**SFSMFP1**

**Title:** Establish client requirements for mechanical fire protection systems

**Overview**

This standard is for those who install mechanical fire protection systems, and sets out the skills, knowledge and understanding for you to respond to clients who require a mechanical fire protection system. In doing this, you will respond to client requests for systems. This will involve carrying out site surveys, collecting and recording information for the design, supply, installation and maintenance of the systems.

**Performance Criteria**

**P1.** respond to client requirements using appropriate methods of communication and following your organisation’s procedures

**P2.** confirm that the individual that you are liaising with is the designated responsible person for making any decisions you may require to be made

**P3.** establish that you have sufficient information from which to produce mechanical fire protection system proposals

**P4.** confirm the clients’ understanding of any information that you provide and of the scope and limitations of the actions that you and your organisation can take

**P5.** record details of clients’ requirements for a mechanical fire protection system following your organisation’s procedures, taking account of risks associated with the components or the operating environment

**P6.** clarify with relevant third parties any identified gaps in information in order to respond to the client’s request

**P7.** maintain the security and confidentiality of client information and their mechanical fire protection system requirements

**P8.** confirm that you have all the necessary and correct details of client requirements in order to carry out site surveys

**P9.** liaise with the client to ensure access to the site and relevant personnel is available

**P10.** use survey methods that are appropriate to the type of site, and the clients’ requirements

**P11.** record risks and site characteristics that could impact on mechanical fire protection systems and installation

**P12.** establish the suitability of existing site utilities and services that may form an integral part of the required system

**P13.** carry out surveys within agreed timescales and in line with current and relevant legislation and regulations, industry standard guidelines, your organisation’s quality management procedures and health and safety codes of practice

**P14.** maintain the confidentiality of information, sites and systems in line with current and relevant legislation and regulations; industry standard guidelines; your organisation’s quality management procedures and health and safety codes of practice

**Knowledge and understanding**

**K1.** communication methods and why it is important to communicate with clients effectively and promptly

**K2.** how, why and when to use different communication methods

**K3.** the scope and limitation of the services that your organisation can provide and

of actions that you can take

**K4.** the reasons why you must confirm the person you are liaising with is deemed to be the designated responsible person with the authority to make necessary decisions

**K5.** when, where and how to obtain specialist assistance

**K6.** how to correctly interpret information from clients to determine mechanical fire protection requirements

**K7.** how and why you should maintain security and confidentiality of the client’s information

**K8.** where and how to access sufficient, relevant and accurate information from other sources if needed

**K9.** typical risks associated with the client’s requirements and operating environment

 **K10.** the legal and organisational requirements regarding data protection

**K11.** the information that you need to prepare accurate mechanical fire protection systems design

**K12.** why and when you might need to liaise with other people to survey sites

**K13.** how to recognise factors that could affect system installation, and how to record such details fully and accurately

**K14.** elementary aspects of building construction, utilities and services

**K15.** what utilities and services may be needed to form an integral part of the system, and how to ensure that they are suitable

**K16.** how to capture information by producing drawings, sketches, photographs, measurements

**K17.** current relevant legislation and regulations industry standard guidelines; your organisation’s quality management procedures and health and safety codes of practice

**K18.** the relationship between types of fire and appropriate extinguishing mediums

**K19.** characteristics of different environments to which the mechanical fire protection system is being provided

**K20.** the requirements of different stakeholders

**K21.** relevant quality management procedures and processes that relate to mechanical fire protection systems

**Glossary**

**mechanical fire protection system:** a non-electrical device used for fire protection such as, sprinklers; gas systems; water mist and powder; foam and chemical systems; dry and wet risers; fire mains.

**site characteristics:** the buildings intended physical usage characteristics that may impact on the integrity of the mechanical fire protection system e.g. the addition of ceiling high cupboards, the storing of flammable materials, building structures (such as beams) are significant for considering sprinklers or items that may affect the fire protection system

**designated responsible person:** could include, but not limited to, duty holder; building management; fire marshal/warden; maintenance engineer

**survey methods:** the collection of data and information pertaining to the correct installation of the mechanical fire protection system. These methods may include using tools such as drones

**stakeholders:** could include:local fire authority; water undertaker; building control; insurers; government departments; environmental agencies; third party certification bodies

**SFSMFP2**

**Title:** Prepare and produce quotations for mechanical fire protection systems

**Overview**

This standard is aimed at those who install mechanical fire protection systems, and sets out the skills, knowledge and understanding for you to prepare and produce quotations for mechanical fire protection. You will do this by scoping out the cost of systems and preparing and issuing quotations for these to clients.

