

An Introduction to the Legislation, Regulations, Standards For Fire Dampers and Smoke Control Dampers



Competence v Compliance

BSEFSD – standards, *“know and understand the scope and limitations of your own competence, responsibilities and accountability as it applies to your job role”* (K2)

The process is about Judgements – Authority – Accountability – Traceability –

If you drive a car, you might well be competent, although if you hold no licence you're not legally compliant, and if you don't wear a seatbelt you're breaking the law. Many will be unconsciously breaking the HSE's Statutory Instruments often referred to as regulations, the Building Safety Act 2022, and the Building Regulations.

Competence

Competence refers to an individual's capacity to perform job responsibilities.



Compliance

Compliance means conforming to a rule, such as a regulation, policy, standard or law.



BSEFSD - Fire Dampers and Smoke Control Dampers Standards

Knowledge and understanding

You need to know and understand:

- 1. the current legislation, guidelines, policies, procedures and protocols which are relevant to your work practice and to which you must adhere.*

Acts of Law

Regulations

Standards – Occupational

Codes of Practice

Policies, Practices, Procedures



Health and Safety Legislation - Fire Dampers and Smoke Control Dampers Standards

The Health & Safety law for Fire Dampers and Smoke Control Dampers can be difficult to understand at first glance.

An example of this could be understanding the differences between an Acts, Regulations, Standards, Guidance, etc.

What do they mean?

Acts are pieces of statutory legislation that have been passed by Parliament, which means that they are **laws**. Breaching of an act creates liability enforceable in court.

Some examples of statutory legislation include:

- The Health & Safety at Work Act 1974
- The Building Safety Act 2022
- The Environment Act 1995
- The Fire Safety Act 2021

Health and Safety Legislation - Fire Dampers and Smoke Control Dampers Standards

Regulations are supplementary to acts. They link to existing acts and they are designed to aid a person to apply the principles of the primary act. Essentially, they are formal guidelines,

Some examples of regulations include:

- The Health and Safety (First-Aid) Regulations 1981
- The Management of Health and Safety at Work Regulations 1999
- The Building Regulations (Amendment) 2023

What are **British Standards** in construction?

British Standard (BS) publications are technical specifications or practices that can be used as guidance for the production of a product, carrying out a process or providing a service.

The BSI Kitemark, first introduced in 1903, is commonly found on a range of products, including construction products.

Do you have to follow British Standards?

British Standards are voluntary and not a legal requirement, but if products don't comply with standards, they can be unfit for purpose and dangerous.

Fire Dampers and Smoke Control Dampers Standards

What are **National Occupational Standards** ?

National Occupational Standards are statements of the standards of performance individuals must achieve to be competent when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding.

National Occupational Standards, also known as professional standards, specify UK standards of performance that people are expected to achieve in their work, and the knowledge and skills they need to perform effectively.

Guidance (Codes of Practice) sit below acts and regulations. A breach of guidance or codes of practice is not necessarily an offence and would need to be directly linked back to the primary act offence.

An example of guidance is [The HSE First Aid at Work Approved Code of Practice](#).



Acts of Law

Building Safety Act 2022

Item 35 Industry competence

“Competence requirements”

Skills, knowledge, experience behaviours



Statutory Instruments

Regulations



legislation.gov



National Occupational Standards

Standards



Defined “Skills and Knowledge”
developed by government approved
Sector Skills Councils

bsi.

technical specifications
Product, Testing

Not competence, an MOT doesn't tell you of a
drivers skills and knowledge



Codes of practice, guidelines

A written document



Organisational Procedures

Policies, processes, safe systems of work, documentation

What is an Act of Parliament?

An Act of Parliament creates a new law or changes an existing law.

An Act is a Bill that has been approved by both the House of Commons and the House of Lords and been given Royal Assent by the Monarch. Taken together, Acts of Parliament make up what is known as Statute Law in the UK.

Putting the Act into force

The Government are responsible for bringing new laws into force, once they have been passed by Parliament. An Act may come into force immediately, on a specific future date, or in stages.



Statutory Instruments owned and enforced by HSE/local authorities – Regulations.



- What is a statutory instrument in the UK?
- Statutory Instruments (SIs) are a form of legislation which allow the provisions of an Act of Parliament to be subsequently brought into force or altered without Parliament having to pass a new Act.
- They are also referred to as secondary.
- There are three main types of UK Statutory Instrument: 'Orders', 'Regulations', 'Rules'.
- These are regulations made by government departments to implement the provisions made in Acts of Parliament.
- There's a table containing data relating to Statutory Instruments owned and enforced by HSE/local authorities.
- **Statutory instruments** (Examples)
 - CDM Regulations
 - COSHH
 - LOLER
 - Management of Health and Safety at Work Regulations.1999
 - PPE
 - PUWER



The British Standards Institution (BSI) (Examples)

Other new **guidance**:
NOTE: These are not
“Occupational Standards”



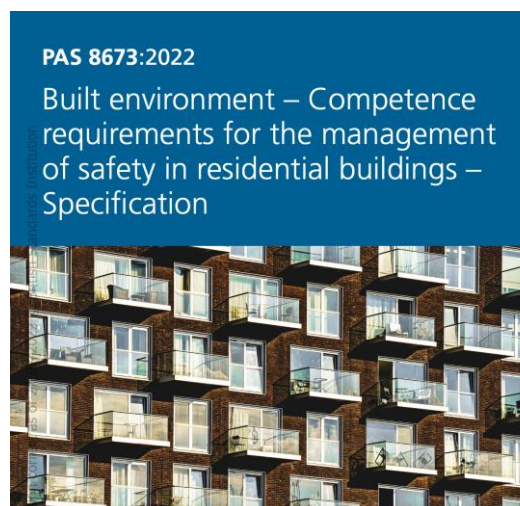
BSi 8670 (Flex)
Behavioral Competence
Fire Safety
Management of Building
Safety



BSi 8672
Principal Contractors



BSi 8671
Designers



BSi 8673
Management Safety,
residential buildings

What are National Occupational Standards



“...also known as professional standards, specify UK standards of performance that people are expected to achieve in their work, and the knowledge and skills they need to perform effectively”.

National Occupational Standards(NOS) are developed by *Standard Setting Organisations (SSO)* who consult with *employers and other stakeholders across each of the UK nations, (Scotland, Wales, Northern Ireland and England)*. This *consultation process allows any specific requirements to be considered by each nation and the result is a set of NOS that are suitable for use across the UK. The NOS, which are set out in a common format, are approved on a four-nation basis and content is scrutinised by SQA Accreditation. Each NOS has a published date stating when it was approved, and the most current NOS are listed in this database. There is also an anticipated review date and this will be used as a guide to when they require reviewing and feedback from stakeholders is taken to influence when this is commissioned.*

NOS can be used for developing skills and knowledge and these include; direct transfer into vocational and other qualifications, framework for training programmes, measures of workplace competence and influencing job descriptions.

