
Overview

This standard is for people who manage and implement the commissioning of building services engineering installations.

The person carrying out this work must be able to identify and address the customer's need for building services engineering product configuration. They must be able to commission and transfer control of the installation to the customer, ensuring the customer is satisfied with the work carried out. They must also be able to plan the resources required for the commissioning processes, and ensure accurate records of the commission procedures are completed – including any variations to the project specification.

Performance criteria

Commissioning

- You must be able to:
- P1 identify the **client's requirements** for the configuration of the **building services engineering products**, including any **environmental technologies**
 - P2 plan to configure **building services engineering products**
 - P3 determine and obtain the **resources** required to undertake the configuration
 - P4 check that configuration methods and **procedures** are implemented correctly
 - P5 verify that the configuration meets the **client's** requirements
 - P6 identify and resolve any problems with the configuration
 - P7 ensure that the configuration complies with all relevant approved **procedures**
 - P8 record **information** on the configuration in the appropriate **information** systems
 - P9 specify methods and **procedures** for **commissioning** the building services engineering installation which conform with **client, legal and regulatory requirements** and **industry standards**
 - P10 plan the most appropriate way of **commissioning** building services engineering installations
 - P11 confirm that conditions are suitable to implement the **commissioning** procedures
 - P12 determine and obtain **resources** required to undertake the **commissioning**
 - P13 ensure that the **commissioning** process is implemented correctly
 - P14 identify and resolve any problems with the products and/or **commissioning**
 - P15 assess the results of the **commissioning** process against the building services engineering installation project specification
 - P16 ensure that the results of the **commissioning** process are recorded in the appropriate **information** systems and passed to **relevant person(s)**

Transfer control

- You must be able to:
- P17 ensure that the building services engineering installation is ready for transfer and complies with **legal and regulatory requirements, industry standards** and the project specification
 - P18 provide clear and accurate **information** on the **building services engineering**

products to relevant person(s)

- P19 identify and explain any aspects of the building services engineering installation that vary from the project specification and **requirements**
- P20 obtain acceptance from the client of the **building services engineering products and** installation according to the agreed transfer **procedures**
- P21 ensure that all relevant documentation is correctly completed and recorded in the appropriate **information** systems in accordance with approved **procedures**

Knowledge and understanding

You need to know and understand:

- K1 **requirements** for the configuration of **building services engineering products** including **environmental technologies**
- K2 configuration methods and **procedures**, which manage **hazards** and **risks**
- K3 **resources** required to undertake configuration
- K4 problems with configuration and solutions to configuration problems
- K5 methods and systems to record configuration **information**
- K6 methods and **procedures** for **commissioning** building services engineering installations which comply with **client, legal and regulatory requirements, industry standards** and a project specification
- K7 conditions that are suitable to implement **commissioning**
- K8 **resources** required to undertake **commissioning**
- K9 problems with **commissioning** and solutions to **commissioning** problems
- K10 methods to assess the results of **commissioning** to against a building services engineering project specification
- K11 methods and systems to record results of **commissioning** and associated **information** and pass this **information** to **relevant person(s)**
- K12 **procedures** for transferring control of building services engineering installations which obtain acceptance of the installations
- K13 **procedures** to ensure that building services engineering installations comply with **legal and regulatory requirements** and **industry standards**
- K14 **information** to provide to **relevant person(s)** about building services engineering installations
- K15 aspects of building services engineering installations that vary from agreed specifications and **requirements**
- K16 relevant **documentation** and how to ensure it is correctly completed and recorded in the appropriate **information** system(s)

Additional information

- Scope related to performance criteria**
- 1 Client**
 - 1.1 architect
 - 1.2 contract manager
 - 1.3 main/sub-contractor
 - 1.4 consultant(s)
 - 1.5 purchaser of installation and/or maintenance services or their representative
 - 1.6 other trades and services at the work site

