

SUMHV11 (SQA Unit Code – H9LN 04)

Clean industrial and commercial ventilation systems



Overview

This standard is for people who clean industrial and commercial ventilation systems.

The person performing this work must be able to comply with the correct procedures and practices for cleaning industrial and commercial ventilation systems. This work must be in accordance with the current versions of the appropriate industry standards and regulations; the specification; industry recognised working practices; the working environment and the natural environment. They must be able to:

- prepare work locations to undertake ductwork cleaning in a safe working environment
- clean various types of ductwork in a variety of different ventilation systems in accordance with the appropriate industry standards
- update and maintain records appropriately
- communicate effectively with work colleagues, customers and supervisors

Please note that industry specific terminology is identified by *italic* text and its explanation and/or definition can be found in the glossary of this standard.

Performance criteria

To perform this work in accordance with the current versions of *the appropriate industry standards and regulations, the specification, working practices, the working environment and the natural environment*

You must be able to:

- P1 verify that the job information and documentation are current and relevant and that the **plant**, *access equipment* and cleaning equipment are fit for purpose
- P2 confirm before work starts that the work location and work area can be accessed safely and has been checked for the risk to other personnel on the site, and take appropriate action if a risk is present
- P3 select and use cleaning materials and equipment suitable for the **working environment** in which the cleaning is taking place
- P4 safely isolate the **system** in order for cleaning to be performed
- P5 produce a risk assessment and method statement for the work to be performed, including the identification and use of *personal protective equipment*, in accordance with the **working environment**
- P6 install **access doors** to the **system** where necessary
- P7 clean ventilation **system** and its **components** using the appropriate **cleaning methods and techniques** for the **ductwork**
- P8 safely remove grease from the **system**
- P9 perform the required **tests** to determine the **system's** surface condition
- P10 safely reinstate the **system** and its **components** after cleaning activities have been completed
- P11 monitor and record the assessment of **ductwork** cleanliness
- P12 comply with industry practices and **organisational procedures** to ensure the co-ordination of **site services** and the activities of other trades
- P13 confirm with the **relevant people**:
 - P13.1 those necessary variations to the planned programme of work
 - P13.2 the correct actions to be taken to ensure that any variations to the planned programme of work will minimise the potential for hazard and risk
- P14 implement **organisational procedures** for the safe transport and/or disposal of waste material in accordance with supplier and manufacturer instructions

Knowledge and understanding

You need to know and understand:

To perform this work in accordance with the current versions of *the appropriate industry standards and regulations, the specification, working practices, the working environment and the natural environment*

- K1 the applications, advantages and limitations of different **systems**
- K2 the applications, advantages and limitations of different types of **ductwork**
- K3 the applications, advantages and limitations of **cleaning methods and techniques** in relation to the **working environment**
- K4 the **appropriate industry standards and regulations** relevant to cleaning **systems** and their component parts
- K5 how to verify that job information and documentation is current and relevant and that the **plant**, *access equipment* and tools are fit for purpose
- K6 how to produce a risk assessment and method statement for the work to be carried out, including the identification and use of *personal protective equipment*, in accordance with:
 - K6.1 the **system's** design
 - K6.2 the conditions of the **working environment**
 - K6.3 **organisational procedures**
- K7 how to safely store **cleaning consumables** and materials
- K8 work area preparation requirements and methods
- K9 how to interpret diagrams and drawings of the **system** to locate the **components** that require cleaning
- K10 the **organisational procedures** for confirming, before work starts, that the work location and work area can be accessed safely and has been checked for the risk to other personnel on the **site**, and for taking appropriate action if a risk is present
- K11 how to safely isolate and reinstate the **system**
- K12 the requirements and different types of access to **systems**
- K13 the different methods to install **access doors** in **systems**
- K14 how to use different materials and equipment used in cleaning **systems**
- K15 the **methods and techniques** for cleaning **systems** and their associated **components**
- K16 the methods and procedures for cleaning, removing and reducing grease in **systems**
- K17 the different methods of **testing** and recording system cleanliness of **systems**

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- K18 the **organisational procedures** for confirming with the **relevant people** the appropriate actions to be taken to ensure that any variations to the planned programme of work will not introduce a hazard and have minimum negative impact on the cleaning work to be undertaken
 - K19 the methods for the safe transport and/or disposal of waste material in accordance with suppliers' and manufacturers' instructions

Additional information

Scope related to performance criteria and knowledge and understanding:

The contexts and circumstances below identify where and when the NOS could apply.