NOTE:

The Government appoint/licence, the Sector Skills Council to develop National Occupational Standards, which contain the “Skills and Knowledge” for that standard.

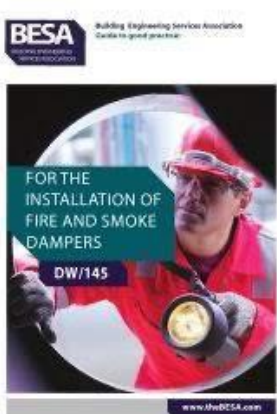
What is the difference between legislation and code of Practise?

When it comes to safety in the workplace, what is the difference between code of practice and legislation? Codes of practice are guidelines and rules that employers are expected to implement in the workplace. Legislation, on the other hand, refers not to suggestions or recommendations but laws that must be followed.



A code of practice is a written guideline issued by a professional association that lays out ethical standards for a profession, trade, occupation, organization, or union. Codes of practice do not usually carry the same force as legislation.

“As a code of practice, takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading”.



Examples of Legislation, Regulations, Standards and Practices for Fire Dampers and Smoke Control Dampers

Health and Safety at work act 1974

Building Safety Act 2022 – Item 33, 35

Management of health and safety at work Regulations 1999

The Manual Handling Operating Regulations, COSHH, PPE, RIDDOR, PUWER.

Electricity at Work Regulations

Fire Safety Order

Building Regulations 2010 ADB

Building Regulations 2010 ADF

BSEFSD

BSEHV05, BSEHV06

BSI 9999 – Fire Safety Design and Management

Codes of Practice

Company Policies and Procedures

The Health and Safety at Work Act 1974 (HASWA)



- The Health and Safety at Work etc Act 1974 is the **primary** piece of **legislation** covering occupational health and safety in Great Britain.
- It provides the legal framework to promote, stimulate and encourage high standards of health and safety in places of work.
- It protects employees and the public from work activities.
- **Health and Safety Law**
- **What you need to know**
- **What employers must do for you**
 1. 1 Decide what could harm you in your job and the precautions to stop it. This is part of risk assessment.
 2. 2 In a way you can understand, explain how risks will be controlled and tell you who is responsible for this.
 3. 3 Consult and work with you and your health and safety representatives in protecting everyone from harm in the workplace.

4. Free of charge, give you the health and safety training you need to do your job.
5. Free of charge, provide you with any equipment and protective clothing you need, and ensure it is properly looked after.
6. Provide toilets, washing facilities and drinking water.
7. Provide adequate first-aid facilities.
8. Report major injuries and fatalities at work to our Incident Contact Centre: **0345 300 9923**. Report other injuries, diseases and dangerous incidents online at **www.hse.gov.uk**.
9. Have insurance that covers you in case you get hurt at work or ill through work. Display a hard copy or electronic copy of the current insurance certificate where you can easily read it.
10. Work with any other employers or contractors sharing the workplace or providing employees (such as agency workers), so that everyone's health and safety is protected.

The Act places duty on employers to take responsibility for the health and safety of their employees at work “as far as is reasonably practicable”.

The Health and Safety at Work Act 1974 (HASWA)



Businesses employing five or more people

For businesses employing five or more people, there must also be:

- an official record of what the assessment finds (your employer has to put plans in place to deal with the risks)
- a formal health and safety policy which includes arrangements to protect your health and safety (you should be told what these are)

The Health and Safety at Work Act 1974 (HASWA)

Your employer's duty of care in practice

All employers, whatever the size of the business, must:

- make the workplace safe
- prevent risks to health
- make sure that plant and machinery is safe to use
- make sure safe working practices are set up and followed
- make sure that all materials are handled, stored and used safely
- provide adequate first aid facilities
- tell you about any potential hazards from the work you do - chemicals and other substances used by the firm - and give you information, instructions, training and supervision as needed
- set up emergency plans
- make sure that ventilation, temperature, lighting, toilet, washing and rest facilities all meet health, safety and welfare requirements
- check that the right work equipment is provided and is properly used and regularly maintained

- prevent or control exposure to substances that may damage your health
- take precautions against the risks caused by flammable or explosive hazards, electrical equipment, noise and radiation
- avoid potentially dangerous work involving manual handling (and if it can't be avoided, take precautions to reduce the risk of injury)
- provide health supervision as needed
- provide protective clothing or equipment free of charge (if risks can't be removed or adequately controlled by any other means)
- make sure that the right warning signs are provided and looked after
- report certain accidents, injuries, diseases and dangerous occurrences to either the Health and Safety Executive for Northern Ireland or the local authority, depending on the type of business



The Health and Safety at Work Act 1974 (HASWA)

What are the employee responsibilities for The Health and Safety at Work Act?

Whilst the bulk of the legislation has been developed to govern the responsibilities of the employer, there are some steps that employees also need to follow. Employees have a common-law **duty of care** to exercise reasonable care and skill in the relationship with colleagues and the employer. Here are some of the areas where employees need to make sure they are compliant:

- Employees should take steps to adequately protect the health and safety of themselves and colleagues at work
- Employees must not disrupt or interfere with anything put in place to aid in health and safety at work
- Employees may be subject to fines and convictions if they are found in breach of the regulations

As shown health and safety in many ways is the responsibility of all those within a workplace, not just the managers and employers within an organisation.



Building Safety Act 2022

The Act is Primary Legislation

- *The Building Safety Act (the “Act”) received royal assent on 28 April 2022.*
- *The Act is a hugely significant piece of legislation and overhauls the way buildings are constructed and maintained in the UK following the Grenfell Tower disaster in 2017.*
- *The Act will impact all levels of the industry imposing wide-ranging new duties designed to increase the accountability, transparency and oversight of industry participants and the construction and development of higher-risk buildings.*
- *Whilst the provisions of the Act apply to duty holders in England, there are also provisions that apply to Wales, Scotland and Northern Ireland.*



Building Safety Act 2022

CHAPTER 30

CONTENTS

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INTRODUCTION

1 Overview of Act

PART 2

THE REGULATOR AND ITS FUNCTIONS

The regulator and its general functions

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- 5 Duty to keep safety and standard of buildings under review
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Committees

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Building Safety Act 2022

The Act is Primary Legislation

This is significant as it's a Law



There are two items we'll look at here, and it's important to remember these are not recommendations, these are specific acts of legislation.

Item 35 Industry Competence

5C

(2) A “competence requirement” is a requirement relating to—

(a) **the skills, knowledge, experience and behaviors of an individual;**

So, what are the **Skills, Knowledge** and Behaviours for an Individual?

Item 33 Building Regulations

- Building regulations may make provision for and in connection with—
- Certificates: approved schemes
- (a) by a member of a scheme that is approved
- (b) in accordance with the scheme
- Inspection, testing, 1G (1)
- (a) **the inspection and testing of** work;
- (b) the inspection and testing of buildings;
- (c) **the inspection and testing of services, fittings and equipment** provided in connection with buildings;
- (d) the taking of samples.