**Performance Criteria**

**P1.** establish the information required to produce a quotation in order to meet client needs and to meet current relevant legislation and regulations, industry standard guidelines; your organisation’s quality management procedures and health and safety codes of practice

**P2.** clarify and record details of anomalies that appear from original specifications, in data and information provided by others, site surveys or installation specification before establishing costs

**P3.** Carry out a calculation based on suppliers’ prices, unit costs for labour, plant, materials, overheads and profit margins

**P4.** maintain the confidentiality of information, sites and systems in line with current relevant legislation and regulations and your organisation’s quality management procedures

**P5**. provide a quotation to the designated responsible person within agreed submission requirements

**P6.** establish the commercial basis of the contract, including price validity engineering options; variations and payment terms; exclusions and attendances; associated third parties

**P7.** confirm a clear programme of works to the client, including timescales

**Knowledge and understanding**

**K1.**  current relevant legislation and regulations; industry standard guidelines; your organisation’s quality management procedures and health and safety codes of practice

**K2**. your organisation’s processes and procedures involved in preparing quotations

**K3.** the information that you need in order to establish the costs of providing systems and produce a quotation

**K4.** why it is important to clarify anomalies, and record variations from original specifications when you are establishing costs

**K5**. what components are needed to provide systems that meet the specified requirements

**K6.** when to involve third parties when establishing costings andthe information that you need to provide on the mechanical fire protection system to appropriate third parties in order to establish accurate costings

**K7.** where to find costs of system components

**K8.** the different formats for calculating and presenting costings, and when to use them

**K9.** why it is important to include clear and accurate details in estimates

**K10.** why it is important to ensure that information contained within the estimate is sufficient to confirm the clients’ aims and objectives

**K11.** the typical constraints and limitations that might impact the estimate, and how to address them

**K12.** why it is important to maintain confidentiality of information

**K13**. how to advise clients and explain the benefits to them of the suitable and sufficient option from a number of possibilities of components and system arrangement

**K14.** the steps involved when establishing the commercial basis for contracts

**K15.** how to ensure that quotations take account of scope of works and any variations from industry standards

**K16.** the procedure you must follow to provide clients with a clear programme of works, including information on timescales

**K17.** what clients need to be aware of in terms of their responsibilities, as well as your organisation’s responsibilities and those of relevant stakeholders

**K18.** your organisation’s policies and procedures for providing quotations

**K19.** current relevant legislation and regulations; industry standard guidelines; your organisation’s quality management procedures and health and safety codes of practice

**K20.** your organisations procedures for maintaining client confidentiality

**K21.** the relationship between types of fire and appropriate extinguishing mediums

**K22.** characteristics of different environments to which the mechanical fire protection system is being provided

**K23.** the requirements of different fire certification bodies and third party certifications

**K24.** relevant quality management procedures and processes that relate to installed systems

**Glossary**

**data and information:** fire system documents (both manual and electronic) that contain technical and design characteristics

**variations:** changes required in the mechanical fire protection system to enable the system to cover all requirements and with due regard to the manufacturer’s instructions

**designated responsible person:** could include, but not limited to, duty holder; building management; fire marshal/warden; maintenance engineer

**mechanical fire protection system:** a non-electrical device used for fire protection such as, sprinklers; gas systems; water mist and powder; foam and chemical systems; dry and wet risers; fire mains

**stakeholders:** could include**:**  local fire authority; water undertaker; building control; insurers; government departments; environmental agencies; third party certification bodies

**SFSMFP3**

**Title:** Design systems for mechanical fire protection

**Overview**

This standard is aimed at those who design mechanical fire protection systems, and sets out the skills, knowledge and understanding for you to design systems by liaising with clients, taking account of particular site characteristics, calculating costs and complying with legislation and regulatory requirements.