 - 2 Requirements**
 - 2.1 project (e.g. contractual, specification, brief, cost, purpose, location, schedule)
 - 2.2 site (e.g. access, site conditions, occupancy)
 - 2.3 social (e.g. user, client, near neighbours)
 - 2.4 legal and good practice (e.g. environmental, health and safety, management of hazards and risks, codes of practice, legal and regulatory constraints, protection of property, consents for listed buildings and conservation areas, specified technical performance standards)
 - 2.5 business
 - 2.6 whole life (hand-over, durability, fault testing, maintenance)

 - 3 Environmental technologies**
 - 3.1 solar photovoltaic
 - 3.2 solar thermal
 - 3.3 heat pumps (air and ground source)
 - 3.4 combined heat and power installations (CHP)
 - 3.5 grey water recycling
 - 3.6 rainwater harvesting
 - 3.7 biomass
 - 3.8 micro-wind turbine
 - 3.9 micro hydro

 - 4 Resources**
 - 4.1 labour

4.2 plant and equipment

4.3 finance

4.4 IT

4.5 materials and other consumables

5 **Procedures**

5.1 information management

5.2 project management

5.3 risk management

5.4 implementing and monitoring health & safety requirements

5.5 implementing and monitoring environmental requirements

5.6 communication with relevant person(s)

5.7 implementing and monitoring requirements related to listed buildings or conservation areas

6 **Information**

6.1 technical (design documentation, plans, installation specifications, equipment specifications, manufacturers' data, manufacturer's instructions, tender documents, surveys, BIM data)

6.2 functional (user instructions, including the circumstances when professional expertise should be called upon)

6.3 client information (provided by the client including the invitation to tender, any drawings and specifications)

6.4 contractual

6.5 statutory consents

6.6 health and safety

6.7 instructions (verbal, written)

**Range related to
performance criteria****1 Commissioning**

- 1.1 tests and testing
- 1.2 trials
- 1.3 configuration
- 1.4 hand-over

2 Legal and regulatory

- 2.1 building regulations
- 2.2 health and safety regulations (including where appropriate specialist regulations related to gas, electricity, hazardous substances, lifting, manual handling, noise, design, provision and use of work equipment regulations, display screen at work regulations)
- 2.3 control of waste
- 2.4 customer/consumer rights
- 2.5 planning
- 2.6 recycling
- 2.7 listed buildings
- 2.8 conservation areas

3 Industry standards

- 3.1 building regulations
- 3.2 codes of practice
- 3.3 British Standards
- 3.4 EU standards
- 3.5 manufacturers' instructions
- 3.6 BIM protocols (where appropriate)
- 3.7 competence/skills card schemes

**Scope related to
knowledge and
understanding**

1 Client

- 1.1 architect
- 1.2 contract manager
- 1.3 main/sub-contractor
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understanding****1 Requirements**

- 1.1 project (e.g. contractual, specification, brief, cost, purpose, location, schedule)
- 1.2 site (e.g. access, site conditions, near neighbours)
- 1.3 social (e.g. user, client)
- 1.4 legal and good practice (e.g. environmental, health and safety, management of hazards and risks, codes of practice, legal and regulatory constraints, protection of property, consents for listed buildings and conservation areas, specified technical performance standards)
- 1.5 business
- 1.6 whole life (hand-over, durability, fault testing, maintenance)

2 Procedures

- 2.1 information management
- 2.2 project management
- 2.3 risk management
- 2.4 implementing and monitoring health & safety requirements
- 2.5 implementing and monitoring environmental requirements
- 2.6 communication with relevant person(s)
- 2.7 implementing and monitoring requirements related to listed buildings or conservation areas

3 Hazards

- 3.1 site hazards (e.g. slip and trip hazards, electricity, fire, flooding, erosion, corrosion)
- 3.2 human hazards (e.g. human error, visitors)
- 3.3 hazardous substances (e.g. gas, dust, fumes)

4 Risks

- 4.1 technical
- 4.2 financial
- 4.3 scheduling
- 4.4 environmental
- 4.5 social
- 4.6 legal

