

12. Health and safety principles and coverage

12.1 The main requirements of key health and safety legislation applicable to engineering activities

PowerPoint 1: Health and safety in engineering



PEOPLE



PLANT



PROCESSES



A SAFER
TOMORROW

SAFE PEOPLE
PRODUCTIVE WORKPLACES
STRONGER INDUSTRIES



HEALTH
AND SAFETY
BUILDS A
**BRIGHTER
TOMORROW**

Objectives

By the end of this session, learners should be able to:



identify the need for health and safety legislation for protecting the workforce and members of the public while working in the engineering and manufacturing industries



explain why there is legislation to cover every aspect of the workplace



describe how such legislation keeps people safe in the workplace



define who is responsible for compliance with current regulations and legislation



appreciate health and safety culture, and be aware of the availability of training and information.



SAFE
PEOPLE
PRODUCTIVE
WORKPLACES
**STRONGER
INDUSTRIES**

Why is there a need for health and safety legislation?



- Health and safety legislation is wholly about **promoting good practice**.



- Health and safety ensures that the risk of a serious incident is minimised within an organisation.



- On average, over **200 people** are killed a year in an accident at work and over **1 million** are injured.



SAFE
PEOPLE
**STRONGER
INDUSTRIES**



PROTECT
PEOPLE



REDUCE
RISK



SAFE
WORKPLACES



A HEALTHIER
FUTURE

Good health and safety practice
protects **people, organisations and society**.

Health and safety statistics

The Health and Safety Executive (HSE) statistics for Great Britain (2020/2021, www.hse.gov.uk/statistics/) showed that:



142

workers were killed at work.



441,000

working people sustained an injury at work.



51,211

injuries to employees were reported under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR).



ACCURATE DATA DRIVES SAFER WORKPLACES



**WORK SAFER
LIVE BETTER**



**HEALTHY
PEOPLE**



**PRODUCTIVE
INDUSTRIES**



**STRONGER
TOMORROW**



Health and safety publications

Health and safety publications can be divided into two distinct groups: **mandatory** (must be followed by law) and **advisory** (guidance which is recommended but not legally enforceable).



Acts of Parliament

- **Acts of Parliament** are also known as **statutory legislation**. Such acts create a new law or change an existing one. Their implementation is the responsibility of a specific government department. In the case of health and safety, this is the HSE. Acts are **legally enforceable** and must be followed to **avoid prosecution**.



Non-statutory legislation

- **Non-statutory legislation** refers to rules, procedures and administrative codes set by authorities or government agencies to achieve a particular objective.



LEGISLATION SETS THE STANDARD.
GOOD PRACTICE KEEPS PEOPLE SAFE.



Health and Safety at Work Act (HASAWA) 1974

The main objectives of HASAWA are:



- the health and safety of **all people** at work



- the protection of others from **risks** at work



- the control of dangerous **substances**



- the control of dangerous **emissions**.



The full act can be found here: [Health and Safety at Work Act 1974 \(legislation.gov.uk\)](https://www.legislation.gov.uk)



SAFE
WORKPLACES
**STRONGER
INDUSTRIES**

HEALTH
AND SAFETY
BENEFITS
EVERYONE

LEGISLATION TODAY
SAFER TOMORROW



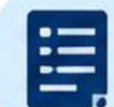
HASAWA



- The act makes health, safety and welfare **everyone's** responsibility.



- Employers have a responsibility to **provide personal protective equipment** (PPE) (eg hard hats, gloves, eye protection, safety footwear etc).



- A health and safety policy must be produced if a company employs **five** or more employees.



THE RIGHT
PROTECTION
A SAFER
TOMORROW

PEOPLE
PROCESSES
A SAFER
WORKPLACE



HEALTH AND SAFETY IS A SHARED RESPONSIBILITY

SAFE PEOPLE. STRONGER INDUSTRIES.



Regulations governing **engineering** and **manufacturing**

Under HASAWA, a range of regulations apply to the engineering and manufacturing sectors, and you should be aware of these. Health and safety legislation has been developed in an attempt to cover every relevant aspect of work. The list continues on the next slide.



Management of Health and Safety at Work Regulations (MHSWR) 1999



Provision and Use of Work Equipment Regulations (PUWER) 1998



Personal Protective Equipment at Work Regulations 1992



Control of Noise at Work Regulations 2005



Manual Handling Operations Regulations (MHOR) 1992



KNOW THE REGULATIONS. BUILD A SAFER INDUSTRY.



