

Health and Safety Department

# **Using Local Exhaust Ventilation Systems**

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## **Document Control**



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### 1. Purpose

This policy has been created to assist in the management of processes in accordance with the duties set out in Loughborough University (LU) control of substances hazardous to health policy.

Specifically, this Policy provides guidance and control measures in the installation, operation, maintenance and annual examination of Fume Cupboards, Local Exhaust Ventilation and Microbiological Cabinets. Herein referred to as LEV systems. Legal requirements are set out in **Appendix 1.** 

### 2. Scope

This policy applies to all areas and installations on the Loughborough University site. Installations include Fume cupboards externally vented and recirculating types, all local ventilation control measures integrated into the building and freestanding.

### 3. References

- Loughborough University Control of substances Hazardous to Health Policy
- The Control of Substances Hazardous to Health Regulations (COSHH) 2002
- EH40 Workplace Exposure Limits: Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations 2002 (as amended); January 2020.
- BS EN 14175 parts 1-7: Requirements for fume Cupboards
- BS 7989:2001 Specification for re circulatory filtration fume cupboards
- HSG 258 Controlling airborne contaminants at work a guide to local exhaust ventilation (LEV).
- INDG408 HSE guide to buying and using local exhaust ventilation (LEV).
- INDG409 HSE workers guide to local exhaust ventilation (LEV).
- BS 5726:2005 (replaces BS 5276 1992 2&4) Installation, selection, use Microbiological cabinets.
- BE EN 12469:2000 Performance criteria and testing Microbiological cabinets.

### **4.** Definitions

Local Exhaust Ventilation (LEV) – Engineering control system to reduce exposure to airborne contaminants such as dust, mist, fume, vapour, and gas. Including Microbiological cabinets.

Point – this is where the contaminated extract air is released to a safe place with no risk of reentering the workspace.

Thorough examination and testing (TExT) – The procedures and methods with qualitative and quantitative methods as detailed in HSG 258- subsection 'Carrying out thorough examination and testing.

#### 5. Responsibilities

#### 5.1 Organogram

The following Organogram indicates the lines of responsibilities relating to this policy. This is a pictorial representation of the lines of communication.



### Loughborough University Organisational Chart for Local Exhaust Ventilation





#### Duty Holder: VC / COO (senior person responsible)

The Vice Chancellor (VC) or Chief Operating Officer (COO) is the Statutory Duty Holder and, as the senior person responsible, has overall accountability for all aspects of the management of health and safety in the University organisation.

#### Designated Person: Dean of School / Director of Professional Service

A person appointed by Loughborough University who has managerial authority and responsibility for the control of health and safety legislation within the School / Professional Service.

#### **Duty Authorised Person**

A person, either employed by the University or another organisation, with the required knowledge, training, and experience, appointed by the Dean / Director in writing, to take managerial responsibility for the implementation of this policy and procedures for a specific area of health and safety legislation.

#### Deputy Responsible Person

A person, either employed by the University or another organisation, possessing proficient technical knowledge and having received appropriate training, appointed by the Duty. Authorised Person in writing to take responsibility for the implementation of policy and procedures as specified of a specific area of H&S legislation.

#### **Competent Person**

The operative / individuals, either employed by the University or another organisation, recognised by the Authorised Person as having the competence to undertake the task and follow the relevant process / procedure. This person undertakes the task at the place of work.

#### 5.2 Individual Responsibilities

#### Director of E&FM /Dean of School /Director Professional Service/ Designated Tenant will:

Appoint and ensure the competency of the Duty Authorised Person, by ensuring that the person has suitable ability, experience, training, and resources to enable them to carry out the duties defined in this policy.

Ensure arrangements are in place to fully discharge the requirements of this policy.

Ensure that the policy and guidance documents are available and accessible for all persons with responsibilities under this policy.

Receive reports on, and review effectiveness of this policy in consultation with the relevant Duty Authorised Person and the Health, Safety Manager.

#### Duty Authorised Person (DAP) will:

Review and propose updates to this Policy when appropriate.

Ensure that suitably competent advisors are available to support the design and selection of new local exhaust ventilation systems installations.



person has suitable ability, experience, training, and resources to enable them to carry out the role.

Communicate by whatever means suitable, information to the employees with regards to relevant information on the risks and control measures being undertaken.

