



THE INSTITUTION OF FIRE ENGINEERS
FOUNDED 1918 • INCORPORATED 1924

IFE Level 4 Certificate in Fire Safety

Qualification Specification

Qualification Number: 603/6613/8

About the Institution of Fire Engineers (IFE)

The IFE is the professional institution for those working in the fire sector. The IFE is a registered charity working for societal benefit. Founded in 1918, the IFE's mission is to promote, encourage and improve the science, practice and professionalism of fire engineering with the overall aim of protecting and saving lives.

Members of the IFE share a commitment to ensuring that the fire profession remains relevant and valued, protecting people, property and the environment from fire.

About the IFE Awarding Organisation

The IFE's awarding organisation is non-profitmaking.

The aim of the of the awarding organisation is to encourage those who work in the sector to engage with, and develop, the critical understanding needed to operate effectively and safely and to best professional standards so that they can protect and save lives. In doing this, the awarding organisation contributes to three of the IFE's (six) over-arching strategic priorities ie:

- Facilitate awareness of fire issues and developments through the communication of ideas, knowledge, information
- Foster professionalism by establishing and maintaining pathways and recognised standards of fire professionalism and competency.
- Increase knowledge in the science, practice and professionalism of fire engineering.

All of the IFE's qualifications are designed for those working in the fire sector and to meet the above aims. Qualifications and their associated assessments (examinations and practical activities/assignments) provided by the IFE are designed, assessed and quality assured by experts with extensive experience of working within the fire sector.

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Level 4 Certificate in Fire Safety

Introduction

The IFE Level 4 Certificate in Fire Safety has been developed by the Institution of Fire Engineers (IFE), Fire Risk Assessors and Fire Safety specialists in both private sector roles and public sector roles in the Fire and Rescue Services.

This qualification focuses on the application of fire safety measures in complex premises and environments. Complex premises and environments include premises with a large number of occupants, premises with longer distances to escape routes and premises used for storage/processes involving high or higher risk materials and processes, public access areas and historic buildings. It covers protection equipment and systems as well as management protocols.

This qualification is derived from unit 2: Fire Safety within the Level 4 Certificate in Fire Science and Fire Safety. It is directly equivalent to that unit in that the content and assessment remain exactly the same. Individuals who achieve this qualification may use it towards the achievement of the Level 4 Diploma in Fire Science and Fire Safety in the same way as unit 2 is used. For information, please see - <https://www.ife.org.uk/IFE-Qualifications-with-Syllabus-Links>

Target Audience

This qualification will be appropriate for individuals who provide fire safety advice and/or carry out fire safety assessments/audits in diverse and complex contexts.

It will be of interest to:

- Fire Safety/Protection Officers working in Fire and Rescue Services
- Fire Risk Assessors
- Fire Inspectors
- Fire/Safety Officers/Managers with responsibility for fire safety in complex premises.

Learning Outcomes

Candidates who achieve this unit should be able to:

- evaluate risks in complex buildings and environments where traditional fire safety approaches may not be sufficient, having regard to construction, occupancy and layouts
- identify and evaluate options to reduce risks, drawing on extensive knowledge of precautions and protection options including trade-offs and compensatory measures
- determine appropriate solutions, synthesising information from diverse angles
- comment on the design of new buildings as well as existing buildings and alterations to existing buildings.

Qualification Content

The content of the qualification is set out in the section entitled “Content” below. This section provides information on the range of topics that must be studied including the way that candidates need to show their understanding (ie the Assessment Objectives) and the scope/range/contexts in which they can be tested (Knowledge, Understanding and Skills).

The syllabus content is very broad and deep and therefore not all topics can be tested in all examinations. Candidates are advised to prepare for the examination by covering all topics so that they are able to provide comprehensive responses.

Assessment

The assessment takes the form of one three-hour examination. The examination is closed-book and provides a summative assessment of the full range of learning specified in the content below.

Candidates will be required to complete **six** questions from a choice of **eight** questions. There will be 20 marks available for each of the questions.

In order to achieve a pass, candidates will be required to attain at least 40% of the 120 marks available to them via the six questions (ie 48 marks).

Candidates who answer fewer than six questions will be able to achieve a pass as long as they achieve the minimum pass mark of 48. Where candidates answer more than six questions, candidates will not benefit as only the six best responses will be included in the final mark.