LEGISLATION
SUPPORTS
SAFER
INDUSTRIES





Regulations governing **engineering and manufacturing**



- **Lifting Operations and Lifting Equipment Regulations (LOLER)** 1998



- **Work at Height Regulations (WAHR)** 2005



- **Electricity at Work Regulations**



- **Control of Electromagnetic Fields at Work Regulations (CEMFAW)** 2016



- **Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)** 2013



- **Control of Substances Hazardous to Health Regulations (COSHH)** 2002



SAME REGULATIONS. SAFER PEOPLE. STRONGER INDUSTRIES.



KNOW
THE REGULATIONS.
**BUILD A SAFER
INDUSTRY.**

COMPLIANCE
PROTECTS
PEOPLE,
BUSINESSES
AND
COMMUNITIES.





MHSWR – Management of Health and Safety at Work Regulations 1999

MHSWR (1999) was introduced to reinforce HASAWA (1974). The regulations explicitly outline what employers are required to do to manage health and safety, and they apply to every work activity. The regulations place a set of duties on employers and employees to maintain a safe and healthy workplace.



MANAGE RISK.
PROTECT PEOPLE.
CREATE SAFER
WORKPLACES.

Employers must:



- undertake **risk assessments**



- appoint a **competent person** to oversee health and safety



- provide health and safety **training**.

Key point:



These duties help **prevent accidents, protect people** and ensure a **healthy working environment** for everyone.



HEALTH AND SAFETY MANAGEMENT BENEFITS **EVERYONE**.

Employees must:



- 

- 

- 

-
- A close-up, high-angle shot of a person wearing a bright yellow safety jacket with reflective silver stripes. They are sitting at a wooden table, writing in a spiral-bound notebook with a pen. Their hands are visible, and the notebook shows a grid-like form. On the table, next to the notebook, are a pair of black safety glasses, a black smartphone, and a white hard hat with black ventilation slots. The scene is lit with warm, golden light, suggesting an indoor setting with large windows.



City & Guilds





PUWER – Provision and Use of Work Equipment Regulations 1998

PUWER places duties on people and companies who own, operate or have control over work equipment. For example, the regulations require that equipment provided for use at work is:



- used by persons who are **trained and competent**



- **effectively guarded** to protect the user



- **maintained**, and full records kept.



A guide to **PUWER** can be found here:
[Provision and Use of Work Equipment
Regulations 1998 \(PUWER\) \(hse.gov.uk\)](https://www.hse.gov.uk/PUWER/)



SAFE
EQUIPMENT.
SKILLED PEOPLE.
**PRODUCTIVE
INDUSTRIES.**

FOLLOW
REGULATIONS.
KEEP PEOPLE
SAFE.



PROPER EQUIPMENT USE KEEPS PEOPLE SAFE AT WORK.



POWER – Requirements for work equipment

These regulations require that equipment provided for use at work is:



- **suitable** for the intended use



- **safe for use**, maintained in a safe condition and inspected to ensure it is correctly installed and does not subsequently deteriorate



- used only by people who have received **adequate information, instruction and training**



- accompanied by **suitable health and safety measures**, such as protective devices and controls – these will normally include guarding, emergency stop devices, adequate means of isolation from sources of energy, clearly visible markings and warning devices



- used in accordance with **specific requirements**.



RIGHT EQUIPMENT. PROPER USE. **SAFER WORKPLACES.**



**SAFE
EQUIPMENT.
PROTECTS
PEOPLE.**



Personal Protective Equipment at Work Regulations

Wherever there are risks to health and safety that cannot be adequately controlled in other ways, the PPE regulations require PPE to be supplied by the employer to the employee. The regulations also require that PPE is:



- **properly assessed** before use to make sure it is fit for purpose



- **maintained and stored** properly



- **provided with instructions** on how to use it safely



- **used correctly** by employees.



A guide to these regulations can be found at:
[Personal Protective Equipment at Work Regulations from 6 April 2022 \(hse.gov.uk\)](https://www.hse.gov.uk/ppe/)



PPE
REDUCES RISK.
PROTECTS PEOPLE.
**KEEPS WORKPLACES
SAFER.**

USE THE
RIGHT PPE.
FOLLOW
INSTRUCTIONS.
STAY SAFE.



PEOPLE PROTECTED. **SAFER WORKPLACES.** STRONGER INDUSTRIES.