Chairing appropriate reviews and forums and ensure that an audit of this policy and associated procedures are undertaken.

Undertake periodic review of the policy and procedures of tenants.

#### Dept. / School Deputy Responsible Person will:

Manage the day-to-day safe operation of the LEV system, ensuring regular checks are undertaken, that faults are acted upon. The logbook (Appendix 3 Logbook Contents and checklist) is completed, maintained, and retained with the LEV. Staff/students are trained.

#### Users will:

Use the equipment within its designed capabilities, highlight any problems to the AP. Follow training received and complete the logbook as required.

#### 5.3 Organisational Responsibilities

#### LU User Department/School/Associated Company will:

Carry out risk assessment (including COSHH risk assessments) which identifies suitable control measures and to monitor the effectiveness of any control measure including the use of the LEV. Ensure that the LEV is operating in such a way that adequate control is maintained. Allocate specific responsibilities for checks and maintenance, (these may overlap) for example.

Operator	Make daily checks, report faults
Safety/workers'	Make weekly, monthly checks
representative	
Supervisor	Make weekly checks, arrange repairs, correct deviations from
	the correct way of working, record findings and actions
Section Manager/Technical	Identify problems, receive regular reports from the supervisor,
officer	be responsible for maintenance and testing
Facility Management Dept.	Repair faults, carry out maintenance, arrange annual
	thorough examination

If the LEV discharges and/or can become contaminated with toxic, infective, or otherwise harmful substances, put in place 'permits to work' and/or formal method statements for people to work on the system or adjacent to the discharge point(s).

Review the risk assessment and control measures in the event of any change of activity, or if there is suspicion that control of exposure is not being achieved.

Maintain a logbook for each LEV system, containing schedules and forms to keep records of checking, maintenance, and repair (Appendix 3 Logbook Contents and checklist)





Loughborough

an annual basis and carry out assessment of control effectiveness at least annually; carry out any corrective action.

Stop the work, if any examination and test or any assessment of control effectiveness shows that the LEV is not adequately controlling exposure to airborne contaminants. If it is determined that work can continue while repairs are arranged provide employees/students with protection.

#### Estates & Facilities Management will:

Appoint suitably qualified Maintenance Contract Service. Providers to undertake the annual thorough examination and test, to include thorough visual/structural examination and measure technical performance.

Receive the annual thorough examination test report/certificate and retain for 5 years.

Advise departments/schools on procedures/controls/supervision need improving whenever there is a reason to suspect that they are no longer valid. I.e., when an area of the building is taken out of use, exam and test results contain long lists of repairs and poor performance etc.

Ensure immediate action in response to out of specification results. Advise the department operating the system of the results and remedial actions to be undertaken.

Ensure that any remedial works undertaken is carried out on time, to specification and are recorded.

#### Contracted Annual thorough examination and test, Service Provider will:

Have a suitable and sufficient management structure to ensure professional competence at all times.

Ensure that all their personnel are competent, suitably trained, certificated, and experienced, and have the necessary equipment to carry out their duties.

Carry out the thorough examination and test against the required performance standard. For LEV systems with no documentation available, an adequate 'thorough examination and test' will take the form of an initial TExT report any subsequent tests will be carried out under the Routine TExT reports.

Provide a report/certificate of the examination to the department/school nominated deputy including prioritized action plan the dep't/school needs to address.

Attach 'tested' label to the LEV, including the name of the examiner and the date of the next test, passed systems should include green pass labels on each extract point as a clear indication to users. If LEV has clearly failed then Attach red 'failed' label to the LEV, notify E&FM and the dept/school of urgent action. Inform the E&FM Contracts Supervisor if physical access or operations cannot be completed. Capture hoods shall also have a maximum safe working distance label attached to the extract point.

Produce and update a schedule of all LEV system and hoods tested, recording location, asset reference, fail/pass status, fault details, advisory items and action required.



#### E&FM Engineering, Maintenance and Sustainability will:

Support schools/departments by providing technical advice on plant etc. following a department/school risk assessment.