Past papers for the last three years are available on the IFE website - <https://www.ife.org.uk/Qualifications/Past-Papers-and-Exam-Reports> Please see the papers (and associated examiner reports) for March examinations for the L4C2 Fire Safety unit (in the section for the Level 4 Certificate in Fire Science and Fire Safety).

Examinations are provided in English only.

Grading and Certification

Results of examinations will be reported as follows:

Pass - this is awarded where candidates achieve a mark between the minimum pass mark of 48 marks (ie 40% of the marks available) and 71 marks (59%).

Distinction - this is awarded where candidates achieve a mark of 72 or above (ie 60% or more of the marks available).

Fail - candidates who achieve 47 marks or fewer will receive a result showing Fail. Where candidates receive 24 marks (ie 20% of the marks available) or fewer, the result will show Fail (X).

Candidates who are unsuccessful in the examination may re-sit the examination. There is no limit on the number of times that candidates may re-sit.

Note: The IFE reports results as described in the bands above. However, candidates who wish to know the specific mark awarded to them may email the IFE for this information.

Entry Requirements

There are no formal entry requirements. However, candidates are advised that extensive knowledge and understanding of technical issues such as the operation of specialist protection equipment and the design of buildings is required and therefore underpinning understanding of fire engineering science will be of benefit. Candidates who have studied Fire Safety at level 3 will also be able to draw on relevant understanding in applying fire safety principles in diverse contexts.

As the paper is provided in English only, candidates will need to be able to read English fluently in order to access the examination questions and the relevant recommended reading material.

Qualification Level

This qualification has been designed to enable candidates to demonstrate that they have attained skills and knowledge at Level 4. Other types of qualifications that are set at Level 4 include Certificate of Higher Education (CertHE), Higher National Certificate (HNC) and Level 4 NVQs.

The qualifications regulator, Ofqual, has provided the following descriptors to illustrate the knowledge and understanding expected from those who hold qualifications at Level 4.

Level 4 Knowledge descriptor

The candidate:

- Has practical, theoretical or technical knowledge and understanding of a subject or field of work to address problems that are well defined but complex and non-routine.
- Can analyse, interpret and evaluate relevant information and ideas.
- Is aware of the nature of approximate scope of the area of study or work.
- Has an informed awareness of different perspectives or approaches within the area of study or work.

Candidates are advised to bear these descriptors in mind when preparing for assessment and when composing examination responses.

Qualification Learning Time

The length of time needed to prepare for this examination will vary depending upon the starting point for each individual.

Total qualification time is 170 hours:

- 167 hours of learning/study. Study may be self-study (please see the section on recommended reading below) and may include relevant CPD and employer training programmes.
- 3 hours of assessment (directed time) ie one three-hour examination.

Most candidates prepare for IFE examinations via self-study or by drawing on training provided by their employer that covers aspects of the syllabus. Candidates are advised to cross-map their study/training against the content of the syllabus to ensure that all parts of the syllabus have been covered. Recommended reading materials are provided below.

Progression

Candidates who are successful in achieving this qualification may consider progression to specialist degree or Foundation Degree programmes.

Candidates who wish to broaden their knowledge and understanding at Level 4 could consider working towards other fire-specific qualifications such as the IFE Level 4 Certificate in Fire Engineering Science or the IFE Level 4 Certificate in Fire Investigation.

Candidates may also progress to qualifications at level 5 or degrees specialising in Fire Safety.

Reasonable Adjustments

The IFE permits reasonable adjustments to be made where candidates have disabilities (including medical conditions and learning disabilities such as Dyslexia). The IFE's policy on reasonable adjustments aims to enable candidates with disabilities and other difficulties to access the IFE qualifications without compromising the assessment process or the validity of the certificate.

The policy, which includes the types of arrangements that may be made (eg additional time, use of technology) and the procedure for applying for reasonable adjustments, is published on the IFE's website - <https://www.ife.org.uk/Qualification-FAQs>. The IFE will consider all requests for reasonable adjustments. All requests for reasonable adjustments must be submitted to the IFE as all decisions on reasonable adjustments rest with the IFE.

Booking Examinations and Additional Information on Examination Arrangements

This examination is available in March each year.