**Performance Criteria**

**P1.** Liaise with the client to gather information about their requirements for the mechanical fire protection system

**P2.** establish who is the designated responsible person(s) to verify or approve the design calculations

**P3.** establish what existing and planned services are in place on site

**P4.** maintain the security and confidentiality of information relating to the client’s requirements

**P5.** record any factors relating to the site environment that may have an impact on the proposed mechanical fire protection system options

**P6.** check that you have sufficient information through client consultation to design and specify mechanical fire protection systems that meet the client requirements, reverting to the client if you conclude there is insufficient information.

**P7.** produce a design, based on the client’s requirements and which meets the required performance data

**P8.** produce system designs and specifications that optimise costs and that are appropriate to installation sites, adhering to current relevant legislation and regulations, industry standard guidelines, your organisation’s quality management procedures and health and safety codes of practice

**P9.** check the onward signals to integrated systems can be verified

**P10.** provide designs and specifications in agreed formats, within required timescales and to the appropriate person

**P11.** confirm that the design and specifications align with the existing and planned services on site

**P12.** obtain or produce approvals and certification required for systems, as appropriate

**P13.** follow relevant quality management procedures and processes when designing systems

**P14.** produce certification information and provide it to the client

**P15.** verify with the designated responsible person(s) that the designs are suitable and sufficient

**Knowledge and understanding**

**K1.** how to determine client requirements when preparing designs for approval and why it is important to do this

**K2.** the research methods to employ when looking for information that will satisfy client requirements

**K3.** how to make accurate calculations, including hydraulic calculations

**K4.** factors that may impact on the proposed systems, how these should be recorded and why it is important to do so

**K5.** your organisation’s policies and procedures for maintaining the security and confidentiality of information and why it is important to do so

**K6.** the importance of having sufficient valid, accurate and up to date source information

**K7.** the limits, constraints and capabilities of other organisations that may be involved in the installation and operation of the system

**K8.** the performance, limitations and availability of systems, materials and components that you could specify in your designs

**K9.** formats of and information required for designs and specifications

**K10.** current relevant legislation and regulations; industry standard guidelines; your organisation’s quality management procedures and health and safety codes of practice

**K11.** the relationship between types of fire and appropriate extinguishing mediums

**K12.** the characteristics of different environments to which the system is being provided

**K13.** the requirements of different stakeholders

**K14.** relevant quality management procedures and processes

**Glossary**

**mechanical fire protection system:** a non-electrical device used for fire protection such as, sprinklers; gas systems; water mist and powder; foam and chemical systems; dry and wet risers; fire mains

**system options:** any information supplied to the client informing them of the different types of mechanical fire protection system that are available to meet their requirements

**designated responsible person:** could include, but not limited to, duty holder; building management; fire marshal/warden; maintenance engineer

**stakeholders:** could include: local fire authority; water undertaker; building control; insurers; government departments; environmental agencies; third party certification bodies

**certification information:** design certificate; design specification

**SFSMFP4**

**Title:** Install mechanical fire protection systems

**Overview**

This standard is aimed at those who install mechanical fire protection systems, and sets out the skills, knowledge and understanding for you to do this. You will make a plan of action to carry out the task, performing necessary system checks and use appropriate tools and methods throughout.

**Performance Criteria**

**P1.** prepare a method statement for the installation, including risk assessment

**P2.** establish appropriate communication arrangements with client representatives and third parties

**P3.** prepare plans of action for installing systems that comply with performance requirements, current relevant legislation and regulations, industry standard guidelines, your organisation’s quality management procedures and health and safety codes of practice

**P4.** check that the designs are appropriate for the existing and planned services on sites

**P5.** confirm that testing specified in the designs can be performed post installation

**P6.** confirm that required tools and system components are available, in good working order, are suitable for the job and comply with health and safety requirements

**P7.** select fixing and mounting devices and methods that are appropriate to the site(s), building structures and materials

**P7.** establish and maintain a safe and secure working environment

**P8.** resolve potential problems during the preparation for the installation in line with your organisation’s procedures and guidelines