When completing new or modified installations, documentation is provided to the department/School and E&FM as specified within the Loughborough University Engineering Specification. A sample of this information is as follows:

- A user manual with general specification of what the LEV system is designed to control, how it works, how to use it, maintenance, and spare parts.
- A Logbook
- An Initial TExT report or suitably detailed commissioning report, including system description, drawings, performance specification, results of tests carried out and correct usage.

Check any modifications or changes to existing installations are carried out under the site change control process and that all associated drawings, Risk Assessments, and testing schedules are updated.

#### 6. Control Principles

The control principles listed below are written to match the lifecycle of the LEV systems, starting with design / installation, and finishing with decommissioning and removal. Due to the LEV system types and range of complexity used by Loughborough University in controlling airborne contaminants detail Specification within this policy will not be inclusive; Appendix 2 Checklist and Technical guidance will be used as LU standard of good practise.

Legal requirements and duties placed on those concerned with LEV (including manufacture, design, supply, commissioning, use, maintenance, testing etc.) are detailed in Appendix 1.

#### 6.1 Risk Management

It is the user department/ school responsibility for the COSHH risk assessment that identifies suitable control measures and to monitor the effectiveness of any control measure including the use of LEV.

Risk assessments shall identify the required performance of the LEV system to ensure effective containment of any hazardous substance. The COSHH risk assessment shall be reviewed whenever there is reason to believe that it is no longer valid (e.g., due to changes in plant, equipment or new information about risks or control measures).

LU Control of Substance hazardous to health policy defines the operational duty in broader detail.

Departments/Schools will assess a benchmark for the specification of the LEV; Control specification COSHH Essentials (<u>www.Coshh-tool.hse.gov.uk/</u>) can identify a control solution.

Additional standards should be reviewed to ensure that the system complies with the standards set down relating to in biological containment.



#### 6.2 Design and Installation

All design and installation works are to be managed by an engineering representative of E&FM (E&FM Engineering or appointed specialist/consultant).

The installation or refurbishment of any LEV system should be undertaken in accordance with Latest HSE guides, relevant University Engineering standards, Professional bodies such as British Occupational Hygiene society, institution of Occupational safety and Health, Heating, and ventilating contractor's association. Particular attention is to be paid to the appointment of suitable contractors, the design in accordance with regulations & guidance, appropriate installations for the contaminants identified to be used, the co-ordination of the works between E&FM, Schools/Dept, and contractors to ensure the Health, Safety & Welfare of building users.

Appendix 2 identifies good practise and standards LU will meet.

#### 6.3 Commissioning

On completion of the installation the system must be commissioned prior to handover. The trained commissioning engineer will take measurements in accordance with relevant guidance and compare with design intent. The commissioning engineer will attend to non-compliances. The results are to be recorded within the LU Initial TExT report or an equally detailed commissioning report and presented to the E&FM LEV DAP for review and sign off. A copy is then given to the School/Department and a record kept within E&FM, as part of the Operating and Maintenance (O&M) manuals. Any O&M manual shall also include the COSHH risk assessment, schematic, and layout drawings of the system in AutoCAD format, records of installation and details of maintenance procedure.

When the equipment has been commissioned and is ready for operational use, E&FM shall ensure that suitable and sufficient training is given to the receiving School/Dept by the installer of the equipment. This training will involve the School Senior Technical Officer (STO), or school safety officer (SSO) being briefed by the installer on the equipment, including what to do in the event of an emergency. Any relevant documentation, including drawings, capabilities of the system etc. shall also be provided to the School STO and it will be their responsibility to store this in a retrievable format.

#### 6.4 Operation, checks and maintaining the LEV's

There are different types of LEV systems in use throughout LU. Any subsequent training of end users (students, researchers, and technical staff etc.) in how to safely use the LEV system shall be the responsibility of the School/Dept, and they shall induct / train end users accordingly and give people responsibility for: -

- Maintaining a LEV logbook
- Producing the schedule of in year checks
- Daily, weekly, monthly checks as scheduled in the LEV Logbook
- Record findings and actions in the LEV logbook
- · Identify problems, arrange repairs
- · Correcting deviations from correct way of working
- Scheduling Maintenance and testing in year
- Assessing control effectiveness in year

The Environment Agency has not produced any guidance specifically for the operation of LEV as "it is unlikely that laboratory scale operations produce sufficient fume discharge to merit inclusion in environmental regulations". Therefore, the use of fume cupboards for day-to-day laboratory experiments is not controlled by environmental legislation, however under no



circumstances LEV's should be used for the large scale "disposal"

of volatile compounds or substances. Guidance on the disposal of Hazardous Waste is provided by LU Environment policies and guidance notes.

