



## F9ND 04 – Perform Routine and Planned Maintenance Tasks on H&V Electrical Components

This Unit comprises of the following National Occupational Standards (NOS)

## SUMMES12

### Service and maintain mechanical systems, equipment and components



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#### Overview

This unit is about what is required to service and maintain a range of systems and components in order to satisfy industry requirements.

The person carrying out this work must be able to undertake servicing of appliances for the different systems

They are expected to establish the service and maintenance requirements for the systems and components and carry out service and maintenance of systems and components.

They must be able to service and maintain a range of systems and components, follow instructions and job information, and complete accurate service and maintenance records and schedules.

# SUMMES12

## Service and maintain mechanical systems, equipment and components

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### Performance criteria

*You must be able to:*

- P1 carry out service and maintenance activities using procedures which comply with industry requirements
- P2 service and maintain system components to ensure continued effective operation of the system
- P3 complete records to provide an accurate history of the service and maintenance of system components

# SUMMES12

## Service and maintain mechanical systems, equipment and components

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### Knowledge and understanding

*You need to know and understand:*

- K1 how to use performance specifications for systems and components, and maintenance procedures necessary to restore or maintain the continued performance of systems and components
- K2 the maintenance procedures necessary to ensure compliance with industry requirements for routine and non-routine service and maintenance activities
- K3 how to complete records and reports of the maintenance of systems and components
- K4 the action to take when the system or component does not work to full performance specification

# SUMMES12

Service and maintain mechanical systems, equipment and components

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**Developed by** SummitSkills

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**Status** Original

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**Originating organisation** SummitSkills

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**Original URN** M12

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**Relevant occupations** Building and construction; Skilled Trades Occupations

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**Suite** Mechanical Engineering Services

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**Key words** Servicing of appliances for different systems

## SUMMES25

### Inspect and test mechanical systems, equipment and components



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#### Overview

This unit is about carrying out pre-commissioning checks and tests on systems.

The person carrying out the work must be able to undertake the various checks and tests necessary before the system is brought into operation.

They are required to check the operation and correct position of components. They must also carry out tests to ensure there are no leaks and undertake cleaning or flushing of the system.

In the case of ductwork, there is a specified, permissible level of air leakage.

It is important that they are aware of the effect that isolating part of a system has on the full system.

# SUMMES25

## Inspect and test mechanical systems, equipment and components

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### Performance criteria

- You must be able to:*
- P1 confirm that the system or components installation complies with industry requirements
  - P2 check that input services to the system components are suited to their intended purpose
  - P3 check system or components for soundness using procedures that comply with industry
  - P4 carry out pre-commissioning tests and checks in accordance with industry requirements
  - P5 check that the system cleanliness, additives and charging comply with industry

# SUMMES25

## Inspect and test mechanical systems, equipment and components

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### Knowledge and understanding

*You need to know and understand:*

- K1 the procedures, equipment and legislative requirements for applying specified tests to systems
- K2 the methods of establishing that input services adequately supply all components within the system
- K3 the methods of connecting components to systems
- K4 the actions to take where pre-commissioning checks or tests reveal basic or complex system or component defects
- K5 how to complete pre-commissioning documentation confirming the safe pre-commissioning of systems and components



# SUMMES25

Inspect and test mechanical systems, equipment and components

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**Relevant occupations** Building and construction; Skilled Trades Occupations

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**Suite** Mechanical Engineering Services

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**Key words** pre-commissioning check, clean & flush, leaks

## EUSDSG3.43

# Decommission heating & ventilation systems, equipment and components



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### Overview

This unit is about de-commissioning systems, ready for further work or long-term isolation. If the system is to be permanently de-commissioned, this may involve the removal of components.

The person carrying out the work is also required to make arrangements with users of the work location and ensure their safety throughout the process.

Note: This national occupational standard (Ref ID M26) belongs to SummitSkills – the Sector Skills Council for the Building Services Engineering Sector.

## **EUSDSG3.43**

### **Decommission heating & ventilation systems, equipment and components**

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#### **Performance criteria**

*You must be able to:*

- P1 liaise with other persons at appropriate points within the de-commissioning process to minimise disturbance to work routines
- P2 check that conditions within the systems or components will permit safe de-commissioning
- P3 de-commission systems or components using tests and procedures which comply with industry requirements
- P4 take precautionary actions to ensure that de-commissioned systems or components do not prove a safety hazard
- P5 check that the de-commissioned systems and components are left safe, in line with industry requirements

## EUSDSG3.43

### Decommission heating & ventilation systems, equipment and components

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#### Knowledge and understanding

*You need to know and understand:*

- K1 the importance of confirming the system functions, and the outcomes of suspending the operation of the system
- K2 the need to liaise with others whose procedures or routines may be affected by the suspension of the system operation
- K3 the potential hazards that could arise from de-commissioning activities and the checks to be carried out before de-commissioning takes place
- K4 de-commissioning procedures for temporary and permanent de-commissioning of systems, including organisational requirements
- K5 the precautions to ensure that de-commissioned systems do not prove a safety hazard, and the necessary measures to prevent systems being brought into operation, including using the correct safety and warning notices
- K6 how to safely collect and dispose of system contents that may be hazardous to health or harmful to the environment
- K7 how to complete systems de-commissioning records
- K8 system contents requiring recovery for re-use or disposal
- K9 the operating and working principles of the system to be decommissioned
- K10 what action to take when normal emptying or shut off mechanisms do not operate

## **EUSDSG3.43**

### Decommission heating & ventilation systems, equipment and components

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**Originating organisation** SummitSkills

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**Original URN** DSG3.43

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**Relevant occupations** Engineering; Science and Engineering Technicians

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**Suite** Down Stream Gas

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**Key words** decommission, heating, ventilation, systems, equipment, components

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## Overview

This unit is about commission systems following the appropriate pre-commissioning tests and checks being carried out.

It is about bringing the system into operation and ensuring it operates effectively as intended.

The person carrying out this work is required to check that components are installed correctly, ensure there are no leaks and undertake cleaning and flushing.

For ductwork there is a specified permissible level of air leakage. It is not intended that they meet the demands of commissioning specialists. As a guide, they should be able to operate on heating systems with an input of up to 60kW for domestic installation and 150kW for industrial and commercial.

It is important that they are aware of the effect that isolating part of a system has on the full system.

# SUMMES27

## Commission mechanical systems

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### Performance criteria

*You must be able to:*

- P1 ensure that the necessary information on the system or component performance is available
- P2 liaise with other persons at appropriate points within the commissioning process to minimise disturbance to work routines
- P3 check the correct function of systems or components against performance requirements
- P4 adjust system controls to establish that system components meet design specification
- P5 provide the customer with information necessary to the continuing operation of the system or component

# SUMMES27

## Commission mechanical systems

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### Knowledge and understanding

*You need to know and understand:*

- K1 the sources of information on the performance of systems or components
- K2 the procedures for establishing correct system or component performance and checking against the job specification
- K3 the routines and sequences for commissioning systems or components
- K4 the points in the commissioning process where co-operation and liaison with other trades and customers may be required
- K5 where to access user information appropriate to different systems and components
- K6 how to complete commissioning documentation confirming the safe commissioning of systems and components
- K7 system handover procedures and demonstrating the operation of systems and components to end-users
- K8 the actions to take when components being commissioned do not meet performance requirements



# SUMMES27

## Commission mechanical systems

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**Relevant occupations** Building and construction; Skilled Trades Occupations

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**Suite** Mechanical Engineering Services

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**Key words** commission, test, clean & flush