Examples of common PPE



PPE helps
reduce risk,
protects people
and keeps
workplaces
safer.

Use the right
PPE for the task.



Head and hearing
protection



Torso
protection



Foot
protection



Eye and face
protection



Respiratory
protection



Hand
protection

SAFE PEOPLE.
STRONGER
INDUSTRIES.



PROPER PPE. A SAFER TOMORROW.



Control of Noise at Work **Regulations**

The aim of these regulations is to ensure that workers' hearing is protected from excessive noise at their place of work, which could cause them to lose their hearing and/or to suffer from tinnitus (permanent ringing in the ears).



- Employers must provide hearing protection and hearing protection zones if employees are exposed to daily or weekly noise of **85 decibels and above**.



- The level at which employers must **assess** the risk to workers' health and provide them with information and training is **80 decibels**.



The full regulations can be found here:
[Control of Noise at Work Regulations 2005](https://www.legislation.gov.uk)
([legislation.gov.uk](https://www.legislation.gov.uk))



HEAR
TODAY.
**WORK
TOMORROW.**

CONTROL
NOISE.
PROTECT
PEOPLE.



HEARING PROTECTION **KEEPS PEOPLE IN WORK.**



MHOR – Manual Handling Operations Regulations 1992 (amended 2002)

MHOR 1992 was amended in 2002. The regulations cover the following activities: lifting, lowering, pushing, pulling, moving or carrying a load.



- Individuals should conduct a **risk assessment** first.



- Lifting operations should be **planned in advance**.



- Employees have a responsibility to **use mechanical aids** as required in order to avoid injury.



The regulations can be found in full here:
[Manual Handling Operations Regulations 1992 \(legislation.gov.uk\)](https://www.legislation.gov.uk)



PLAN.
ASSESS.
USE THE
RIGHT AIDS.
AVOID INJURY.

SAFER
PEOPLE.
STRONGER
INDUSTRIES.



SAFE MANUAL HANDLING. **HEALTHY WORKPLACES.**



LOLER – Lifting Operations and Lifting Equipment Regulations 1998

Employers are responsible for any lifting equipment they use.



- All lifting operations involving lifting equipment must be properly planned by a **competent person**, appropriately supervised and carried out in a safe manner.



- Lifting equipment is work equipment, so PUWER applies here:
 - inspection, maintenance and records kept
 - statutory periodic 'thorough examination'.



[Lifting Operations and Lifting Equipment Regulations 1998 \(legislation.gov.uk\)](https://www.legislation.gov.uk)



LIFT SAFELY. PLAN AHEAD. PROTECT PEOPLE.



**PLAN
LIFT
WORK
SAFELY.**

PROPER
PLANNING.
COMPETENT
PEOPLE.
SAFER
WORKPLACES.



WAHR 2005

Working at height means working in any location where, if there were no precautions in place, a person could fall a distance liable to cause personal injury.

The following will mitigate against falling from height:



- guards and fall arresters



- harnesses



- planning of work



- risk assessment



- equipment inspections.



[Work at Height
Regulations 2005
\(legislation.gov.uk\)](https://legislation.gov.uk)



**PLAN.
PROTECT.
PREVENT
FALLS.**

WORK AT
HEIGHT SAFELY.
EVERYONE
GOES HOME.



RISK ASSESS. PLAN. USE THE RIGHT EQUIPMENT. STAY SAFE.



Electricity at Work **Regulations**

The Electricity at Work Regulations apply to all aspects of the use of electricity within the workplace. Employers must:



- have electrical systems constructed in a way that **prevents danger**.



- maintain electrical systems as necessary to **prevent danger** (including a five year fixed installation inspection).



- carry out work on electrical systems in a way that **prevents danger**.



[Electricity at Work Regulations 1989
\(\[legislation.gov.uk\]\(https://www.legislation.gov.uk\)\)](https://www.legislation.gov.uk)



**SAFE
ELECTRICAL
SYSTEMS.
SAFER
PEOPLE.**

CHECK.
MAINTAIN.
PREVENT.
STAY SAFE.



ELECTRICAL SAFETY KEEPS WORKPLACES SAFE.