Individuals who wish to sit examinations may book examinations either through their examination centre (eg employer, IFE Branch) or they may book through the IFE. Where appropriate, the IFE will direct individuals to approach their employer or branch contact.

Information on the examination timetable and other relevant dates (such as the last date for booking examinations) for March examinations, together with the booking form, the list of venues available to candidates, the terms and conditions for candidates and additional information on examination arrangements is provided on the IFE website on 1 September each year. A separate page for each March examination session is provided on the IFE website. Information on March 2021 examinations is available at: <https://www.ife.org.uk/March-2021-Examinations>

Detailed guidance for candidates on examination arrangements is provided in the Rules and Information for Candidates booklet. This booklet sets out the rules to be followed by candidates and also the dates for publication of results and the timetable for candidates to query examination results.

Complaints and Appeals

Procedures for making a complaint or lodging an appeal are available on the IFE website - <https://www.ife.org.uk/Qualification-FAQs>

Information for Examination Centres

Organisations that would like to provide a venue for IFE examinations, should contact the IFE to discuss the requirements for centres – please email exams@ife.org.uk in the first instance.

Centres will need to comply with the Terms and Conditions for centres. Information for centres, including the Examination Centre Handbook which contains detailed guidance on running a centre, is available on the IFE website. Please see - <https://www.ife.org.uk/Information-for-Examination-Centres>. Centres are required to re-confirm their compliance with the Terms and Conditions prior to each examination session and to provide an Examination Centre Invigilation Report following the completion of examinations.

The IFE operates a centre inspection programme based on unannounced visits. All centres should anticipate visits from centre inspectors.

Recommended Reading

This qualification covers an extensive range of contexts and candidates are advised to reflect this breadth in their examination preparation.

Candidates are also advised to review past examination papers. Past papers, together with the associated examiner reports on the papers, can be downloaded, free of charge, from the IFE website - <https://www.ife.org.uk/Qualifications/Past-Papers-and-Exam-Reports>.

The IFE has applied the following criteria in determining which resources should be included on this recommended reading list:

- the resource provides information which will be of benefit to the candidate in their professional life, providing depth and breadth of understanding;
- the resource contains some information that will be relevant to part of the syllabus;
- the resource is recognised by industry professionals as providing valuable information.

Candidates preparing for the examinations are advised to refer to the list below:

- The Fire Protection Handbook, NFCC/CFOA, available online: https://www.nationalfirechiefs.org.uk/write/MediaUploads/NFCC%20Guidance%20publications/Protection/DSFRS_Protection_Handbook.pdf
- Relevant graphical symbols - <https://www.firesafe.org.uk/graphical-symbols-and-abbreviations-for-fire-protection-drawings/>
- Guidance documents on business and domestic fire safety available online from <https://www.gov.uk/government/collections/fire-safety-law-and-guidance-documents-for-business>
 - Fire safety risk assessment: small and medium places of assembly
 - Fire safety risk assessment: large places of assembly
 - Making your premises safe from fire
 - Fire safety risk assessment: sleeping accommodation
 - Fire safety risk assessment: educational premises
 - Fire safety: guidance for the hospitality industry
 - Fire safety risk assessment: animal premises and stables
 - Fire safety risk assessment: means of escape for disabled people
 - Fire safety risk assessment: open-air events and venues
 - Fire safety risk assessment: transport premises and facilities
 - Fire safety risk assessment: healthcare premises
 - Fire safety risk assessment: residential care premises
 - Fire safety risk assessment: theatres, cinemas and similar premises
 - Fire safety risk assessment: 5-step checklist
 - Fire safety risk assessment: factories and warehouses
 - Fire safety risk assessment: offices and shops
 - Guidance on fire safety provisions for certain types of existing housing produced by the Local Authorities Coordinators of Regulatory Services (LACORS)
 - Fire safety in purpose-built flats produced by the Local Government Group
 - Fire safety in construction produced by the Health and Safety Executive
- The BS 9999 handbook. Effective fire safety in the design, management and use of buildings, BSI