4.7 contractual

4.8 health and safety

5 Resources

5.1 labour

5.2 plant and equipment

5.3 materials

5.4 finance

5.5 IT

5.6 materials and other consumables

6 Information

6.1 technical (design documentation, plans, installation specifications, equipment specifications, manufacturers' data, manufacturer's instructions, tender documents, surveys, BIM data, physical models)

6.2 functional (user instructions, including the circumstances when professional expertise should be called upon)

6.3 client information (provided by the client including the invitation to tender, any drawings and specifications)

6.4 contractual

6.5 statutory consents

6.6 health and safety

6.7 instructions (verbal, written)

7 Legal and regulatory

7.1 building regulations

7.2 health and safety regulations (including where appropriate specialist regulations related to gas, electricity, hazardous substances, lifting, manual handling, noise, design, provision and use of work equipment regulations, display screen at work regulations)

7.3 control of waste

7.4 customer/consumer rights

7.5 planning

7.6 recycling

7.7 listed buildings

7.8 conservation areas

8 Industry standards

8.1 building regulations

8.2 codes of practice

8.3 British Standards

8.4 EU standards

8.5 manufacturer's instructions

8.6 BIM protocols (where appropriate)

8.7 competence/skills card schemes

9 Commissioning

9.1 tests

9.2 trials

9.3 configuration

9.4 hand-over

10 Relevant person(s)

10.1 customer(s)/client(s)/client representative(s)/user(s)

10.2 supervisor(s)/site manager(s)/contract manager(s)

10.3 other contractors/trades/consultants

10.4 health and safety officers/managers

10.5 planning advisors/officers

11 Documentation

11.1 certificates

11.2 graphical

11.3 none graphical

11.4 listed building consents

Glossary

Building services engineering products

Assets, components, equipment, materials, processes, products, services, systems

External Links Links correct at time of NOS approval

- Health & Safety Executive Documents <http://www.hse.gov.uk/pubns>
- The quality of buildings and building work in England
<https://www.gov.uk/government/policies/providing-effective-building-regulations-so-that-new-and-altered-buildings-are-safe-accessible-and-efficient>
- The quality of buildings and building work in Wales
<http://wales.gov.uk/topics/planning/buildingregs/?lang=en>
- The quality of buildings and building work in Northern Ireland www.buildingcontrol-ni.com/
- The quality of buildings and building work in Scotland
<http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards>
- British Standard 7671: – Requirements for Electrical Installations
<http://www.theiet.org/resources/wiring-regulations/>
- Carriage of dangerous goods authorisations
<https://www.gov.uk/government/publications/carriage-of-dangerous-goods-authorisations>
- The requirements and information on microgeneration
<https://www.gov.uk/government/publications/microgeneration-strategy>
- Refrigeration and Air Conditioning Standards
http://www.iso.org/iso/home/store/catalogue_tc/catalogue_tc_browse.htm?commid=50356
- F-Gas guidance - <https://www.gov.uk/managing-fluorinated-gases-and-ozone-depleting-substances>
- BRA Jointing of Copper Pipework Guide
<http://www.feta.co.uk/associations/bra/downloads>
- Waste Electrical and Electronic Equipment recycling (WEEE):
www.hse.gov.uk/waste/waste-electrical.htm
- Control of Substances Hazardous to Health (COSHH): www.hse.gov.uk/coshh
- Construction (Design and Management) Regulations:
<http://www.hse.gov.uk/construction/cdm.htm>

SUMPM15

Commission building services engineering installations



Developed by	SummitSkills
Version number	1
Date approved	March 2014
Indicative review date	April 2018
Validity	Current
Status	Original
Originating organisation	SummitSkills
Original URN	STE11 & EVTS15
Relevant occupations	Building Services Engineering Technician; Supervisor; Team Leader; Project Manager; Managers; Owner/Manager; Contract Manager; Air conditioning and Refrigeration Engineers; Electricians; Heating and Ventilation Engineers; Plumbers; Plumbing
Suite	Building Services Engineering Technology & Project Management
Key words	air conditioning; RAC; H&V; heating and ventilating; refrigeration; cooling systems; installing; commissioning; health and safety; building services engineering; plumbing; electrical; management; project management