**P9.** check that you have all the relevant details of work activities required to plan a system, and that they are suitable for the task required

**P10.** communicate and agree working arrangements with clients and third parties, that are mutually acceptable

**P11.** review the method statement to check that all necessary resources, including personnel, tools and system components and safe systems in work will be available when required

**P12.** make contingency plans to account for any potential problems with work schedules or arrangements

**P13.** produce project plans that are complete, current, feasible and in formats that are suitable for their purpose and ensure progress is monitored and recorded

**P14.** position and install specified system components in line with the manufacturers’ recommendations, system design, relevant legislation and regulations, industry standard guidelines, health and safety codes of practice and method statement

**P15.** use tools, fixing and mounting devices and methods that are appropriate to the installation activity

**P16.** comply with health and safety requirements when using tools to position and install system components

**P18.** make good any damage to building structures or surfaces in line with agreed specifications

**P19.** report any damage you cannot repair to the relevant person

**P20.** remove tools and materials from sites after use, reporting any that are unserviceable to the relevant person

**P21.** return spare or reusable components and materials to their designated locations, including provision of site spares

**P22.** dispose of waste, debris and surplus materials in line with , current relevant legislation and regulations, industry standard guidelines, your organisation’s quality management procedures and health and safety codes of practice

**P23.** maintain installation records

**P24.** make systems available for testing inspection and commissioning

**Knowledge and understanding**

**K1.** the procedure for checking the safe and correct operation of tools and system components, how to do this and how to deal with any that do not meet requirements

**K2.** the capabilities and limitation of the tools and system components that you intend to use, and why it is important to use the correct tools and components

**K3.** why it is important to check that test apparatus is in working order and calibrated where necessary

**K4.** the procedure for setting up safe and secure work areas, including for tools and materials

**K5.** the importance of obtaining full and complete information regarding design, testing or survey from other relevant colleagues prior to installing a system

**K6.** how to communicate effectively with clients and any third parties before and during installations in order to maintain their goodwill

**K7.** the procedure for developing plans of action for the installation, including but not limited to, method statements

**K8.** the limits of your authority and responsibility to deal with identified problems with installations of systems

**K9.** the plans to carry out the installations containing all required information

**K10.** the technical specifications, client and third party requirements relating to installations

**K11.** the principles of project planning and how to use common planning tools

**K12**. typical installation activities, their timescales and how to plan and co- ordinate effectively

**K13.** the typical problems that can occur during installations and how to deal with them

**K14.** communication protocols with others to plan and co-ordinate the use of resources

**K15.** how to relate system components and their physical locations to installation information

**K16.** the different types of devices and methods for fixing and mounting systems components and how to select and use them

**K17.** the properties of typical building structures and materials and how to mount and fix system components to them safely and securely

**K18.** safe handling procedures during installation

**K19.** the capabilities, limitations and correct use of tools and system components

**K20.** why you may need to identify the presence of an electrical supply, and how it can be isolated safely

**K21.** where to position the system so that it optimises operational maintenance, access and client and stakeholder requirements

**K22.** the house-keeping requirements at the sites where you install systems

**K23.** why it is important to dispose of waste, debris and surplus material safely and in line with the current relevant legislation and regulations and regulations; industry standard guidelines; your organisation’s quality management procedures and health and safety codes of practice

**K24.** procedures for monitoring and documenting installation progress, variations and non-conformities

**K25** current relevant legislation and regulations; industry standard guidelines; your organisation’s quality management procedures and health and safety codes of practice relevant to the installation and operation of the system and relevant to your level of responsibility

**K26.** the relationship between types of fire and appropriate extinguishing mediums

**K27**. the characteristics of different environments to which the system is being provided

**K28.** the requirements of different stakeholders

**Glossary**

**fixing and mounting devices and methods:** suitable tools and materials with appropriate method statements to enable installation of the mechanical fire protection system

**mechanical fire protection system**: a non-electrical device used for fire protection such as, sprinklers; gas systems; water mist and powder; foam and chemical systems; dry and wet risers; fire mains

**performance requirements:** operation of the mechanical fire protection system with due regards to the manufacturers recommendations and guidelines

**stakeholders:** could include**:**  local fire authority; water undertaker; building control; insurers; government departments; environmental agencies; third party certification bodies

**SFSMFP5**

**Title:** Test and commission mechanical fire protection systems

**Overview**

This standard is aimed at those who install mechanical fire protection systems, and sets out the skills, knowledge and understanding for you to test and commission mechanical fire protection systems. This will involve you planning for the work and carrying out final testing before commissioning the installation of the system.