- Fire Detection and Fire Alarm Systems: BS 5839 Parts 1 and Part 6, The Design, Installation, Commissioning and Maintenance of Fire Detection and Fire Alarm Systems – A Guide to BS Code 5839, BSI
- Approved Document B Volume 1 - Dwelling Houses
- Approved Document B Volume 2 - Buildings other than dwelling houses
- Fire Service Manual Volume 3: Fire Safety – Basic Principles of Building Construction, TSO
- Fire Service Manual Volume 3: Fire Safety – Fire Protection of Buildings, TSO
- Guidance for the Reduction of False Alarms & Unwanted Fire Signals
www.cfoa.org.uk/download/49412
- A guide to health, safety and welfare at music and similar events HSG 195 HSE 1999
- https://www.qub.ac.uk/safety-reps/sr_webpages/safety_downloads/event_safety_guide.pdf
- Guidance on the emergency use of lifts or escalators for evacuation and fire and rescue service operations BD 2466 www.highrisefirefighting.co.uk/docs/guidanceemergencylifts.pdf
- Emergency Lighting: BS 5266 <https://www.firesafe.org.uk/emergency-lighting/>
- ASFP Guide to Passive Fire Protection for Fire Risk Assessors
- ASFP Ensuring Best Practice for Passive Fire Protection in Buildings
- ASFP YouTube video – Fire protection to the structure of the building
- BWF-Certifire, Fire Doors and Doorsets Best Practice Guide
- Hardware for fire and escape doors, Code of Practice jointly published by the Door and Hardware Federation and the Guild of Architectural Ironmongers
- ASFP Grey Book - Volume 1: Fire dampers (European standards) E (integrity) & ES (integrity and leakage) classified, 2nd Edition
- Model Standards 2008 for Caravan Sites in England, Caravan Sites and Control of Development Act 1960 – Section 5 – available online
- The CFPA website also provides a number of free to download guides that cover a number of the areas in the syllabus - (<http://cfpa-e.eu/cfpa-e-guidelines/guidelines-fire-protection-form/#link-register-bottom>)

Note: *PDF copies can be ordered through TSO <https://www.tsoshop.co.uk/Safety/Fire-Service/>

Further Information

Further information on examination conditions is available in the IFE booklet, *Rules and Information for Candidates Taking IFE Examinations*. This booklet can be downloaded from the IFE's website.

Candidates may also find the general guide for candidates which provides information on question terms and levels helpful - https://www.ife.org.uk/write/MediaUploads/Exams/Candidate_Guide.pdf

Please address any queries to the IFE by emailing: exams@ife.org.uk

Content – Level 4 Certificate in Fire Safety

1. Fire Safety and Fire Engineering Principles

Assessment Objective	Knowledge, Understanding and Skills
1.1 Explain and apply the fire safety systems which may be used when designing, using or altering complex buildings	<ul style="list-style-type: none"> • Passive fire safety • Active fire safety • Pressurisation • Leakage paths • Automatic suppression systems • Smoke control and air handling • Compartmentation • Fire detection and warning systems
1.2 Explain the underlying concepts that support fire safety in the built environment	<ul style="list-style-type: none"> • Design fire size • Smoke movement • ASET/RSET and factors that affect different phases of evacuation • Fire resistance
1.3 Explain how computer modelling can support fire engineering	<ul style="list-style-type: none"> • Fire load • Fire growth • Limits of tenability • t^2 growth rate • Design Fire Size • Zone and field models • Use of flow chart to support design process • Fire/smoke modelling, examples of programmes • Pedestrian flow/evacuation modelling

2. Human Behaviour in Emergency Situations

Assessment Objective	Knowledge, Understanding and Skills
2.1 Explain the human behaviour factors that affect safety from fire	<ul style="list-style-type: none"> • Interaction between fire safety systems and human behaviour • The physiological, behavioural and psychological effects on people confronted by a fire situation • How behaviour of people in a fire can adversely affect evacuation and means of escape
2.2 Explain the special arrangements that may be needed for means of escape for individuals with particular requirements and assess implications in different contexts	<ul style="list-style-type: none"> • Emergency procedures for the safe evacuation of people from a fire situation • Individuals with particular requirements to include the young, the old, the disabled, those with poor health, short term and long-term conditions, cognitive impairment and people from different cultures • Behavioural aspects of people in fire and implications when planning/reviewing means of escape and evacuation procedures
2.3 Apply learning from significant fires in assessing situations or drawing conclusions	<ul style="list-style-type: none"> • Fires of International note • Identification of patterns and application of learning from previous incidents

