

Unit 1: Health, Safety and Welfare in Construction and the Built Environment

NQF Level 3: BTEC National

Guided learning hours: 60

Unit abstract

Health, safety and welfare are of paramount importance to any organisation operating within the construction industry. The Health and Safety Executive's annual league table of fatal injuries shows the construction sector consistently tops the table.

The UK and European Union have created a legal framework for prosecuting employers and employees who disregard health, safety and welfare legislation.

To reduce the significant accident record in construction, employers must formulate workplace safety policies. These must address the hazards, risks, policies, the organisational and control arrangements required to promote health, safety and welfare, and be communicated to all parties.

The unit will provide learners with knowledge and understanding of the legal framework relating to employer and employee responsibilities. An understanding of the principal causes of typical accidents and the associated costs of these will be developed, and learners will explore the methods used to identify workplace hazards in construction, together with the strategies used to control them including the use of risk assessments and monitoring and review procedures. Learners will become familiar with the roles and responsibilities of personnel and with the procedures required following the occurrence of accidents.

Learning outcomes

On completion of this unit a learner should:

- 1 Understand the general and specific responsibilities both of employers and employees under current health, safety and welfare legislation
- 2 Be able to identify workplace hazards, persons who may be affected by such hazards, and the potential consequences of accidents
- 3 Know how to use risk assessments in appropriate formats
- 4 Be able to use workplace health and safety policies to recommend control measures, reduce risk and meet legal requirements
- 5 Understand own role in accident recording and reporting procedures.

Unit content

1 Understand the general and specific responsibilities both of employers and employees under current health, safety and welfare legislation

Roles and responsibilities of: client; employers; employees; main contractor; sub-contractors; Health and Safety Executive (HSE); local authority; planning supervisor

Legislation (current versions of): relevant provisions of Health and Safety at Work Act 1974; Construction Design and Management Regulations 1994; Work at Heights Regulations 2005; Management of Health and Safety at Work Regulations 1999; Construction Health, Safety and Welfare Regulations 1996

2 Be able to identify workplace hazards, persons who may be affected by such hazards, and the potential consequences of accidents

Hazards and risks: difference between hazard and risk; identification of hazards; possible effects of changes to work practices; risk rating of hazards; potential to cause harm

Environmental aspects: workplace environment; confined spaces; access; working at height

Persons who may be affected: employees; site visitors; general public

Methods of identification: direct observation of work environment; use of accident data, checklists and method statements; regular safety inspections

Accident data: key factors (gender, age, type of injury, type of injury including minor, major and fatal, location, occupation, cause of accident); principal major causes of accidents and fatalities; demographics; UK and European safety statistics; observable trends

Consequences of accidents: human, moral, financial; direct and hidden costs; insured and uninsured costs

3 Know how to use risk assessments in appropriate formats

Principles: employer obligations under Management of Health and Safety at Work Regulations 1999; development of safe system of work; minimisation of risk to workers and others affected by work; concept of what is 'reasonably practicable' in terms of cost and other design goals; advantages of using a standard format

Five steps to risk assessment: identification of hazards in the proposed work activity or the adjacent area; consideration of who might be harmed and how; evaluation of risks and whether existing requirements are satisfactory or whether more must be done to reduce or eliminate risks; recording of findings; review of risk assessments and revision where necessary

4 Be able to use workplace health and safety policies to recommend control measures, reduce risk and meet legal requirements

Policies: general workplace health and safety; non-smoking; drugs and alcohol

Arrangements for implementation: allocation of roles and responsibilities; organisation under terms of general workplace health and safety policy

Procedures: monitoring, review and inspection; use of permits and method statements; induction and training; good site management procedures

Control measures: for workplace procedures; hazardous substances; lifting and manual handling; working at height; working in excavations; site traffic and plant; contaminated ground

Legal issues: duty of everyone to conform with health, safety and welfare legislation and workplace policies; consequences for individuals and employers (eg corporate manslaughter, fines, imprisonment); procedures to be followed after an accident or incident

5 Understand own role in accident recording and reporting procedures

Principles: why employers keep safety records of accidents, incidents, near misses and emergencies; responsibilities of competent persons, individual responsibility to self and others

Recording and reporting: current regulations on recording and reporting accidents, diseases, near misses and dangerous occurrences; procedures to be followed after an accident; individual role and responsibility

Grading grid

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describe the level of achievement required to pass this unit.

Grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
<p>P1 identify and describe the roles and responsibilities of the persons responsible for health, safety and welfare on a construction project</p> <p>P2 identify three main pieces of health, safety and welfare legislation relevant to the construction and built environment sector and describe the legal duties of employees and employers in terms of such legislation</p>	<p>M1 explain how the members of the building team interact in terms of their health, safety and welfare roles and responsibilities</p>	
<p>P3 identify and describe a range of hazards present in a given workplace situation, the persons who may be at risk, and the possible consequences for such persons</p> <p>P4 identify and describe the main principles and features of a typical risk assessment for a given workplace situation</p>	<p>M2 perform a typical risk assessment for a given workplace situation using a suitable format</p>	<p>D1 justify the contents of a risk assessment, in terms of available accident data and what is 'reasonably practicable'</p>

Grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
<p>P5 select control measures for a given workplace situation to reduce risks and meet legal requirements</p> <p>P6 identify and describe the role of the individual in accident recording and reporting procedures.</p>	<p>M3 explain how collecting accurate data and information on accidents and incidents contributes to improvements in health, safety and welfare in the workplace.</p>	<p>D2 evaluate a provided accident report and suggest improvements that could be made to workplace systems in the future to avoid a recurrence.</p>

Essential guidance for tutors

Delivery

Tutors delivering this unit have opportunities to use a wide range of techniques. Lectures, discussions, seminar presentations, site visits, supervised practicals, research using the internet and/or library resources and the use of personal and/or industrial experience are all suitable. Delivery should stimulate, motivate, educate and enthuse learners. Visiting expert speakers could add to the relevance of the subject.

Early in the delivery of the unit learners should be made aware of the importance of good health, safety and welfare practice from inception to completion of every construction project. It is essential to embed health, safety and welfare learning in the delivery of all construction design and production units. Study of the unit is dependent on a knowledge and understanding of construction methods to enable learners to identify and appraise safety hazards. Learners also need to appreciate the importance of effective communication between members of the site construction team in minimising safety risks.

Case studies and site visits can play an important role in contextualising the key aspects of the unit content, including the identification and implications of workplace hazards. Developing a working relationship with a local construction contractor or with the learners' employers will provide a valuable delivery vehicle for providing factual evidence in support of the grading criteria. This will also provide industry standard examples of health, safety and welfare practice and documentation to assist the learner with the risk assessment process.

Examples from the learners' own employers could be brought into the learning environment and used to enhance vocational relevance. Health and safety videos and DVDs are a valuable source of visual information, particularly for hazard identification and risk assessment. Further enhancement of the learning process could be achieved by seeking specialised input from current practitioners. Group working may be of some value in the analysis of health, safety and welfare policies to identify responsibilities and roles enabling those learners working in construction to share resources.

Valuable guidance is given in the Association of Colleges *Best Practice Guide to Incorporating Health and Safety into the Construction Curriculum* and this should form the basis of the teaching strategy adopted for health, safety and welfare in this unit and in the qualification as a whole.

Much useful teaching material is available in *Be a Safe Learner: Aspects of Health and Safety*, available from the DfES Standards Unit, at standards.unit@dfes.gsi.gov.uk and www.successforall.gov.uk.

Group activities are permissible, but tutors will need to ensure that individual learners are provided with equal experiential and assessment opportunities.

Health, safety and welfare issues are paramount and should be strictly reinforced through close supervision of all workshops and activity areas, and risk assessments must be undertaken prior to practical activities. Centres are advised to read the *Delivery approach* section on page 24, and *Annexe G: Provision and Use of Work Equipment Regulations 1998 (PUWER)*.

Assessment

The evidence requirements for pass, merit and distinction grades are shown in the grading grid. Evidence for this unit may be gathered from a variety of sources, including well-planned investigative assignments, case studies or reports of practical assignments.

There are many suitable forms of assessment that could be employed. Some examples of possible assessment approaches are suggested below. However, these are not intended to be either prescriptive or restrictive, and are provided as an illustration of the alternative forms of assessment evidence that would be acceptable.

Some criteria could be assessed directly by the tutor during practical activities. If this approach is used, suitable evidence from guided activities would be observation records or witness statements. Guidance on the use of these is provided on the Edexcel website. General guidance on the design of suitable assignments is available on page 19 of this specification.

The structure of the unit suggests that the grading criteria may be fully addressed by using three assignments. The first of these would cover criteria P1, P2 and M1, the second would cover criteria P3, P4, M2 and D1 and the third would cover criteria P5, P6, M3 and D2.

To achieve a pass grade learners must meet the six pass criteria listed in the grading grid.

For P1, learners must identify and describe the roles and responsibilities of the persons responsible for health, safety and welfare on a construction project. This demands a knowledge of the key personnel involved from inception to completion of a typical project and their influence on all aspects of health, safety and welfare. To contextualise this area of study, learners should be provided with access to relevant information from an actual construction project or a realistic scenario.