#### 6.5 Annual thorough Examination and Testing

Annual thorough examination and testing will be considered in three stages:

- 1. Thorough Visual and structural examination
- 2. Measure technical performance
- 3. Assess control effectiveness, the LEV is protecting operators from contaminants

To carry stage 1 and 2 E&FM will set up and manage a contract with an independent Service Provider experienced in the testing of such equipment.

The schedule of inspection and testing is to comply with the reference documents within Section 3, with additional requirements as specified by Loughborough University in the contract document.

Where appropriate a specific inspection and testing schedule will be individually designed for complex systems.

The Service Provider will issue air velocity test certificates and test reports for each LEV system and fit test labels to the system/hood indicating test date, next test, and examiner. Fail labels will be fitted when there is inadequate control. The system will carry the green "pass" or red "fail" label until it has been repaired.

Appendix 2 Table 1 shall be used for LEV performance criteria unless specific risk requirement is identified and recorded in the LEV logbook.

Stage 3 will be carried out by the school/dept. authorised/responsible persons and will include:

- · Observation of the work processes requirements
- · Observation of the way operators work,
- · Source of contaminant cloud size, speed, and direction
- LEV hood type, size, and airflow

In the event of inspection/testing being required on either a LEV system or near its discharge point or on the roof generally, FM would contact the STO/DSO in advance (i.e., the day before in the event of planned works) to inform them of the works. The STO/DSO would have a responsibility to manage the risk of exposure to persons on the roof. This may involve either ceasing the operation of the LEV system or agreeing with E&FM a rescheduled date for the works. A formal handover of the system from the School to E&FM shall be made, and the equipment isolated from use.

#### 6.6 Alterations

If the School wishes to alter any part of the LEV system, the STO/DSO shall contact E&FM and request a meeting to discuss their requirements. The School is not authorised to make any alterations themselves. Alterations are to be undertaken in accordance with section 6.1, 6.2 and 6.3 of this policy to ensure a safe and compliant system.

In the event of the LEV being taken out of use to enable alterations by E&FM to take place, a formal handover of the system from the School to E&FM shall be made, and the equipment

isolated from use. The School is responsible for briefing the normal



end users that the equipment will be out of use for the agreed time. When the alterations have been completed, E&FM will be responsible for the installer to train the STO and handing over any documentation in the established manner, and then the STO is subsequently responsible for briefing the end users and safe operation, again in the established manner.

Following any alteration, a thorough examination and test will be carried out as per section 6.5.

### 6.7 Decommissioning & Removal

At the end of the lifespan of the LEV system, or when repairs / alterations to the system are prohibitively expensive, the STO/DSO shall agree a system closure date with E&FM and end users informed when the last operation date will be. Once operation of the LEV system has ceased, the system shall be isolated and works undertaken to remove the system or render it inoperable. This de- commissioning work shall be undertaken by specialists under the management of E&FM, and all materials disposed of correctly, with particular focus given to the correct disposal of hazardous materials.

### 6.8 Audit and Review

The process shall be reviewed by the team on a regular basis. A periodic independent audit shall be undertaken by LU HSE dept. Any discrepancies will be highlighted, and actions identified to address the issues, including making improvements to the process where necessary.

### 7. LEV Document Management

### 7.1 Policy

This policy is to be made available via LU H&S website.

Changes to the documents are to be made only by the Duty Holder and under approval of the Health and Safety Committee.

### 7.2 Examination and Test Results

The test reports are to be kept in electronic format on the E&FM workspace and a copy provided to the user dept/school.

The test reports may also be kept on a web-based system as provided by the competent persons undertaking the contract to provide thorough examination and testing. Reports will be kept for at least 5 years.

### 7.3 Checks and Maintenance Records

The routine checks, maintenance and assessment of control effectiveness are to be kept in the LEV systems LEV logbook. Logbooks need to be kept for at least five years.

### 7.4 Undocumented Existing System

For LEV systems with no or incomplete logbook, user manual or commissioning report, the school/dep't may need help from the supplier or from an expert, e.g., a consultant engineer or occupational hygienist specialising in LEV to prepare suitable documentation.