1 Working Environment (Internal and/or External)

- 1.1 commercial
- 1.2 industrial
- 1.3 agricultural/horticultural
- 1.4 leisure and entertainment
- 1.5 residential medical and care facilities
- 1.6 *public services establishments*
- 1.7 pre 1919 traditional/historic buildings

2 Systems

- 2.1 supply
- 2.2 extract
- 2.3 re-circulation
- 2.4 low, medium and high pressure/velocity air
- 2.5 local exhaust ventilation
- 2.6 kitchen extract system

3 Organisational procedures

- 3.1 information management
- 3.2 project management
- 3.3 risk assessment/management
- 3.4 implementing and monitoring health & safety requirements and issues
- 3.5 implementing and monitoring issues relating to the *natural environment*
- 3.6 customer service
- 3.7 accident reporting
- 3.8 emergencies
- 3.9 communication with relevant people

4 Plant

- 4.1 generators

4.2 transformers for low voltage hand-tools

4.3 lifting equipment

4.4 *access equipment*

4.5 air compressors

4.6 steam cleaning equipment

4.7 negative vacuum fan

5 **Testing**

5.1 deposit thickness test

5.2 wet film thickness test (for kitchen extract systems)

5.3 vacuum test

6 **Cleaning methods and techniques (wet & dry)**

6.1 mechanical brushing method

6.2 compressed air whip/skipper ball method

6.3 manual cleaning methods (e.g. wipe, vacuum, brushing, scrape, air lance)

6.4 chemical (e.g. Biocide disinfection)

6.5 steam/high pressure water wash

6.6 blasting (remote or direct)

6.1 negative pressure extraction

7 **Ductwork**

7.1 rectangular

7.2 circular and flat oval

7.3 plastic

7.4 fire rated

7.5 flexible

8 **Access doors**

8.1 rectangular doors

8.2 curved doors

8.3 fire rated doors

8.4 saddle doors

8.5 quick release catches

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8.6 sealing gasket

Range related to performance criteria and knowledge and understanding:

The contexts and circumstances below identify where and when the NOS must apply

1 Relevant people

- 1.1 *customers/clients*
- 1.2 client representatives
- 1.3 supervisors
- 1.4 site/contract manager
- 1.5 other contractors/trades
- 1.6 members of the public
- 1.7 work colleagues

2 Components

- 2.1 air handling units
- 2.2 filters
- 2.3 terminal units
- 2.4 attenuator/silencers
- 2.5 plenum boxes
- 2.6 dampers
- 2.7 heater/cooler batteries
- 2.8 fans/air turning vanes
- 2.9 fan coil units
- 2.10 access doors
- 2.11 kitchen hoods and grease filters
- 2.12 building management system sensors

3 Relevant documents

- 3.1 drawings
- 3.2 *specification*
- 3.3 manufacturer's instructions
- 3.4 company procedures
- 3.5 test certificates
- 3.6 industry standards and codes of practice

Glossary

Appropriate industry standards and regulations for:

- construction design and management
- controlling noise at work
- controlling asbestos in the work place
- controlling substances hazardous to health
- electricity at work
- managing health and safety at work
- manual handling operations
- personal protection at work
- provision and use of work equipment
- the quality of buildings and building work in England, Northern Ireland, Scotland and Wales
- working at heights
- workplace health and safety and welfare
- environmental protection
- heritage/historic building requirements
- brazing/jointing standards
- carriage of Dangerous Goods (Classification, Packaging and Labelling) and use of transportable pressure receptacles

Specification

A verbal and/or documented instruction that is an explicit set of requirements for installing identified systems, equipment or products, to be satisfied by materials, components, design, processes, procedures, data management and/or service(s).

Clients and customers

- purchaser of installation services
- other trades and services at the work site
- colleagues within the same organisation
- architect
- contract manager
- main/sub-contractor
- consultant

- local authority representatives
- work colleagues

A public services establishment can be a:

- hospital/medical centre
- school/college/university
- museum/library
- prison
- military base
- car park
- place of worship

Natural environment

The climate, weather and natural resources that effect and are affected by human life and economic activity

Working practices

Methods, techniques and procedures that are adopted for carrying out specific tasks that ensures workers' exposure to hazardous situations is controlled in a safe manner when:

- working with equipment, tools and plant
- working with materials and substances (hazardous and non-hazardous)
- manual handling lifting
- using lifting equipment
- using personal protective equipment (PPE)

Access equipment

- scaffold
- ladders
- steps
- staging
- trestles
- mobile elevated work platform (MEWP)

Personal protective equipment (PPE)

- safety helmets/hats
- hairnets
- gloves
- safety steel toe capped boots/shoes
- safety spectacles/goggles
- face shields/visors
- ear plugs/muffs
- conventional or disposable overalls, boiler suits, aprons, chemical suits
- respiratory protective equipment (RPE)

Links to other NOS

EUSDSG3.10 – Install gas warm air central heating systems and appliances
EUSDSG3.11 - Maintain gas warm air central heating systems and appliances
EUSDSG3.3 – Install gas water heating and wet central heating appliances
EUSDSG3.5 – Install gas ductwork up to 35mm BS6891
EUSDSG3.60 – Gas tightness testing and direct purging – IGE/UP/1B
SUMETS1 Plan, prepare and install Environmental Technology Systems
SUMETS7 Service and Maintain Environmental Technology Systems
SUMETS10 Inspect & Commission Environmental Technology Systems
SUMETS11 Diagnose & Rectify Faults in Environmental Technology Systems

External Links

Links current 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
<http://www.dfpni.gov.uk/building-regulations>
- The quality of buildings and building work in Scotland
<http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards>
- 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>
- BRA Jointing of Copper Ductwork Guide
<http://www.feta.co.uk/associations/bra/downloads>
- 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>

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