**Performance Criteria**

**P1.** check that you have the information that you need to commission the system

**P2.** establish appropriate communication arrangements with client representatives and third parties

**P3.** check the onward signals to integrated systems can be verified

**P4.** prepare plans of action for commissioning mechanical fire protection systems that comply with performance requirements, relevant legislation and regulations; industry standard guidelines; your organisation’s quality management procedures and health and safety codes of practice

**P5.** check that required tools, materials and components are available, in good working order and comply with relevant health and safety requirements

**P6.** check that measuring apparatus is calibrated and in working order

**P7.** carry out static tests in accordance with performance requirements for the system and the relevant standard

**P8.**  record actions you take to remedy any identified discrepancies during initial testing

**P9.** record the results of all final tests in a format consistent with performance requirements for the system and the relevant standard

**P10.** complete, collate and issue all system installation documents, including operation and maintenance manuals

**P11.** take action to minimise potential disruption to the clients’ and any third party normal work activities

**P12.** commission the system in line with performance requirements and sequence of operation

**P13.** provide the designated responsible person with a demonstrationof how the installed system works

**P14.** check that sites are clear of tools, components , waste and surplus materials when systems are handed over to clients

**P15.** record test results as you work using approved recording methods and formats

**P16**. carry out proving tests in accordance with specified requirements

**P17.** take action to remedy situations where systems or materials do not meet their operational requirement

**P18.** provide test results in the approved format to the relevant person, within agreed timescales

**P19.** comply with health and safety requirements whilst testing mechanical fire protection systems

**P20.** obtain and provide installation certification information

**Knowledge and understanding**

**K1.** what initial and final tests are required to be carried out and who they are for

**K2.** why you may need to identify the presence of an electrical supply, and how it can be isolated safely

**K3.** the procedure for identifying whether any specialist testing of specific system components is required

**K4.** the capabilities and limitation of the tools and system components that you intend to use, including the manufacturer’s specification or data sheets

**K5.** the tools you must use and why it is important to use the correct tools and system components

**K6.** the procedure to check test and measuring apparatus is in working order and calibrated where necessary and why it is important to do this

**K7.** the procedures to follow in order to set up safe and secure work areas, including for components and tools and why it is important to do this

**K8**. how to communicate effectively with clients and any third parties, including emergency services before and during commission operations in order to maintain their goodwill

**K9.** the purpose and correct use of relevant testing and measuring apparatus

**K10.** the limits of your authority and responsibility in taking direct action to deal with materials and components that do not meet their operational requirement

**K11.** the procedure for recording accurate details of test results, how to interpret test results and make them available to the relevant person and why this is important

**K12.** how to discuss and negotiate testing arrangements with clients and third parties

**K13.** what information you need to confirm that systems are ready to be commissioned, and from where you obtain this information

**K14.** the principles of operation of the system

**K15.** how to confirm that the installation meets the required operational specification

**K16.** the processes and procedures required to enable the system to be operational, and why you must apply them, including commissioning documents

**K17.** what actions you can take to minimise disruption to clients and third

parties

**K18.** what action you can take to deal with problems that arise during commissioning operations

**K19.** current relevant legislation and regulations; industry standard guidelines; your organisation’s quality management procedures and health and safety codes of practice relating to the commissioning, operating and testing of installed systems

**K20.** the relationship between types of fire and appropriate extinguishing mediums

**K21.** characteristics of different environments to which systems are installed

**K22.** the requirements of different fire certification bodies and third party certifications

**Glossary**

**mechanical fire protection system:** a non-electrical device used for fire protection such as, sprinklers; gas systems; water mist and powder; foam and chemical systems; dry and wet risers; fire mains;

**performance requirements:** operation of the mechanical fire protection system with due regard to the manufacturer’s recommendations and guidelines

**system installation documents**: any relevant information provided to the client which specifies the type of mechanical fire protection system, the standard to which it was installed or serviced and any testing information

**designated responsible person:** could include, but not limited to, duty holder; building management; fire marshal/warden; maintenance engineer

**SFSMFP6**

**Title:** Hand over mechanical fire protection systems for operation

**Overview**

This standard is aimed at those who install mechanical fire protection systems, and sets out the skills, knowledge and understanding for you to handover a mechanical fire protection system for operational use.