The methods used to judge whether the LEV system continues to achieve the required performance and provide adequate control will depend on the assessment of the system but



would normally include visual, pressure measurements, airflow measurements, dust lamp and air sampling tests, as appropriate.

Where the LEV appears to be working to be effective the annual inspection competent person will make measurements of pressure and airflow data for the logbook. Section 5.4 Where the control also depends on operator behaviour and how it is used, the correct ways of working are to be recorded. The procedure and practise should appear in the logbook for the LEV system.

#### Appendix 1 - Legal requirements



1) This appendix summarises the legal duties placed on those concerned with LEV (including manufacture, supply, commissioning, use, maintenance, testing etc.). For more details, look at relevant HSE publications. It does not cover legal matters relating to flammability (DSEAR) or environmental legislation.

#### Who has responsibilities?

2) Health and safety law is aimed mainly at employers and the self-employed and, to a lesser degree, employees, and others. The responsibilities of the self-employed, with regard to LEV systems, are the same as for employers and, for brevity, the use of the term 'employer' in this guidance also includes the self-employed.

3) Under the Health and Safety at Work etc Act 1974 (the HSW Act), every employer has health and safety duties to themselves, their employees, and other people who may be affected by the way they carry out their work ('conduct their undertaking'). It is important to remember that companies who sell LEV or provide related services are also subject to duties under health and safety law (e.g., sections 3, 6 and 36 HSW Act). This means that anyone who, for example, supplies, installs, commissions, or tests LEV, has health and safety duties with respect to the people who use it (or are meant to be protected by it). Consequently, it is not just the owner of an LEV system who has responsibilities.

4) The HSW Act also takes account of offences which are primarily the fault of other people. For example, a client company may have employed the services of what they could justly assume was a competent person (see Chapter 2 and paragraphs 11–16 of this appendix for information on competence) to assess health risks, commission LEV etc. If the actions (or following the advice) of the competent person exposes the client's employees to a health risk, this could leave the client in breach of the law.

Under the HSW Act, however, the competent person could be charged with the offence (irrespective of whether the proceedings are taken against the client) because the competent person was the real cause of the breach being committed.

5) The Control of Substances Hazardous to Health Regulations 2002 (COSHH) (as amended) add specific requirements to the generality of the HSW Act. For example:

- Employers must assess the degree of exposure and the risks to their employees, devise and implement adequate control measures, and check and maintain them.
- Employees must use these control measures in the way they are intended to be used and as they have been instructed.
- Employers must ensure that the equipment necessary for control is maintained 'in an efficient state, in efficient working order, in good repair and in a clean condition'.
- Employers must ensure that thorough examination and testing of their 'protective'\* LEV is carried out at least every 14 months (unless otherwise stipulated), other engineering controls at 'suitable intervals' and must 'review and revise' ways of working so that controls are being used effectively. *LEV may have been required for reasons other than COSHH, e.g., nuisance.*



- The frequency of examination and tests should be linked to the type of engineering control in use, the size of the risk if it failed or deteriorated and how likely it is to fail or deteriorate.
- Employers and employees should give the person carrying out the thorough examination and test all the co-operation needed for the work to be carried out correctly and fully.
- Any defects should be put right as soon as possible or within a time laid down by the person who carries out the examination.
- The person carrying out the thorough examination and test should provide a record, which needs to be kept by the employer for at least five years.

#### Safety of machinery

6) The Provision and Use of Work Equipment Regulations 1998 (PUWER) apply to LEV systems and their components when used at work. LEV as work equipment should be suitable for its intended purpose, maintained for safety and conform at all times with any essential requirements that applied when first put into service. Many LEV systems are also machines with dangerous parts (motors, fans, rotary valves etc) for which adequate safety measures must be taken.

7) From an LEV perspective, relevant equipment and systems may include:

- emission generators, such as machines for turning, grinding, and drilling that emit dust, and metalworking fluid mist.
- emission controllers, such as LEV hoods, moveable, and fixed extraction equipment (some of these fall within the 'machinery' definition, some may be 'safety components' as defined by the Directive, and so within scope)
- general equipment associated with a need for dust control where an activity may create a contaminant cloud, such as bag weighing at a bag filling station.

