliminated, use work equipment or other measures to minimise the distance and consequences of any fall.

All work at height must be properly planned and organised.

- Ensure that no work at height is carried out if it is safe and reasonably practicable to do it other than at height.
- Ensure that the work at height is properly planned, supervised and carried out as safely as is reasonably practicable.
- Ensure that emergencies and rescue procedures are planned for.
- Take account of the risk assessment findings carried out under Regulation 3 of the Management of Health and Safety at Work Regulations.

8.4 Procedure

8.4.1 Necessity of working at height

The best way to avoid a fall from height is to make sure that nobody ever undertakes working at height. Therefore working at height should always be avoided where possible by asking ‘do we need to do the work at height?’ If the work needs to be done can it be completed in a controlled manner from a safe place?

8.4.2 Precautions for all working at height

The following precautions are required for all working at height. It is the responsibility of the duly authorised person or relevant line manager to ensure all aspects of this section have been carried out prior to work commencing and to ensure that a safe system of work to include a working at height permit (as required) is fully implemented.

8.4.3 Risk assessment, method statements and working at height permits

Prior to any working at height commencing a risk assessment must be undertaken by a competent person and be recorded in line with your risk assessment process.

It is the responsibility of management to ensure that such persons receive appropriate information, instruction and training in risk assessment as required. Risk assessments and any method statements must be signed by the competent person and communicated to all those involved in the working at height activity. A combination of risk assessment, safe working procedure / method statement and permit to work is to be used where a person can fall and they must be authorised and in operation for the duration of the task.

8.4.4 High Level Access Provisions

- The principal contractor/contractor may require you to use only the access platforms, fixed or mobile towers, ladders or stepladders that he has provided on site. Where this is so, you must comply with his instructions.
- Where your employer provides their own access equipment, platforms, ladders and step-ladders, your employer should ensure that these are inspected regularly to ensure they remain safe for use. The principal contractor/contractor may also require to inspect your access equipment as he has an overall responsibility for safety on site.
- Unless you have received approved training and have an appropriate and current certificate, you must not:-
 - operate mechanical access plant such as “cherry-pickers” or “flying-carpets”
 - erect standing or mobile towers or scaffolding.
 - When working on high-level access equipment, always use a safety harness and lanyard attached to a secure fixing.

9. SAFETY RELATED PAPERWORK

- 9.1. The principal contractor/contractor or site safety officer may require to inspect items of your paperwork relating to health and safety such as the following:-
- Your employer's health and safety policy
 - Health & Safety Plan
 - Your employer's project risk assessments
 - Your employer's project method statement or work procedures
 - Your training certificates (e.g. for the erection of standing or mobile towers or scaffolding).
 - Your certificate/operator's licence for high level access plant.
- 9.2. Make sure you have all necessary paperwork with you at all times.
- 9.3. Where the main contractor operates permit-to-work schemes, make sure that you understand the requirements and comply with them.

10. ARRIVAL AND ATTENDANCE AT SITE

- 10.1. On first arrival at site:-
- book in with the main contractor and acquaint yourself with site safety procedures.
 - you should be required to undergo a site safety induction organised by the principal contractor/contractor or safety officer.
 - familiarise yourself with site arrangements including:-
 - exit routes and emergency assembly points.
 - where to obtain first aid
 - fire extinguisher locations and what to do in the event of a fire.
 - the location and layout of pedestrian and vehicle access routes on site.
- 10.2. Special safety requirements often apply on particular sites. You should enquire whether there are any such requirements on your site and to find out what they entail.
- 10.3. During your period of working on site:-
- always remember to sign in and out each day
 - beware of site traffic and visiting vehicles
 - look out for hazards which may affect you and the work you have to carry out
 - take notice of, and comply with the safety signs displayed on site
 - report any unsafe situations or practices to the safety officer or principal contractor/contractor representative
 - make sure you are aware of any special conditions on site which may affect safety and ensure you comply with any special instructions.

11. SAFETY SUGGESTIONS

- 11.1 Most employer's and construction sites have some form of Suggestion Scheme. If you think there is a way of doing your job more safely you should suggest this. Remember, nobody knows more about doing your job than you!
- 11.2. When you take your first look round on a new site, try to keep safety arrangements in mind. If you notice that some good safety arrangements which you have seen on previous sites are not being used, suggest that they are adopted here.

12. SITE SAFETY ARRANGEMENTS

12.1. Site safety arrangements are made for your benefit. Make sure that you take notice of them and comply with them.

12.2 Additional References:

- Consulting employees on health and safety: A brief guide to the law Leaflet INDG232 (rev2) HSE Books 2013 www.hse.gov.uk/pubns/indg232.htm
- Getting specialist help with health and safety Leaflet INDG420 (rev1) HSE Books 2011 www.hse.gov.uk/pubns/indg420.htm
- Workplace health, safety and welfare. Workplace (Health, Safety and Welfare) Regulations 1992. Approved Code of Practice and guidance L24 (Second edition) HSE Books 2013 ISBN 978 0 7176 65839 www.hse.gov.uk/pubns/books/l24.htm
- Construction phase plan (CDM 2015): What you need to know as a busy builder Construction Information Sheet CIS80 HSE Books 2015 www.hse.gov.uk/pubns/cis80.pdf
- Provision of welfare facilities during construction work Construction Information Sheet CIS59 HSE Books 2010 www.hse.gov.uk/pubns/cis59.htm
- Health and safety in construction HSG150 (Third edition) HSE Books 2006 ISBN 978 0 7176 61824 www.hse.gov.uk/pubns/books/hsg150.htm
- The absolutely essential health and safety toolkit for the smaller construction contractor Leaflet INDG344(rev2) HSE Books www.hse.gov.uk/pubns/indg344.htm
- Want building work done safely? A quick guide for clients on the Construction (Design and Management) Regulations 2015 Leaflet INDG411 (rev1)
- Managing Health and Safety in Construction - CDM 2015 – L153