**Performance Criteria**

**P1.** confirm that final test and commissioning has taken place and the system is in a fully functioning state

**P2.** check that any necessary documentation has been completed, collated and is available for handing over to the relevant person

**P3.** check that clients receive information about their responsibilities for the system, as described in performance requirements

**P4.** make arrangements to instruct users, clients and third parties in the use of the installed system

**P5.** confirm that relevant people have been informed of the intended start and end instructions, including activation of any alarms

**P6.** give demonstrations and instructions to users on the appropriate use of the installed system

**P7.** check that users can operate equipment to manufacturer instructions and guidelines and ensure adequate spares are available

**P8.** confirm with clients that their requirements for a system has been achieved

**P9.** provide information to users on post-installation support in accordance with industry, organisational and client requirements

**Knowledge and understanding**

**K1.** the principles of operation of the installed system

**K2.** what handover documentation needs to be completed and by whom

**K3.** who should be in receipt of different items of handover documentation

**K4**. why it is important to maintain positive and professional relationships with clients

**K5.** the procedure to follow when confirming to the client what post-installation support is available

**K6.** the steps you must take when checking that the system is ready to be demonstrated and handed over to clients

**K7.** how to give instructions and demonstrations in a supportive, positive, logical and methodical manner

**K8.** how to encourage users to seek clarification of anything that they do not fully understand

**K9.** the procedures to follow when checking to confirm that the client’s requirements for an installed system have been met

**K10.** current relevant legislation and regulations; industry standard guidelines; your organisation’s quality management procedures and health and safety codes of practice

**K11.** the relationship between types of fire and appropriate extinguishing mediums

**K12.** characteristics of different environments to which the system is installed

**K13.** the requirements of different fire certification bodies and third party certifications

**Glossary**

**mechanical fire protection system:** a non-electrical device used for fire protection such as, sprinklers; gas systems; water mist and powder; foam and chemical systems; dry and wet risers; fire mains;

**performance requirements:** operation of the mechanical fire protection system with due regard to the manufacturer’s recommendations and guidelines

**SFSMFP7**

**Title:** Test the operational performance of mechanical fire protection

**Overview**

This standard is aimed at those who install mechanical fire protection systems, and sets out the skills, knowledge and understanding for you to test and maintain the operational performance of a mechanical fire protection system. This will involve you diagnosing and rectifying faults, returning the system to working order and signposting any modification work that requires to be taken once the testing is complete.

**Performance Criteria**

**P1** agree testing arrangements with clients and any relevant third parties

**P2** check that test apparatus is working properly and is calibrated before starting tests

**P3.** establish if the mechanical fire protection system is integrated with other systems incorporating any incoming and onward signals

**P4.** test that any incoming and onward signals are functional

**P5.** schedule and carry out testing activities at times that are convenient to clients

**P6.** carry out required testing in line with agreed schedules, current relevant legislation and regulations, industry standard guidelines, your organisation’s quality management procedures and health and safety codes of practice

**P7.** record the results of testing activities, following your organisation’s recording methods and procedures

**P8.** report details of actual or potential deterioration in system performance to the relevant responsible person

**P9.** undertake a hazard review to evaluate and report any changes impacting the effectiveness of the installed system

**P10.** report any changes to the client’s use and purpose to the site

**P11.** follow your organisation’s procedures when responding to notification of faults with the installed system

**P12.** obtain help to diagnose causes of unsatisfactory performance from appropriate persons for matters outside the parameters of your responsibilities

**P16.** record details of proposals offered and corrective actions to be taken

**P17.** inform clients of the nature of the fault and proposed corrective actions

**P18.**obtain any necessary authorisation needed in order to effect the corrective action

**P19.** give clients sufficient details of any reduction of system integrity during testing actions to enable suitable contingency arrangements to be made

**P20.** carry out corrective action relevant to your role and check that corrective actions to restore operational performance of the system have been completed by those responsible for these tasks.