Electricity at Work **Regulations**

Under the Electricity at Work Regulations, employees should only work on or with electrical equipment if they have suitable:



- training



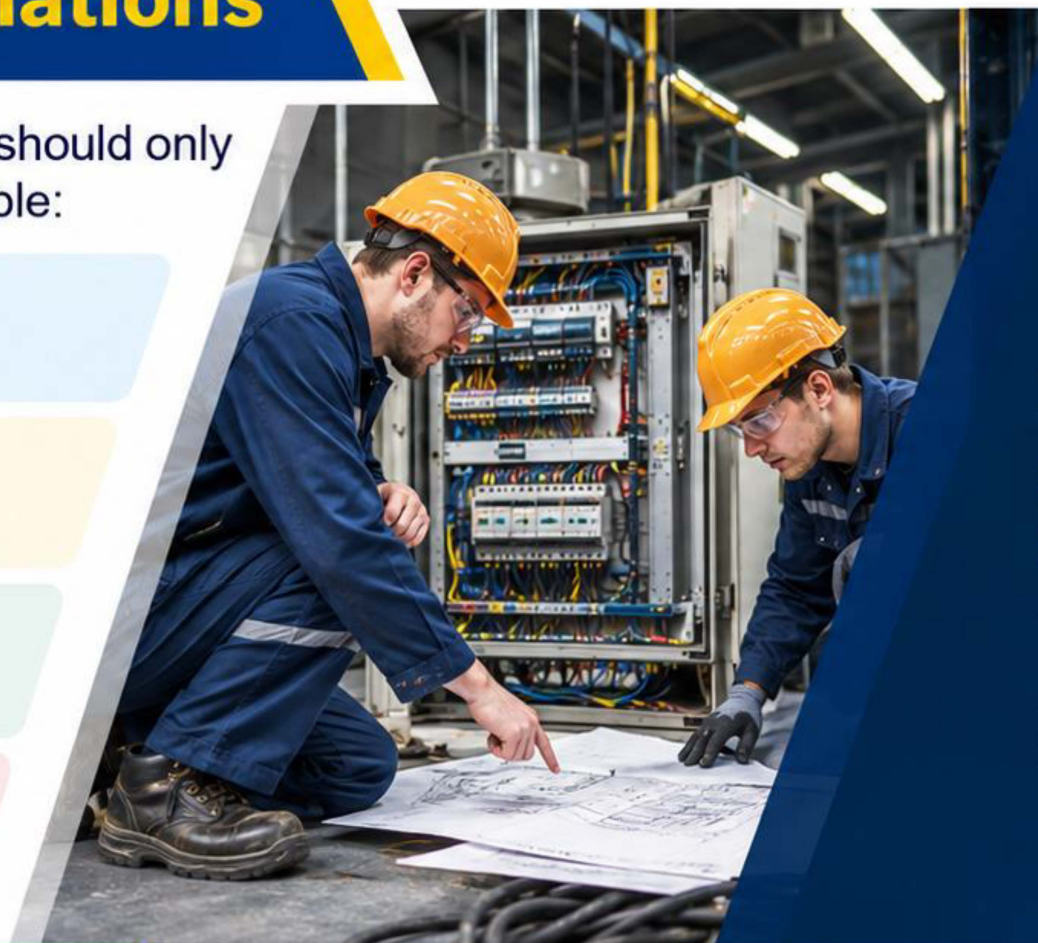
- knowledge



- experience



- supervision.



COMPETENT
PEOPLE.
**SAFE
ELECTRICAL
WORK.**

TRAINED.
KNOWLEDGEABLE.
EXPERIENCED.
SUPERVISED.



COMPETENCE **KEEPS PEOPLE SAFE** AT WORK.



CEMFAW – Control of Electromagnetic Fields at Work Regulations 2016



The employer must make a **suitable and sufficient assessment** of the levels of electromagnetic fields (EMFs) to which employees may be exposed. The CEMFAW regulations contain a schedule which introduces EMF limits, explains the effects of EMFs and provides details of safety conditions which must be met.



EMFs such as **x-rays**, **gamma rays** and higher energy **ultraviolet (UV) rays** are emitted by some engineering testing equipment, so knowledge of CEMFAW is important.



[Control of Electromagnetic Fields at Work Regulations 2016 \(legislation.gov.uk\)](https://www.legislation.gov.uk)



ASSESS
EXPOSURE.
UNDERSTAND
RISKS.
WORK SAFELY.

KNOW
EMFs.
STAY SAFE
AT WORK.



A SAFER, HEALTHIER WORKPLACE FOR A **BRIGHTER TOMORROW.**



RIDDOR

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013



RIDDOR is a piece of health and safety legislation that was updated in 2013.