8) The Machinery Directive (2006/42/EC) applies to the design and construction of machinery, and safety components independently placed on the market. The 'responsible person' (the manufacturer or authorised representative) must ensure that the relevant essential health and safety requirements (EHSRs) are met. This includes machinery being supplied with all the special equipment and accessories essential to enable it to be used safely. Information for putting machinery or safety components into service and for use must be provided, together with a Declaration of Conformity and the CE mark affixed.

9) If a machine is to be part of an existing assembly, and so supplied as partly completed machinery, the supplier may only need to specify an extraction rate which needs to be achieved. The machine owner is then responsible for ensuring extraction is adequate to control exposure and the complete machine is safe when they combine the partly complete machinery in the existing assembly. However, where general equipment is supplied and the nature of the substance is unknown and unforeseeable, there may be no requirement to design/provide LEV.

10) The Supply of Machinery (Safety) Regulations 2008 (SMR08), 6 which implement the Machinery Directive, require that machinery placed on the market, or put into service, is safe. Where suppliers are not the responsible person, they must meet the obligations placed on them by section 6 of the Health and Safety at Work etc Act 1974: to ensure, so far as reasonably practicable, that articles [for use at work] are designed and constructed to be safe and without

risk to health at all times when being set, used, cleaned, or



maintained by a person at work. Section 6 will also apply to components not within scope of the Machinery Directive.

11) The ATEX Directive 94/9/EC (Equipment and protective systems intended for use in potentially explosive atmospheres) may also apply to the design and construction of dust handling equipment where there are risks from fire and explosion due to the nature of the material handled by the equipment. User obligations from the fire and explosion risks associated with LEV systems are covered by the Dangerous Substances and Explosive Atmosphere Regulations 2005 (DSEAR).

### Competence

12) Competence means having appropriate knowledge, capabilities, and experience. This will include, for instance, anyone who:

- designs or selects control measures.
- checks, tests, and maintains control measures.
- Supplies goods and services to employers for health and safety purposes.

13) The Management of Health and Safety at Work Regulations 1999 (MHSWR)4 state that:

- An employer should be competent for health and safety purposes or employ or obtain advice from competent people.
- People are seen as competent where they have enough training and experience or knowledge and other qualities to enable them 'properly to assist in undertaking the measures referred to'.

14) Simple situations may require only:

- An understanding of relevant best practice.
- An awareness of the limitations of one's own experience and knowledge.
- The willingness and ability to supplement existing experience.

15) More complicated situations will require the competent assistant to have a higher level of knowledge and experience. Employers are advised to check the appropriate health and safety qualifications.

16) The COSHH Regulations 3 require that:

- employers ensure any person (whether or not their employee) who carries out work in connection with the employer's duties under the COSHH Regulations has suitable and sufficient information, instruction, and training.
- employers ensure whoever provides advice on the prevention or control of exposure is competent to do so.
- whoever designs control measures needs appropriate knowledge, skills, and experience.
- anyone who checks on the effectiveness of any element of a control measure should be competent to do so.



LEV competence: Design, supply, commission, and test of LEV systems

17) Routes to becoming professionally competent include qualifications through BOHS, CIBSE and ILEVE. UKAS Accreditation for Commissioning of LEV or Thorough Examination and Test (TExT) of LEV is evidence that UKAS have audited the technical competence of a commissioning or inspection body.