For P2, learners are required to identify three main pieces of health, safety and welfare legislation relevant to the construction and built environment sector and describe the legal duties of employees and employers in terms of such legislation. Learners must identify and describe three of the five pieces of legislation stated in the content. One of these must be the HASAWA 1974 and learners should be encouraged to access this document through the internet. Only two sections of the document are required to answer this criterion: the legal duties of the employer, and the legal duties of the employees. One way to approach this is for learners to identify legal obligations that have been or are being ignored by an employer.

For P3, learners have to identify and describe a range of hazards present in a given workplace situation, the persons who may be at risk, and the possible consequences for such persons. Learners must be provided with access to either an actual construction project or a realistic scenario that might include supporting visual material such as photographs, video or DVD. Case studies taken from the construction news media will bring a fresh and factual approach to addressing the task, as will interviews with others who are working in construction. Learners must identify workplace hazards, the persons

put at risk as a result of such hazards, and the possible consequences for those persons if the hazards are ignored. This is an ideal workplace observation exercise in which the learners can identify real hazards with a potential to harm. The use of secondary sources is permitted where this is not possible.

For P4, learners are required to identify and describe the main principles and features of a typical risk assessment for a given workplace situation. A standard tabular format for risk assessments will provide a suitable basis for the required evidence. There is no requirement for learners to produce their own risk assessments at this stage, and examples drawn from the construction industry will be sufficient. The use of the 'Five Steps to Risk Assessment' is recommended as HSE guidance, but is not mandatory. The method used must however be coherent and consistent.

For P5, learners have to select control measures for a given workplace situation to reduce risks and meet legal requirements. Learners must select control measures to reduce identified risks, which may be categorised as low, medium or high. This may be linked to the risk assessment carried out for M2, but this cannot be mandatory as learners may not have achieved criterion M2. It is therefore acceptable for learners to work from alternative scenarios.

For P6, learners should identify and describe the role of the individual in accident recording and reporting procedures. This must include the procedures used to record and report accidents, dangerous occurrences and near misses to a supervisor or manager. There is no requirement to analyse the procedures at this stage.

To achieve a merit grade learners must meet all of the pass grade criteria and the three merit grade criteria.

For M1, learners have to explain how the members of the building team interact in terms of their health, safety and welfare roles and responsibilities. Learners must expand upon the issues addressed in the grid for P1 and P2 to explain how those charged with health, safety and welfare responsibilities interact to discharge their legal responsibilities. The important issues are who reports to whom, who is responsible for whom, and who does what. There must be some explanation of the hierarchy of responsibilities and this must include reference to the personnel mentioned in the content of learning outcome 1.

For M2, learners must perform a typical risk assessment for a given workplace situation using a suitable format. This should expand upon the issues addressed in the grid for P3 and P4 and produce a typical risk assessment for either a real-life construction situation or a realistic scenario. It is expected that learners will use the format described in P4.

For M3, learners are required to explain how the collection of accurate data and information on accidents and incidents contributes to improvements in health, safety and welfare in the workplace. Learners must use health and safety statistics to explain how future health, safety and welfare legislation and provision can be influenced by accurate data relating to previous accidents and incidents. Some or all of the following should be discussed: gender, age, type of injury (minor, major, fatal), location, occupation and cause of accident. Learners should use the data to show how keeping accurate records can lead to noticeable improvements.

To achieve a distinction grade learners must meet all of the pass and merit grade criteria **and** the two distinction grade criteria.

For D1, learners have to justify the contents of a risk assessment, for example that produced for M2, in terms of available accident data and what is ‘reasonably practicable’. Learners must expand upon the risk assessment to justify the decisions made in terms of the consequences of risk, as indicated by accident data, and what is reasonably practicable. This should be based on a clear definition of what is meant by ‘reasonably practicable’.

For D2, learners must be able to evaluate a provided accident report and suggest improvements that could be made to workplace systems in the future to avoid a recurrence. Learners must evaluate a real or simulated accident report and suggest how the workplace to which the report refers could be improved in health, safety and welfare terms in light of the report.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit builds upon Unit 2: Investigating Health, Safety and Welfare in Construction, from the BTEC Firsts in Construction, and informs every other unit in the Edexcel BTEC National qualifications. It also offers a sound basis for the study of health, safety and welfare, at Higher National level, and supports study at Foundation Degree, degree and honours degree level in construction-related subjects.

This unit may have links to the Edexcel Level 3 Technical and Professional NVQs for Construction and the Built Environment. Updated information on this, and a summary mapping of the unit to the CIC Occupational Standards, is available from Edexcel. See *Annexe D: National Occupational Standards/mapping with NVQs*.