What are some of the examples of Regulations that come under the Acts?

Management of Health and Safety at Work Regulations 1999

Also known as the 'Management Regs', the Management of Health and Safety at Work Regulations 1999 place a duty on employers to assess and manage risk. Specifically, they require employers to do the following:

- Manage risk in the workplace by carrying out **risk assessments**.
- Take action to reduce or eliminate risks.
- Appoint a 'competent person' to oversee health and safety in the workplace.
- Provide staff with information and training with regards to safe working practice.
- Have a health and safety policy in place.

The Manual Handling Operations Regulations 1992 Amended 2002

The Manual Handling Operations Regulations 1992, as amended in 2002 apply to a wide range of manual handling activities, including lifting, lowering, pushing, pulling or carrying.

Workplace (Health, Safety and Welfare) Regulations 1992

The Workplace (Health, Safety and Welfare) Regulations 1992 apply to most places of work. They require employers to ensure the working environment is safe, as free from risk as is reasonably possible and that appropriate equipment is provided where necessary.

The Regulations Cover:

- DSE
- Ventilation and windows
- Maintenance of equipment
- Lighting
- The environment around the working area such as traffic, risk of slips, trips and falls
- Falling objects
- Waste
- Entry and egress
- Facilities such as restrooms, changing rooms and meals/drinks

The Personal Protective Equipment at Work Regulations 1992

Under the Personal Protective Equipment at Work Regulations, employers have a duty to provide personal protective equipment (PPE) at work to protect staff against health and safety risks “wherever there are risks to health and safety that cannot be adequately controlled in other ways”.



What is PPE?

PPE equipment that needs to be provided may include protective face masks, visors, helmets, goggles, gloves, ear protectors, overalls, safety boots, air filters, hairnets. Furthermore, employers must:

- Provide the PPE equipment free of charge where it is necessary
- Provide instructions and information on how to correctly use the PPE equipment.
- PPE is used as a last resort after implementing other controls to reduce or avoid risk.

COSHH (Control of Substances Hazardous to Health) 2002

The Control of Substances Hazardous to Health Regulations require employers to control the use, storage, transport of any substances which may be harmful to health in order to reduce the workers' possible exposure. COSHH covers a wide range of potentially hazardous substances including:

- Chemicals (bleach for instance)
- Products containing chemicals
- Fumes
- Dust
- Vapour
- Gases and asphyxiating gases
- Biological agents (look for the hazard symbols on the packaging)



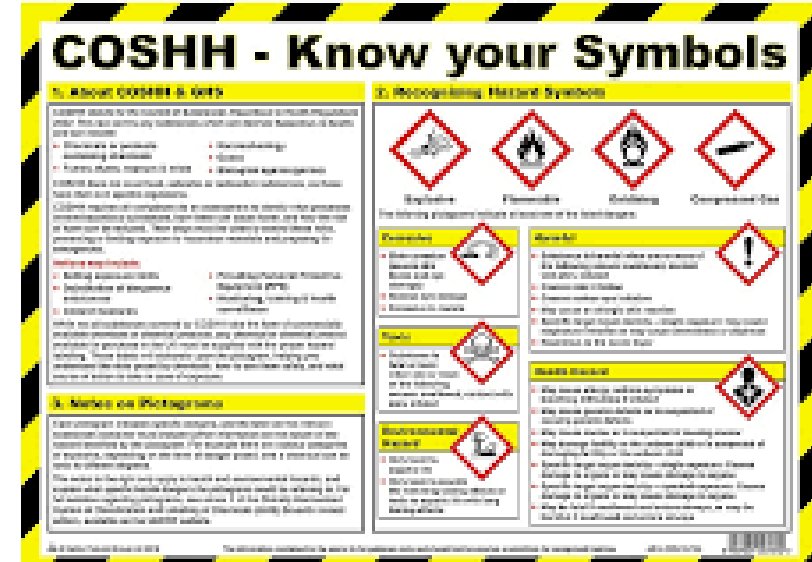
COSHH (Control of Substances Hazardous to Health) 2002

In order to reduce the workers' possible exposure, employers must:

- Identify any use of substances harmful to health
- Assess the risk of using these substances.
- Reduce or eliminate any risk identified by introducing control measures and ensuring these controls are adequate and properly used.
- Provide instructions and training for employees and anyone else who may risk exposure.
- Provide monitoring and health surveillance if appropriate
- Plan for an emergency.

When using hazardous substances, employers should consider how these substances cause harm and whether a different substance or process can be used to reduce risk. For instance, painting rather than spraying paint reduces the risk of vapour inhalation.

COSHH does not cover asbestos, lead or radioactive substances because these have their own regulations.



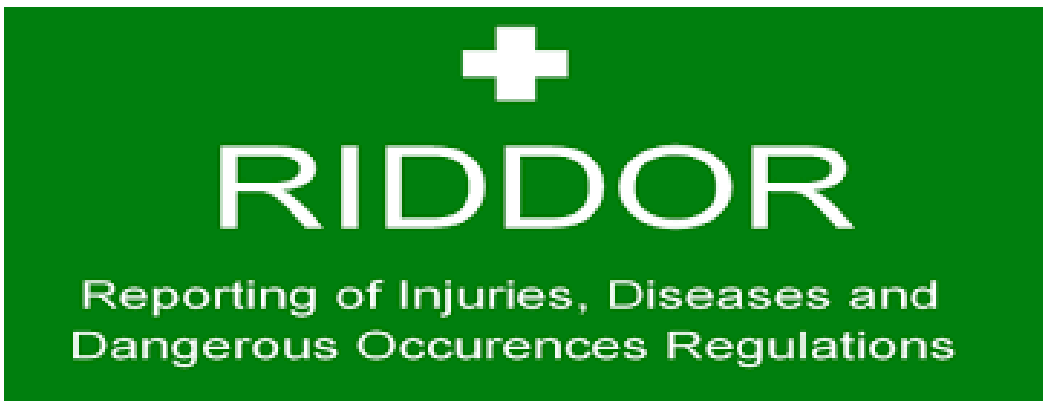
RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995)

RIDDOR requires employers to record and report accidents and injuries at work.

The law applies where there is a dangerous occurrence, injury, accident or disease if the incident is work-related. When deciding if an occurrence is reportable, you should consider the following:

- Was the way work is carried out or supervised a contributory factor?
- Was the accident related to any machinery or equipment being used?
- Are the premises in a poorly maintained condition?

If the answer is No to any of the above, a report is probably not necessary.



What are 'Reportable Incidents'?