**P21**. confirm that all appropriate records required by your organisation are complete, accurate and have been confirmed as accurate

**P22**. comply with relevant health and safety requirements

**P23.** remove any replaced components from the client’s premises in line with approved procedures

**P24**. carry out tests to confirm the integrity of the corrective action taken in accordance with the relevant health and safety codes of practice

**P25.** check that all maintenance records required by your organisation are complete, accurate and passed to the relevant person before confirming to the client that the system is operational.

**P26**. check for any changes which may influence the effectiveness of the system

**P27**. prepare proposals for modifications that are required to maintain the effectiveness of the existing system which meet the relevant regulations and health and safety codes of practice

**P28.** present proposals for mechanical fire protection system modifications to the client

**P29**. obtain authorisation for modifications to the systems from appropriate persons in line with your organisation’s procedures

**P30.** implement authorised changes to the systems

**P31.** carry out testing and commissioning of any modifications made

**P32**. provide clients with instructions and demonstrations pertinent to any changes made to the system

**Knowledge and understanding**

**K1.** the manufacturer’s instructions and relevant organisational guidelines for carrying out tests and maintenance procedures

**K2.** what specific components are to be tested

**K3**. why you may need to identify the presence of an electrical supply, and how it can be isolated safely

**K4.** how to interpret test results

**K5** the communication protocols to discuss and agree work activities that are mutually acceptable to you and clients

**K6.** changes in sites that may impact on the effectiveness of the installed system

**K7.** the principles of operation of the system being tested, including the expected results of the tests you carry out

**K8.** why it is important to obtain sufficient information about system performance before starting to identify unsatisfactory performance

**K9.** how to confirm whether systems and their performance meet the required operational specification

**K10.** the limits of your authority and responsibility in taking direct action to deal with systems that do not meet operational requirement

**K11.** how to discuss and negotiate fault finding arrangements with clients, including the likelihood of any potential disruptions

**K12.** what actions you can take to minimise disruption to the client and third parties

**K13.** the anticipated issues that may arise and the action you would need to take to deal with them during corrective action operations

**K14.** the processes and procedures you must use to bring systems back into operation, and why you must apply them

**K15.** what documentation you are required to complete

**K16.** why it is important to record details of unsatisfactory performance of systems

**K17.** the action you must take to make the system safe

**K18.** what corrective actions you are authorised to take, and how to carry them out

**K19.** what information you must give clients or users about the corrective actions you have carried out

**K20**. how system performance can be affected by operational changes

**K21**. any associated systems and services that relate to the installed system **K22**.records that you are required to complete, timescales for completion and who should be in receipt of completed documentation

**K23.** how and why it is important to determine client requirements when preparing modifications to clients’ installed systems

**K24.** how and why it is important to identify and record factors that may impact on the proposed modification

**K25**. the importance of having sufficient valid, accurate and up to date source information on which to base proposals for modifications

**K26**. how to negotiate and present proposals for modifications to clients

**K27.** why it is important to maintain positive and professional relationships with clients, including confirming what post-modification support is available to them

**K28**. what you must do to ensure that the modification is ready to be demonstrated and handed over to clients, including what documentation is needed

**K29**. how to give instructions and demonstrations in a supportive, positive, logical and methodical manner

**K30**. , current relevant legislation and regulations, industry standard guidelines, your organisation’s quality management procedures and health and safety codes of practice relating to installed systems

**K31**. appropriate testing methods and procedures

**K32**. why it is important to make sure that test equipment is working properly, and calibrated where necessary

**K33**. how to record accurate details of test results and maintenance activities

**K34**. who should be in receipt of information relating to the outcome of testing and maintenance activities

**K35**. the relationship between types of fire and appropriate extinguishing mediums

**K36**. characteristics of different environments to which the mechanical fire protection system is being provided

**K37**. the requirements of different fire certification bodies and third party certifications

**Glossary**

**associated systems and services:** equipment that can be part of the mechanical fire protection system such as pumps, water supply, detection panel, and alarms

**reduction:** a condition which stops the mechanical fire system operating to its maximum potential

**maintenance activities:** scheduled and non-scheduled maintenance visits and fault-finding procedures

**mechanical fire protection system:** a non-electrical device used for fire protection such as, sprinklers; gas systems; water mist and powder; foam and chemical systems; dry and wet risers; fire mains. This will incorporate the electrical systems required to operate the mechanical fire protection system.