This introduced significant changes to the previous reporting requirements in order to simplify them.



In 2020/2021, **51,211** injuries to employees were reported under RIDDOR.



[Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 \(hse.gov.uk\)](https://www.hse.gov.uk/riddor/)



REPORT
SERIOUS
INCIDENTS.
**KEEP
PEOPLE SAFE.**

REPORT
INJURIES.
PREVENT
FURTHER HARM.



A SAFER WORKPLACE THROUGH **AWARENESS AND REPORTING.**



RIDDOR

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013

RIDDOR applies to every workplace and puts duties on employers, the self-employed and people in control of work premises (the 'responsible person') to report and keep records of:



- **work-related accidents** which cause death or serious injuries (reportable injuries).



- certain '**dangerous occurrences**' (incidents with the potential to cause harm).



- diagnosed cases of certain **industrial diseases**.



[Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 \(legislation.gov.uk\)](https://www.legislation.gov.uk)



**REPORT
INCIDENTS.
PREVENT
HARM.
SAVE LIVES.**

SEE IT.
REPORT IT.
MAKE
WORKPLACES
SAFER.



REPORTING KEEPS PEOPLE SAFE.



COSHH

Control of Substances Hazardous to Health Regulations 2002

COSHH is a set of regulations put in place to protect workers from ill health when working with specific substances and materials. Training is provided where necessary. A breach of COSHH by an employer or employee is a crime, punishable by an unlimited fine. The regulations:



- protect against illness caused by **hazardous substances**



- help to **prevent, control and monitor** exposure to hazardous substances



- stipulate the **risk assessment** of working practices



- describe **precautions**.



[Control of Substances Hazardous to Health Regulations 2002 \(legislation.gov.uk\)](https://www.legislation.gov.uk)



CONTROL
EXPOSURE.
PROTECT
HEALTH.
WORK SAFELY.

ASSESS.
PREVENT.
MONITOR.
STAY SAFE.



SAFE SUBSTANCES. HEALTHY PEOPLE. STRONGER WORKPLACES.



Health and safety culture



An organisation's **culture** can have as big an influence on safety outcomes as the safety management system. 'Safety culture' is a subset of the overall company culture.



Training is provided where necessary.

In *Organising for Safety* (1993) the HSE described safety culture as:

'the product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety management. Organisations with a positive safety culture are characterised by communications founded on mutual trust, shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures.'



People & values

Attitudes, perceptions and commitment to safety



Communication & trust

Open communication and mutual trust



Behaviour & competence

Competence and safe working practices



Positive safety culture

A shared understanding of the importance of safety



Safer outcomes

Fewer incidents, healthier people, stronger workplaces



**POSITIVE
CULTURE.
SHARED
RESPONSIBILITY.
SAFER
WORKPLACE.**

PEOPLE
MAKE SAFETY
HAPPEN.



A STRONG SAFETY CULTURE BUILDS BRIGHTER FUTURES.



Health and safety **training** and information



Regular **training** is a key aspect of maintaining and fostering a health and safety culture.

It ensures all employees understand the health and safety requirements of their workplace and how to work safely and without risk to their health.



All organisations should ensure that health and safety **information** is easily available in the workplace.



A further source of information is of course the HSE: <https://hse.gov.uk/>.



TRAIN
INFORM
STAY SAFE
TOGETHER.

KNOW
MORE.
WORK
SAFER.



INVEST IN PEOPLE. **BUILD A SAFER TOMORROW.**



Recap

What you need to remember

In this session we have covered the key pieces of legislation that govern the engineering and manufacturing industries. You do not need to know every detail of the law, but it is important that you clearly understand:

-  **1** The main requirements of the key legislation.
-  **2** How to access the regulations.
-  **3** How the legislation affects your activities in the workplace, and how it keeps you safe.
-  **4** Who is responsible for compliance with the legislation.
-  **5** How a 'safety culture' and regular training can protect everyone's health and safety in the workplace.



**KNOW
THE LAW.
WORK SAFELY.
MAKE A
DIFFERENCE.**

SAFE
PEOPLE
STRONGER
WORKPLACES.



KNOWLEDGE TODAY. **SAFER TOMORROW.**

Thank you

for your time and participation
today.



See you on the
next lesson!



LEARNING TODAY. **SAFER TOMORROWS.**