- Death. All deaths resulting from a work-related accident must be reported.
- Specific injuries including:
 - Fractures.
 - Amputation.
 - Electric shock.
 - Crush injuries to head or torso.
 - Any serious injury to eyes leading to the permanent loss of or impaired sight.
 - Severe burns, I.E. covering 10% or more of the body, or causing damage to eyes, respiratory system or other organs.
 - Any injury causing loss of consciousness.
 - Over-seven-day incapacitation of a worker.
 - Accidents must be reported where the injuries which result in missing work for 'over seven days'.
- Non-fatal accidents to members of the public (non-staff). Accidents to the public must be reported if they result in an injury which requires immediate hospital treatment.
- Over-three-day incapacitation of a worker. Accidents must be recorded but not reported where they result in over three consecutive days of incapacitation.
- Some occupational diseases or conditions. Including RSI (repetitive strain injury), carpal tunnel syndrome, tendonitis, occupational dermatitis.
- 'Dangerous occurrences'. These are near misses. Some need to be reported such as the failure or collapse of lifting equipment. For further guidance on dangerous occurrences.

The Provision and Use of Work Equipment Regulations 1998 (PUWER)

The Provision and Use of Work Equipment Regulations 1998 place duties on businesses and organisations who own, use or operate work equipment. Under these regulations, employers must ensure any equipment provided or used is:

- Suitable for the intended use.
- Safe to use.
- Properly maintained.
- Used only by those who have had proper training or instruction.
- Accompanied by health and safety measures such as emergency stop buttons and signage.

Some equipment is also covered in other legislation. For instance, PPE equipment is covered by the PPE regulations.

Provision and
Use of
Work
Equipment
Regulations 1998

Electricity at Work Regulations (1989)

The Electricity at Work Regulations apply to all aspects of the use of electricity within the workplace. They place duties on employers, employees and the self-employed to prevent danger. carry out work on electrical systems carried out in a way that prevents danger.

At its simplest the regulations cover 13 main areas:

Systems, work activities and protective equipment

Strength and capability of electrical equipment

Adverse or hazardous environments

Insulation, protection and placing of conductors

Earthing or other suitable precautions

Integrity of referenced conductors

Connections

Protection from excess current

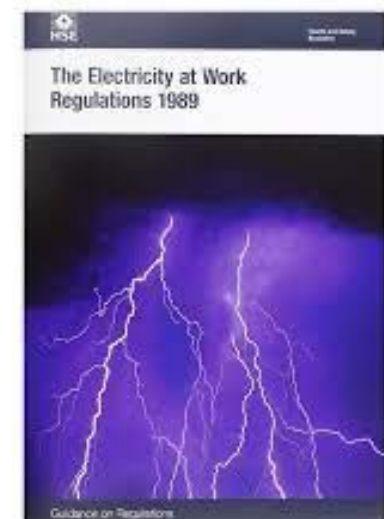
Means for cutting off the supply and for isolation

Precautions for work on equipment made dead

Work on or near live conductors

Working space, access and lighting

Persons to be competent to prevent danger and injury



The Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform (Fire Safety) Order applies to England and Wales only. For Scotland refer to Part 3 of the Fire (Scotland) Act 2005, supported by the Fire Safety (Scotland) Regulations 2006. The Order is designed to provide a minimum fire safety standard in non-domestic premises such as the workplace.

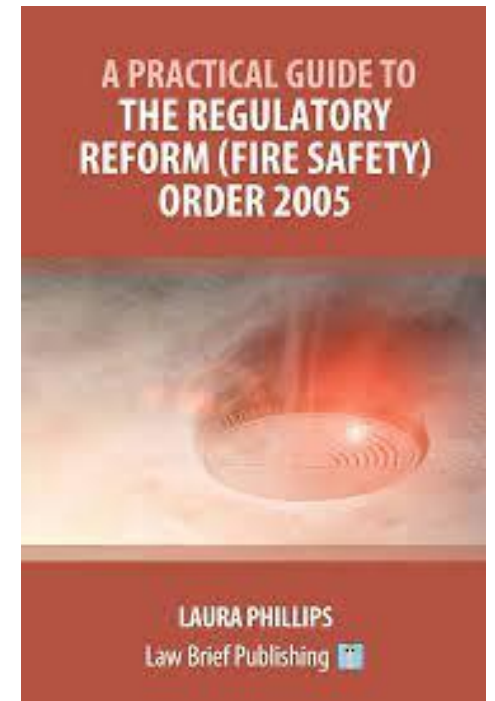
Who is Responsible for Fire Safety in the Workplace?

In the workplace, the employer is the 'Responsible Person'. In order to reduce or eliminate the risk of fire and to identify people at risk, the Responsible Person is required to oversee fire safety and to carry a Fire Risk Assessment. The Responsible Person can appoint a 'Competent Person' in this role however, the ultimate responsibility still lies with the employer.

What are the Requirements of the Fire Order?

1. To carry out a fire risk assessment identifying hazards and risk. For instance sources of ignition and sources of fuel.
2. Consider everyone who is at risk in the event of a fire – staff, visitors, contractors, customers
3. Eliminate risk as far as is possible and have precautions in place to deal with any remaining risk.
4. Ensure safe storage of flammable materials
5. Have an emergency plan in place
6. regularly review your plan and any findings

The Order also requires fire risk assessments to be reviewed and kept up to date, and records maintained.



Fire Safety Act 2021

The Fire Safety Act clarifies the scope of the Fire Safety Order to make clear it applies to the structure, external walls (including cladding and balconies) and individual flat entrance doors between domestic premises and the common parts of a multi-occupied residential building.

If you are a Responsible Person, you must consider these parts when conducting fire risk assessments, if you have not done so already.

Every business must have a designated '**Responsible Person**' whose job it is to make sure certain duties are carried out, and that action is taken to both prevent fires and prevent injury or death if a fire actually occurs.



NEW
FIRE SAFETY
GUIDANCE
1ST OCTOBER 2023



Building Regulations 2010: Fire Safety

- Approved Document B
- Volume 1: Dwellings
- Volume 2: Buildings other than dwellings



ONLINE VERSION



The Building Regulations 2010

Ventilation

F

APPROVED DOCUMENT

Volume 1: Dwellings

Requirement F1: Means of ventilation

Regulations: 18, 43 and 44

2021 edition – for use in England

Building Regulations 2010: Ventilation

- Approved Document F
- Volume 1: Dwellings
- Volume 2: Buildings other than dwellings

The Building Regulations etc. (Amendment) (England) Regulations 2023



[legislation.gov.uk](https://www.legislation.gov.uk)



The following information is taken from the new Building Regulation, with statements taken from section 6: the requirements of competence, for clients, principal contractors, companies and installers.



The Building Regulations etc. (Amendment) (England) Regulations 2023



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Title: Year: Number: Type: All UK Legislation (excluding originating from the EU) Search

Advanced Search (including Welsh legislation in Welsh language)

The Building Regulations etc. (Amendment) (England) Regulations 2023

UK Statutory Instruments ▶ 2023 No. 911 ▶ Table of contents

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Plain View Print Options

What Version
Latest available (Revised)
Original (As made)

Opening Options
More Resources

Status: This is the original version (as it was originally made). This item of legislation is currently only available in its original format.