**reduction of system integrity:** an occasion when the mechanical fire protection system is not covering the stated fire rating risk assessment

**designated responsible person:** could include, but not limited to, duty holder; building management; fire marshal/warden; maintenance engineer

**SFSMFP8**

**Title:** Carry out site surveys and testing for a mechanical fire protection system

**Overview**

This standard is for those who design, install, service, maintain or consult on mechanical fire protection systems. It sets out the skills and knowledge and understanding required for you to carry out site surveys and testing in response to clients who require a mechanical fire protection system.

**Performance Criteria**

**P1** Confirm the scope and objectives of the site evaluation with clients

**P2** Confirm you have any permissions or licenses required to carry out the site evaluation

**P3** Check that the individual you are liaising with on behalf of the client is the responsible person to make necessary decisions regarding the installation compliance of the mechanical fire protection system

**P4** record details of the clients’ requirements for a mechanical fire protection system, following your organisation’s procedures and taking into account risks associated with the system , operating environment or individuals’ health and safety

**P5** Clarify with relevant third parties any gaps in information in order to respond to the client’s request, maintaining the confidentiality of the client’s information, sites and systems.

**P6** Confirm that you have all the necessary details from the client in order to carry out the site surveys

**P7** Liaise with the client to gain site access and access to relevant personnel

**P8** Use survey methods appropriate to the type of site and the client’s requirements

**P9** Record details of relevant factors and site characteristics that could impact on mechanical fire protection systems and installation

**P10** Establish the suitability of existing site utilities that may form an integral part of the required system

**P11** Carry out surveys within the agreed timescales in accordance with current relevant legislation and regulations, industry standard guidelines, your organisation’s quality management procedures and health and safety codes of practice

**P12** Confirm that the data gathered is valid and reliable

**P13** Analyse results of the site assessment, taking appropriate action where the analysis reveals problems with the data’s sufficiency, reliability or validity

**P14** Record findings in a format that is appropriate to the nature of the data and in accordance with clients’ specifications

**P15** Provide the client with interpretations about the site in relation to its suitability for installing the mechanical fire protection system, linking the recommendations to the client’s requirements.

**Knowledge and understanding**

**K1** the purpose, scope and objectives of the site assessment and the outputs it aims to produce

**K2** the implications of relevant site restrictions and the legal designations that are in place

**K3** relevant permissions, consents or licenses

**K4** data collection methods for site surveys

**K5** how to evaluate the validity and reliability of the data

**K6** how to estimate the sufficiency of data when conducting a site survey

**K7** the information that you need to prepare accurate mechanical fire protection systems

**K8** why and when you might need to liaise with other people to survey sites

**K9** how to recognise factors that could affect system installation and how to record details fully and accurately

**K10** elementary aspects of building construction, utilities and services

**K11** what utilities and services may be needed to form an integral part of the system, and how to ensure that they are suitable

**K12** how to capture information by producing drawings, sketches, photographs, measurements

**K13** current relevant legislation and regulations, industry standard guidelines, your organisation’s quality management procedures and health and safety codes of practice

**Glossary**

**mechanical fire protection system:** a non-electrical device used for fire protection such as, sprinklers; gas systems; water mist and powder; foam and chemical systems; dry and wet risers; fire mains;

**site characteristics:** the buildings intended physical usage characteristics that may impact on the integrity of the mechanical fire protection system e.g. the addition of ceiling high cupboards, the storing of flammable materials

**survey methods:** the collection of data and information pertaining to the correct installation of the mechanical fire protection system. These methods may include using tools such as drones