3. Fire Protection Equipment

Assessment Objective	Knowledge, Understanding and Skills
3.1 Describe the design features, installation, maintenance and operation of automatic fire detection systems and assess which systems would be appropriate in different situations	<ul style="list-style-type: none"> • Types of system • Success or failure of operation • Automatic Fire Detectors - Radio Systems • Automatic Fire Detection - Detector Circuits • Zones, addressable for complex evacuation strategies, double knock, multi-purpose detectors • Aspirating systems • Control and indicating equipment
3.2 Describe the design features, installation, maintenance and operation of extinguishing media and assess which systems would be appropriate in different situations	<ul style="list-style-type: none"> • Sprinkler systems: commercial, residential and domestic (life safety) • Other water- based systems, drenchers, foam, water mist • Gaseous systems • Oxygen depletion systems
3.3 Describe and explain the design features, installation, maintenance and operation of explosion detection and control systems	<ul style="list-style-type: none"> • Explosion detection systems • Explosion venting systems • Explosion suppression systems • Control of flammable atmospheres
3.4 Describe and explain the design features, installation, maintenance and operation of other protection equipment	<ul style="list-style-type: none"> • Fire curtains • Shutters

4. Building Design

Assessment Objective	Knowledge, Understanding and Skills
4.1 Interpret plans of buildings	<ul style="list-style-type: none"> • Evaluate plans to identify risk and provide fire safety solutions
4.2 Explain the way in which building materials can be used, comment on their behaviour in fire and assess the implications for fire safety	<ul style="list-style-type: none"> • Applied protection • Modern Methods of Construction • Cross Laminated Timber • Steel frame • Glulam • Large structural timber • Structural Insulated Panels • Modular construction • Fire retardant, intumescent treatments • Upgrading fire resisting doors
4.3 Describe structures and building design components stating their function and assessing their impact on fire safety	<ul style="list-style-type: none"> • Atria • Glazing • Separating walls • Compartment walls and floors • Junctions formed by elements of structure • Protected shafts and protecting structures • Fire resisting doors and other enclosures • Claddings • Facades • Tunnels
4.4 Describe heating, ventilation and air conditioning systems that are used in buildings, assess the effects they may have on a fire and explain the fire suppression methods used in these systems	<ul style="list-style-type: none"> • Heating systems • Ventilation • Air conditioning systems • Stairwell pressurisation systems • Ventilation and smoke handling systems
4.5 Describe mechanised pedestrian transport systems, their role in the movement of people in buildings and implications for fire safety	<ul style="list-style-type: none"> • Lifts/elevators • Escalators • Travellators
4.6 Evaluate risks associated with modern construction design and development process	<ul style="list-style-type: none"> • Describe consultation process • Qualitative Design Review • Interaction and compatibility between different materials • Unexpected consequences of inappropriate selection, use, location, orientation and interaction of materials • Impact of quality of construction • Impact of modern methods of construction • During construction and alterations

5 Fire Safety Management, Review and Advice

Assessment Objective	Knowledge, Understanding and Skills
5.1 Explain how to assess fire risks within complex premises and environments	<ul style="list-style-type: none"> • Principles and methods of risk assessment in complex premises and environments • Impact of structure, materials and access • Identification of people who may be at risk • Identification of risks to property and the environment • How to explain risks to members of the public and property owners/managers • Common causes of fire in different occupancies • How to review effectiveness of current measures • How to provide feedback on effectiveness of current measures • Impact of organisational constraints
5.2 Identify and evaluate methods of improving fire safety in the community and increasing public awareness and perception of general fire safety matters	<ul style="list-style-type: none"> • Strategic thinking • The use of fire statistics to inform decisions on fire safety programmes • Risks in the community and prioritising fire safety programmes • Objectives of fire safety education in the community • Contents of fire safety programmes and their purpose • Methods to engage diverse community members and stakeholders • Methods to evaluate success of programmes
5.3 Explain and assess the role of management and control of fire safety in large buildings and organisations	<ul style="list-style-type: none"> • Strategic thinking • Level of fire safety knowledge and responsibility at different parts of the organisation • Engaging and training employees in different premises/workplaces and in different roles • Identification of training requirements for people with fire safety responsibility • Importance of testing and reviewing precautions in place and how to do this