Collapse all -

Introductory Text

PART 1 Introduction

1. Citation, commencement, extent and interpretation

<https://www.legislation.gov.uk/uksi/2023/911/contents/made>

Collapse -

PART 2 Amendment of the Building Regulations 2010

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3. Amendments to regulation 2
4. Amendments after regulation 2
5. Amendment to regulation 10 and transitional provision
6. Amendments relating to dutyholders and competence
7. Amendments: deposit of plans and building control authorities etc
8. Amendments: applications for building control
9. Amendments: consultation on applications for building control
10. Other appeals
11. Regulator's notices
12. Amendments to regulations 20 and 20A of the 2010 Regulations
13. Amendments to relating to fire safety information
14. Amendments relating to commencement of section 33 of the Building Act 1984
15. Starting on site and commencement of work
16. Enforcement provisions
17. Other miscellaneous amendments to the 2010 Regulations

Collapse -

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19. Amendments to the Energy Performance of Buildings (England and Wales) Regulations 2012
20. Amendments to the Building Safety (Registration of Higher-Risk Buildings and Review of Decisions) (England) Regulations 2023
21. Amendments to the Building Safety (Responsible Actors Scheme and Prohibitions) Regulations 2023

Collapse -

PART 4 Transitional, supplementary and saving provisions

22. Transitional and saving provisions
23. Transitional and saving provisions: appeals
24. Transitional, supplementary and saving provisions: HRBs
25. Interpretation of this Part

Signature

Explanatory Note

The Building Regulations etc. (Amendment) (England) Regulations 2023

6. Amendments relating to dutyholders and “Competence”

6.—(1) After regulation 11 (power to dispense with or relax requirements) of the 2010 Regulations insert the following new Part—

PART 2A Dutyholders and Competence

CHAPTER 1 Client

CHAPTER 2 Principal Contractor and Principal Designer

CHAPTER 3 Competence

CHAPTER 4 Duties of dutyholders

CHAPTER 5 General



The National Occupational Standards For Fire Dampers and Smoke Control Dampers

Now that we have clear legal requirements for the inspection, and installation, of Fire Dampers and Smoke Control Dampers, what are the defined skills and knowledge for the occupation.



In 2019, the National Occupational Standards, were developed, and approved, for the Installation and Inspection of Industrial and Commercial Heating and Ventilating Systems, including “Dampers” within the standards, BSEHV05 and the BSEHV06.

However, the standards also include many other components within its scope, and a case could be made that the wording “Dampers” is not specific enough for the sectors future needs.

Systems

- supply, extract and re-circulation
- local exhaust ventilation
- low, medium and high-pressure air
- kitchen extract
- fire protection

Equipment, components and accessories

- air handling units
- fans
- dampers
- access doors
- terminal units
- laboratory fume cupboards
- storage cabinets
- ventilation hoods
- filters
- humidifiers
- metal and flexible ductwork
- measuring instruments
- support and fixings
- prefabricated modules

The National Occupational Standards For Fire Dampers and Smoke Control Dampers

In April 2023 the BSEFSD specific national occupational standards for Fire Dampers and Smoke Control Dampers were released.

It should be noted that the “Law” requires an individual to have the “skills and knowledge” to inspect and install Fire Dampers and Smoke Control Dampers.

BSE Skills Ltd, the sector skills council for Building Services Engineering, has now defined the “skills and knowledge” within the BSEFSD standards.

BSEFSD01

Install and test Fire Dampers and Smoke Control Dampers



Overview

This standard is for those who install fire damper devices to maintain compartmentation where ventilation systems (ducts) pass through compartment boundaries. This standard is also for those who install smoke control damper devices in smoke control systems to allow the release of smoke and heat and provide compartmentation protection to walls/floors/ducts where the release path is to be constrained.

The National Occupational Standards For Fire Dampers and Smoke Control Dampers

BSEFSD01

Install and test Fire Dampers and Smoke Control Dampers

Performance criteria

You **must** be able to:



There are defined “Skill” requirements under the BSEFSD standards for Fire Dampers and Smoke Control Dampers.

BSEFSD01

Install and test Fire Dampers and Smoke Control Dampers

Knowledge and understanding

You need to **know and understand:**



The sector skills council, BSE Skills Ltd, have also defined the “knowledge” requirements for Fire Dampers and Smoke Control Dampers.

The National Occupational Standards For Fire Dampers and Smoke Control Dampers

The new BSEFSD Fire Dampers and Smoke Control Dampers standards, containing the defined skills and knowledge requirements for the inspection, and installation activities, now place many within the sector in legal jeopardy.

While an individual might have a level of engineering competence, the Building Safety Act 2022 has defined legal requirements for industry competence, for an individual to meet their legal “compliance”.

Knowledge and understanding

You need to know and understand:



1. the current legislation, guidelines, policies, procedures and protocols which are relevant to your work practice and to which you must adhere
2. the scope and limitations of your own competence, responsibilities and accountability as it applies to your job role
3. specific procedures for reporting issues which are beyond your competence, responsibilities and accountability
4. the duty to report any acts or omissions that could be unsafe/detrimental to you or others

The National Occupational Standards For Fire Dampers and Smoke Control Dampers

Knowledge and understanding

You need to know and understand:



5. the principles and practice of Fire Dampers and ventilation systems
 6. the principles and practice of Smoke Control Dampers and smoke control systems
 7. the principles and practice of combined ventilation and smoke control systems
 8. the relationship of Fire Damper and Smoke Control Damper devices with other means of firestopping and alternative methods
-
12. the fire strategy, compartmentation requirements and fire penetration seal requirements relevant to the damper
-
20. the methods and techniques for adjusting safety and control features
-
21. fire safety in buildings, human behaviour and escape requirements, principles of fire chemistry and physics, including ignition and heat transfer.
-
22. behavioural competence, the ethical principles to promote safe outcomes, with respect for life, the law, environment and public good.

Product and Fire Resistance Standards For Fire Dampers and Smoke Control Dampers

The Fire resistance testing for service installations is the BS EN 1366.

The BS EN 1366 has several parts – Part 2 deals with fire dampers and Part 10 with smoke control dampers.

Fire Dampers:

Dampers tested to Fire resistance test standard: 1366-2

Product standard: **BS EN 15650**

Classification Standard: **BS EN 13501-3**

Smoke Control Dampers

Dampers tested to Fire test standard: 1366-10

Product standard: **BS EN 12101-8**

Classification Standard: **BS EN 13501-4**

DECLARATION OF PERFORMANCE

A Declaration of Performance (DoP) describes the construction product's characteristics, such as the extent to which it is airtight or fire resistant. Most construction products on the European market are required to have a DoP.

Declaration of Performance is a document issued by a manufacturer of a construction product. The issuance is a legal act required by Construction Products Regulation 305/2011 (CPR) – an obligation under certain conditions.

Who is responsible for signing the Declaration of Performance?

A manufacturer or an authorised representative. By signing full responsibility is taken for the product's compliance.

What does NPD mean on declaration of performance?

NPD stands for No Performance Determined. It can be declared on the DoP against an essential characteristic that is not relevant for the product or applicable.