The unit provides opportunities to gain Level 3 key skills in application of number, information and communication technology, improving own learning and performance and problem solving. Opportunities for satisfying requirements for Wider Curriculum Mapping are summarised in *Annexe F: Wider curriculum mapping*.

Essential resources

The Health and Safety Executive provides excellent resources for all matters concerning health, safety and welfare, as do CITB-Construction Skills. Both have websites that offer excellent teaching and learning resources that can be used to research a whole array of health, safety and welfare matters. Under the ‘Skills for Life’ banner the Standards Unit of the DfES has produced a range of support information that will be very useful in the delivery of this unit. Advice is available at the following sites standards.unit@dfes.gsi.gov.uk and www.successforall.gov.uk

The HSE website www.hse.gov.uk is also very useful, particularly for statistics. In addition to the above, access to a construction site and to real examples of relevant documentation will provide an excellent learning resource. The use of video, DVD or CD ROM resources will add to the learning experience.

Access to workplace health, safety and welfare policies is essential for learners to explore their roles and responsibilities. A broad range of personal protective equipment should be available for learners to inspect and use.

Indicative reading for learners

Textbooks

Barber J – *Health and Safety in Construction* (Thomas Telford, 2002)
ISBN 0727731181

Clarke A – *Managing Health and Safety in Building and Construction* (Butterworth-Heinemann, 1999) ISBN 0750640154

Griffith A and Howarth T – *Construction Health and Safety Management* (Pearson Higher Education, 2001) ISBN 0582414423

Hughes P – *Introduction to Health and Safety in Construction* (Butterworth-Heinemann, 2006) ISBN 075068111X

HSE – *Control of Substances Hazardous to Health (COSHH)* (HSE Books, 2002)
ISBN 0717625346

HSE – *Guide to Managing Health and Safety in Construction* (HSE Books, 1995)
ISBN 0717607550

HSE – *Health and Safety in Construction* (HSE Books, 2003) ISBN 0717621065

HSE – *Health and Safety Statistics 2000* (HSE Books) ISBN 0717621103

HSE – *Managing Health and Safety: Your Role* (HSE Books, 1996) ISBN 0717611531

St John Holt A – *Principles of Construction Safety* (Blackwell, 2005) ISBN 1405134461

Websites

www.citb.co.uk

CITB – Health and Safety At Work – various publications

www.hse.gov.uk

HSE – A Guide to the Health and Safety at Work Act 1974

Key skills

Achievement of key skills is not a requirement of this qualification but it is encouraged. Suggestions of opportunities for the generation of Level 3 key skill evidence are given here. Staff should check that learners have produced all the evidence required by part B of the key skills specifications when assessing this evidence. Learners may need to develop additional evidence elsewhere to fully meet the requirements of the key skills specifications.

Application of number Level 3	
When learners are:	They should be able to develop the following key skills evidence:
<ul style="list-style-type: none"> explaining how collecting accurate data and information on accidents and incidents contributes to improvements in health, safety and welfare in the workplace. 	<p>N3.1 Plan an activity and get relevant information from relevant sources.</p> <p>N3.2 Use this information to carry out multi-stage calculations to do with:</p> <p>a handling statistics.</p> <p>N3.3 Interpret the results of your calculations, present your findings and justify your methods.</p>
Information and communication technology Level 3	
When learners are:	They should be able to develop the following key skills evidence:
<ul style="list-style-type: none"> using the internet and other electronic media to research and gather information on health, safety and welfare using ICT processes to produce the assessment evidence. 	<p>ICT3.1 Search for information using different sources and multiple search criteria in at least one case.</p> <p>ICT3.2 Enter and develop the information and derive new information.</p> <p>ICT3.3 Present combined information such as text with image, text with number, image with number.</p>

Improving own learning and performance Level 3	
When learners are:	They should be able to develop the following key skills evidence:
<ul style="list-style-type: none"> identifying hazards, describing and performing risk assessment procedures and selecting appropriate control measures. 	<p>LP3.1 Help set targets using information from appropriate people and plan how these will be met.</p> <p>LP3.2 Take responsibility for your learning, using your plan to help meet targets and improve your performance.</p>
Problem solving Level 3	
When learners are:	They should be able to develop the following key skills evidence:
<ul style="list-style-type: none"> performing typical risk assessments, justifying contents in terms of reasonable practicability and evaluating accident report forms to improve future provision. 	<p>PS3.1 Identify a problem and identify different ways of tackling it.</p> <p>PS3.2 Plan and implement at least one way of solving the problem.</p> <p>PS3.3 Check if the problem has been solved and review your approach to problem solving.</p>