### Appendix 2 - Checklist and Technical standards



#### LEV checklist

Issue	Possible solution
Which sources are	Take advice from suppliers, trade associations, professional
causing exposure?	advisors, the HSE website and other reliable sources.
What type of LEV	Write a specification. If necessary, get professional advice. Be very
system do I need?	clear about the type of LEV hood needed. Make sure that your
	advisor has the competence and experience you need.
Has my LEV system	Make sure your LEV system is installed and commissioned by a
been installed and	competent person. Get a full commissioning report and user
commissioned	manual. Ensure simple instrumentation is installed to check
properly?	performance (e.g., a hood manometer).
Have I, and my staff,	Include training in your LEV specification document. Make sure
been properly trained?	employees and the person responsible for checking and maintaining
	the system are trained. Keep training records.
How do I check and	Look at the user manual which will list the checks and their
maintain my LEV	frequency. If you do not have one, get one written. Appoint people to
system?	do the checks, maintenance, and repairs. Record any checking and
	maintenance details in the logbook.
Have you changed the	Treat and plan changes to the LEV as part of any change to the
way you work or the	production process. Do not assume it will cope. Get the LEV system
production process but	re-commissioned.
not the LEV?	
How do I arrange a	Include thorough examination and test in the yearly management
thorough examination	cycle. Make sure that your examiner has the competence and
and test of the LEV?	experience you need.
What do I do with the	Follow the recommendations in the test report and carry out
report?	necessary repair work promptly.
The examiner has put	Check the test report for actions needed and arrange for repair. If
a red Tall label on an	necessary, provide further protection for your employees in the
	meantime, including personal protective equipment and respiratory
	protection.
when should I review	I reat the LEV examination and test report as an audit on exposure
exposure control	controls. Think about what more you can do to stop employees
measures?	preatning in airporne contaminants.



#### Table 1

Type of Work	Minimum Face Velocity	
Ducted fume cupboards Standard	0.5 m/s ±20%	
work with hazardous substances		
(at sash opening height of 500mm)		
Work with radioactive materials:	0.7 m/s ± 20%	
High performance/low flow fume	0.3 m/s ± 20%	
cupboards		
Variable airflow volume fume	0.5 m/s ±20% (at minimum, 50% maximum and	
cupboards	maximum sash opening heights)	
Recirculating fume cupboards	0.5 m/s ± 20%	
Standard work with hazardous		
substances		
In all cases, although no maximum face velocity has been set for fume cupboards, very high		
flow rates may cause turbulence and reduce the effectiveness of containment. Therefore, if		
the face velocity is more than 1.0 m/sec, a competent person should check whether or not		
containment is effective.		

Recommended transport velocity for LEV ductwork used for vapours, smoke, and fumes 10 m/s LEV used for light-medium dusts and powders 15 m/s

#### Technical Guidance to be used as the standard:

- The Control of Substances Hazardous to Health Regulations (COSHH) 2002
- EH40 Workplace Exposure Limits: Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations 2002 (as amended); January 2020.
- BS EN 14175 parts 1-7: Requirements for fume Cupboards
  - Part 1 Fume cupboards. Vocabulary
  - · Part 2 Fume cupboards. Safety and performance requirements
  - Part 3 Fume cupboards. Type test methods
  - Part 4 Fume cupboards. On-site test methods
  - Part 5 Fume cupboards. Recommendations for installation and maintenance
  - · Part 6 Fume cupboards. Variable air volume fume cupboards
  - Part 7 Fume cupboards. Fume cupboards for high heat and acidic load
- BS 7989:2001 Specification for re circulatory filtration fume cupboards
- HSG 258 Controlling airborne contaminants at work a guide to local exhaust ventilation (LEV).
- INDG408 HSE guide to buying and using local exhaust ventilation (LEV).
- INDG409 HSE workers guide to local exhaust ventilation (LEV).
- BS 5726:2005 (replaces BS 5276 1992 2&4) Installation, selection, use Microbiological cabinets.
- BE EN 12469:2000 Performance criteria and testing Microbiological cabinets.

#### Appendix 3 - Logbook Contents and checklist



#### LEV system logbook

All LEV systems require a logbook that contains schedules and forms to keep records of regular checking, maintenance, and repair. The logbook contains:

- Schedules for regular checks and maintenance
- Records of regular checks, maintenance, replacements, and repairs
- · Checks of compliance with the correct way of working with the LEV system
- The name of the person who made these checks

Examples of what should appear in the logbook's checklists.

Identified daily checks, weekly checks, and monthly checks for each item in the system, for example:

- Hoods, including airflow indicators, physical damage, and blockages
- Ducts, including damage, wear, and partial blockage
- Dampers position
- Air cleaner, including damage, static pressure across the cleaner, and failure alarms
- Air mover, including power consumption and changes in noise or vibration
- Maintenance carried out
- Replacements made
- Planned and unplanned repairs
- Operator's use of the LEV check they are following correct procedures
- Space to report the results against each check item
- Signature and date

Logbooks should be located with/on the LEV system in a position that is clearly visible to operators and persons engaged in maintenance.