DECLARATION OF PERFORMANCE

Declaration of performance

DoP/EK-EU/002



TROX[®] TECHNIK
The art of handling air

1 Product	EK-EU
Unique identification code of the product type	
2 Intended use	Smoke control damper for multi compartments
3 Manufacturer	<p>TROX GmbH Phone +49 (0)2845 2020 Fax +49 (0)2845 202265 Heinrich-Trox-Platz E-mail trox@trox.de 47504 Neukirchen-Vluyn Internet www.troxtechnik.com Germany</p>
5 System for assessment and verification of constancy of performance	System 1
6 Harmonised standard	EN 12101-8:2011
Notified body/ies	<p>The notified body 1322 - IBS - carried out the initial inspection of the manufacturing plants and of the factory production control as well as the continuous surveillance, assessment and evaluation of factory production control according to System 1 of the Construction Products Regulation and issued the certificate of constancy of performance:</p> <p>1322-CPR-74135/03</p>

7 Declared performances

Table 1

Essential characteristics: fire resistance for nominal sizes [mm]: 200 x 200 to 1500 x 800				
Supporting construction	Construction details	Installation location	Installation type	Performance class
 Solid wall	<p>$d \geq 100$ mm, $\rho \geq 500$ kg/m³, Connection to smoke extract ducts according to EN 1366-8, Connection to smoke extract ducts according to EN 1366-9, Installation openings can be reduced in size with cement-bonded panel building materials</p>	in the wall	Mortar-based installation	<p>EI 90 (v_{adm}, i^{++o}) S 1500 C_{mod} MA multi HOT 400/30</p>
 Solid ceiling slab	<p>$d \geq 150$ mm, $\rho \geq 600$ kg/m³, Connection to smoke extract ducts according to EN 1366-8, Connection to smoke extract ducts according to EN 1366-9</p>	in the ceiling	Mortar-based installation	<p>EI 120 (P_{low}, i^{++o}) S 1500 C_{mod} MA multi HOT 400/30</p>

Declaration of performance

DoP/EK-EU/002



TROX[®] TECHNIK
The art of handling air

Essential characteristics: fire resistance for nominal sizes [mm]: 200 x 200 to 1500 x 800				
Supporting construction	Construction details	Installation location	Installation type	Performance class
 Solid ceiling slab	<p>$d \geq 150$ mm, $\rho \geq 600$ kg/m³, Connection to smoke extract ducts according to EN 1366-8, Connection to smoke extract ducts according to EN 1366-9</p>	in the ceiling	Mortar-based installation	<p>EI 120 (P_{low}, i^{++o}) S 1500 C_{mod} MA multi HOT 400/30</p>
 Fire-resistant smoke extract duct	<p>$\rho \approx 500$ kg/m³, Wall thickness ≥ 35 mm, Connection to smoke extract ducts according to EN 1366-8, Connection to smoke extract ducts according to EN 1366-9</p>	in a horizontal duct	Dry mortarless installation	<p>EI 90 (v_{adm}, i^{++o}) S 1500 C_{mod} MA multi HOT 400/30</p>
 Fire-resistant smoke extract duct	<p>$\rho \approx 500$ kg/m³, Wall thickness ≥ 35 mm, Connection to smoke extract ducts according to EN 1366-8, Connection to smoke extract ducts according to EN 1366-9</p>	in a vertical duct	Dry mortarless installation	<p>EI 120 (v_{adm}, i^{++o}) S 1500 C_{mod} MA multi HOT 400/30</p>
 Fire-resistant smoke extract duct	<p>$\rho \approx 500$ kg/m³, Wall thickness ≥ 35 mm, Connection to smoke extract ducts according to EN 1366-8, Connection to smoke extract ducts according to EN 1366-9</p>	in a horizontal and on a vertical duct	Dry mortarless installation	<p>EI 90 (v_{adm}, i^{++o}) S 1500 C_{mod} MA multi HOT 400/30</p>
 Fire-resistant smoke extract duct	<p>$\rho \approx 500$ kg/m³, Wall thickness ≥ 35 mm, Connection to smoke extract ducts according to EN 1366-8, Connection to smoke extract ducts according to EN 1366-9</p>	on a horizontal duct	Dry mortarless installation	<p>EI 90 (v_{adm}, i^{++o}) S 1500 C_{mod} MA multi HOT 400/30</p>

DECLARATION OF PERFORMANCE

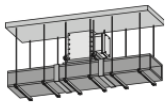
Declaration of performance

DoP/EK-EU/002



TROX®
TECHNIK
The art of handling air

Essential characteristics: fire resistance for nominal sizes [mm]: 200 × 200 to 1500 × 800

Supporting construction	Construction details	Installation location	Installation type	Performance class
 Fire-resistant smoke extract duct	$\rho = 500 \text{ kg/m}^3$, Wall thickness $\geq 35 \text{ mm}$, Connection to smoke extract ducts according to EN 1366-8, Connection to smoke extract ducts according to EN 1366-9	on top of a horizontal duct	Dry mortarless installation	EI 120 (h_{opt} , i+o) S 1500 C_{mod} MA multi HOT 400/30

Note

Construction of the duct: Smoke control dampers for multi compartments may be used with ducts that have been tested to EN 1366-9 (Single compartment smoke extraction ducts) and to EN 1366-8 (Smoke extraction ducts) and that are constructed either from materials of the same density ($\rho = 500 \text{ kg/m}^3$) as the tested material or from the same material with a greater density or thickness. Smoke extract ducts made from Promatext AD 40 or Promatext L 500 boards ($\rho = 500 \text{ kg/m}^3$) may also be used.

Table 2

Essential characteristics	Technical specification EN 12101-8: section	Performance level	(●) Requirements met/ note
Nominal activation conditions/sensitivity	4.2.1.3		● / Suitability for heating and ventilation systems (observe correct use), smoke and heat extraction system with manual release (AA) proven
Response delay	4.2.1.4	MA	● / Opening/closure within 25 minutes at fire temperature has been proven. Duration < 60 s.
Operational reliability	4.4.2.2	C_{mod}	● / 20,000 cycles, duration per cycle < 120 s
Fire resistance classification to EN 13501-4			
• Integrity (E)	4.1.1 a)	E120/E90	● / Details: Table 1
• Insulation (I)	4.1.1 b)	EI120/90	● / Details: Table 1
• Leakage (S)	4.1.1 c)	S 1500	● / pressure level 3; differential pressure: 1500 to +500 Pa
• Mechanical stability (part of E)	4.1.1 d)	E120/E90	● / Details: Table 1
• Maintenance of cross section (part of E)	4.1.1 e)	E120/E90	● / Details: Table 1

Declaration of performance

DoP/EK-EU/002



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Essential characteristics	Technical specification section of EN 12101-8	Performance level	(●) Requirements met/ note
Durability of response delay Durability of response delay • In connection with actuators and interface control units – [BE24 / BE230] BE24 (BLE24) / BE230 (BLE230) – [B24A] BE24 (BLE24) + AS-EM/EK – [B24AM] BE24 (BLE24) + AS-EM/M – [B24AS] BE24 (BLE24) + AS-EM/SIL2 – [B24BKNE] BE24 (BLE24) + BKNE230-24 – [B24C] BE24 (BLE24) + BC24 – [B24D] BE24 (BLE24) + BRM-10-F-ST – [B230D] BE230 (BLE230) + BRM-10-F	4.4.2.1	MA	● / Opening/closure within 25 minutes at fire temperature has been proven. Duration < 60 s
Durability of operational reliability • In connection with actuators and interface control units – [BE24 / BE230] BE24 (BLE24) / BE230 (BLE230) – [B24A] BE24 (BLE24) + AS-EM/EK – [B24AM] BE24 (BLE24) + AS-EM/M – [B24AS] BE24 (BLE24) + AS-EM/SIL2 – [B24BKNE] BE24 (BLE24) + BKNE230-24 – [B24C] BE24 (BLE24) + BC24 – [B24D] BE24 (BLE24) + BRM-10-F-ST – [B230D] BE230 (BLE230) + BRM-10-F	4.4.2.2	C_{mod}	● / 20,000 cycles, duration per cycle < 120 s

The essential characteristics have been proven for vertical installation with both vertical and horizontal position of the shaft.

Table 3

Essential characteristics	Technical specification	Performance level	(●) Requirements met/ note
Damper with cover grille	EN 1366-10, 5.2.3		● / can also be used to terminate openings and ducts
If a product or part of a product has been coated with a substance (impregnating agent) or with commercially available emulsion paint, the substance or the material has to meet the requirements of Regulation (EU) 2016/364 of the European Parliament and of the Council with regard to thickness or mass per unit area. • Mass per unit area $\leq 1.0 \text{ kg/m}^2$ or • Thickness $\leq 1.0 \text{ mm}$ • Impregnation (only on calcium silicate surfaces) – Promat GmbH - Impregnation 2000 – Promat GmbH - SR Impregnation – Promat GmbH - Tunnel Impregnation • Commercially available emulsion paint: (only on calcium silicate surfaces)	Regulation (EU) 016/364 of 1 July 2015 „on the classification of the reaction to fire performance of construction products pursuant to Regulation (EU) No 305/2011 of the European Parliament and of the Council“		●
Damper blade leakage	EN 1751	At least class 2	●
Damper casing leakage	EN 1751	Class C	●

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued, in accordance with regulation (EU) no. 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of TROX GmbH:

Neukirchen-Vluyn, 1 January 2017

J. Heymann
Jan Heymann • Authorised Representative • CE-marked products

BS 9999:2017



BSI Standards Publication

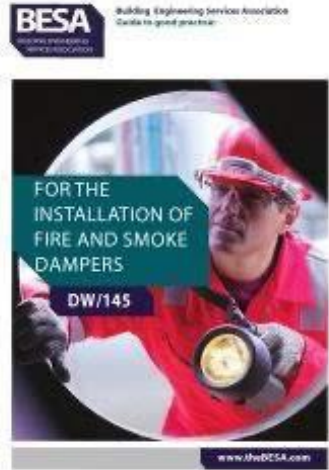
Fire safety in the design,
management and use of
buildings – Code of practice

bsi.

- **BS 9999:2017 Fire safety in the design, management and use of buildings - code of practice.**
- Fire Safety Regulations 2022
- Construction Products Regulations – CE marking shows the manufacturer has assessed the product and it meets EU safety, it indicates the product is consistent with its “Declaration of Performance” (DOP) (Change 31/12/2024)

NOTE: Not “Occupational Standards – skills and knowledge”

Some examples of codes of practise



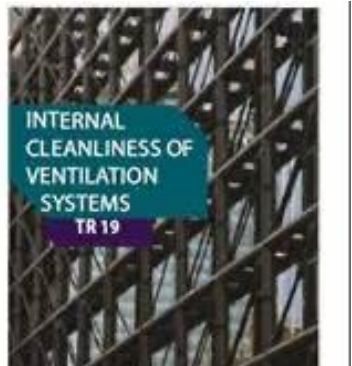
DW145

NAAD-22



Grey Book

NAAD-21

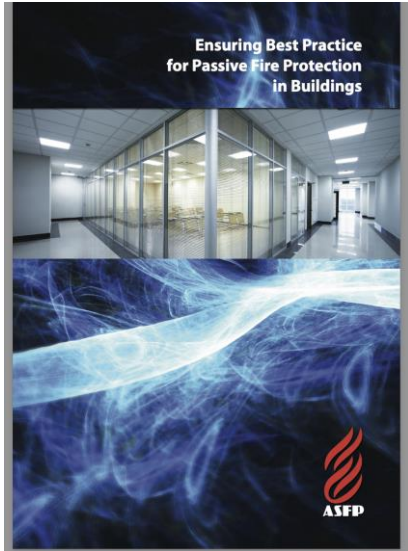


TR/19

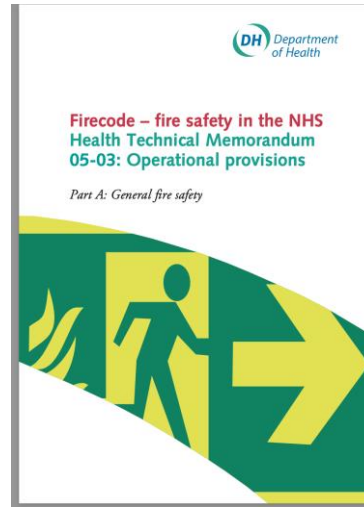
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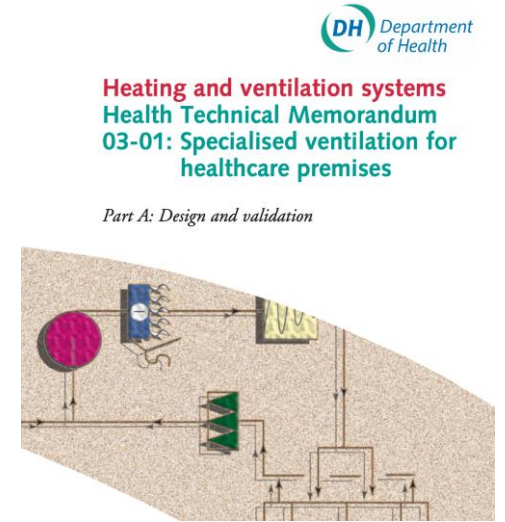
Some examples of codes of practise



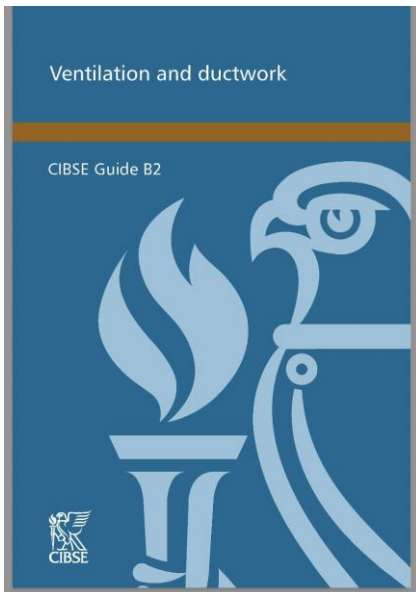
ASFP-Passive Fire



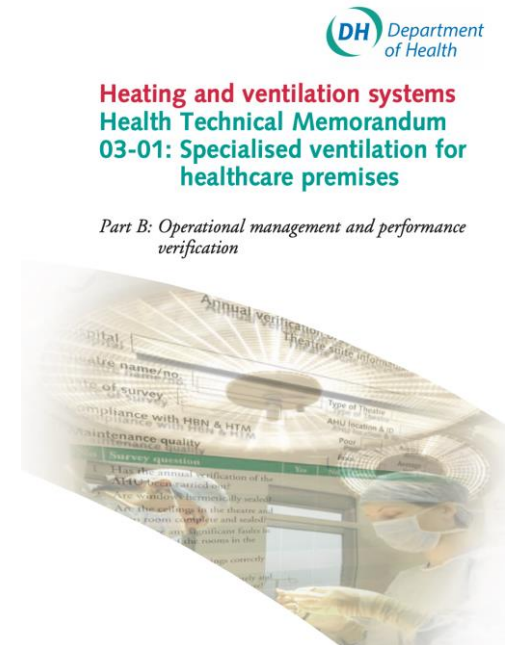
HTM-05



HTM-03-Part A



CIBSE Ventilation and Ductwork



HTM-03-Part B

Site Rules, Organisational Policies and Procedures

Knowledge and understanding

You need to know and understand:

1. the current legislation, guidelines, policies, procedures and protocols which are relevant to your work practice and to which you must adhere.



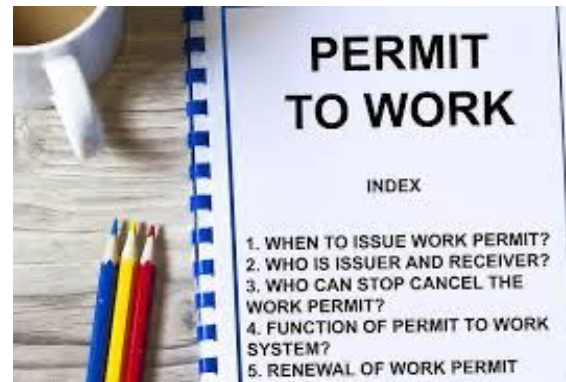
Site Induction

Method Statement Ref No: MS001

METHOD STATEMENTS					
Site Address/Location:	Start Date/Time: 8am Finish Date/Time: 4.30pm				
Personnel involved:	<table border="1"> <thead> <tr> <th>Name</th> <th>Role/Trade</th> </tr> </thead> <tbody> <tr> <td>M</td> <td></td> </tr> </tbody> </table>	Name	Role/Trade	M	
Name	Role/Trade				
M					
Personnel Competencies:	<ul style="list-style-type: none"> • Valid CPCS • Site Managers H&S • Site Managers Safety Training Scheme • Qualified • Members Safety Training • All trained 				
Regulations	All works will be carried out in accordance with current legislative requirements, reference to British standards				
Site Access/Inductions	All the above named supervisors and operatives have received a site induction from the Site Manager and will sign in at their site entrance. All personnel will be in full PPE prior to entering the site/work area.				



Company Procedures



Site Rules, Organisational Policies and Procedures

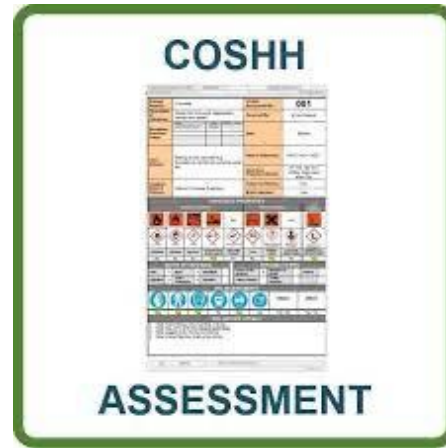
Knowledge and understanding

You need to know and understand:

1.17. the organisational procedures for confirming, before work starts, that the work location and work area can be accessed safely and has been checked for the risk to other personnel on the site, and for taking appropriate action if a risk is present

Completed by:	Small Construction Project - Example	Date of Assessment:	02/10/2020		
Work activity being assessed:	Name of Employer	Supporting Information:	Health and Safety at Work Act (1974)		
Persons at risk:	Brief Description of the Main processes of the project				
Persons at Risk:	Site Operatives, Visitors, General Public				
Significant Hazards	Key Task(s) & Potential Risks	Controlled and Residual Risk (CR)	Risk Control Measures	Residual Risk (R)	Continuous Improvement Actions
Slips & Trips	Risk of slips and trips from wet/dry work areas and poorly maintained surfaces	CR: 12	Housekeeping to be maintained at a high standard throughout the site at all times. Waste materials should be disposed of efficiently. Suitable safety signs with slip signs to be used at all times. Additionally lighting to be provided where necessary to ensure good visibility. Scaffolding must be installed and inspected by a competent contractor.	R: 3	
Work at Height - Scaffolding	Risk of falls from height, resulting in serious injury/fatality. Scaffolding to be erected for access to door systems on external side of structure - rise of falls: None significant height	CR: 18	Scaffolding must be installed every 7 days to ensure structural integrity. Scaffolding structure must not be manipulated or changed without a specialist assessment/manager. Any abnormalities/changes to scaffold to be reported immediately to site supervisor.	R: 3	
Use of Mobile Elevated Working	MEWP to be used to access high level of work where scaffold is inappropriate	CR: 18	Only trained & competent operators (PPE) to use MEWP. Bottom man must wear operator at all times.	R: 3	

Risk Assessment



SAFE SYSTEM OF WORK PLAN (SSWP)		
CONSTRUCTION FORM 2 (HOUSE BUILDING) Plan No. []		
Job Details	Resources Required	Emergency Details
Employer Name: _____	Worker Skills: _____	Contact Names & Tel Nos:
Supervisor/Lead Person: _____	Number of Workers: _____	1. _____
Specific Location: _____	Plant/Equipment: _____	2. _____
Description of Works: _____	Hazardous Materials: _____	3. _____
Start Date: _____		First Aider: _____
NOTE: A new SSWP must be completed when the task or the environment changes.		Location of First Aid Box: _____
WORK PERMITS REQUIRED		
Hot <input type="checkbox"/> Electricity <input type="checkbox"/> Excavation <input type="checkbox"/>		
Confined Space <input type="checkbox"/> CCR <input type="checkbox"/>		
Marine Structures <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>		
Before Works Starts the following MUST be in place		





Question Paper