

A DUTY HOLDER'S GUIDE

LEV ASSURANCE

A COMPLETE GUIDE TO
**COMMISSIONING,
VERIFICATION AND
DEFENSIBLE CONTROL**



Practical guidance for
Duty Holders with
responsibility for LEV
and worker protection.

FIRST EDITION • 2026



EVIDENCE
THAT
**PROTECTS
PEOPLE**
AND STANDS UP
TO SCRUTINY



**ESTABLISH
CONTROL**



**VERIFY
PERFORMANCE**



**DEMONSTRATE
COMPLIANCE**



**MAINTAIN
ASSURANCE**

OXYL8

PEOPLE • EVIDENCE • ASSURANCE



OXYL8.com

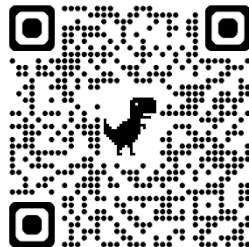
Practical guidance for Duty Holders
committed to effective **exposure control**

Beyond TExT

A Duty Holder's Guide to Demonstrating
Effective LEV Control



Thought Leadership Series



A Duty Holder's Guide: LEV Assurance

A Governance Framework for Duty Holders

Published by

OXYL8 Professional Publications

Duty Holder Guide Series

An imprint of OXYL8 Ltd

Grantown-on-Spey, Scotland

Publication reference: DHG-001

First published, 2026

ISBN 978-1-911839-00-2

Copyright © OXYL8 Ltd 2026

All rights reserved.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means without the prior written permission of the publisher except as permitted by law.

Whilst every effort has been made to ensure the accuracy of the information contained in this publication, OXYL8 Ltd accepts no liability for any loss, damage or consequence arising from reliance upon or use of this publication.

This publication provides general professional guidance. It does not replace applicable legislation, Approved Codes of Practice, recognised guidance, technical standards, competent professional judgement or site-specific risk assessment. Appropriate professional judgement remains essential in every application.

For information regarding future editions and other publications visit:

www.oxy18.com

Table of Contents

Foreword	1
Section 1: Executive Summary	4
Why This Matters	5
What This Guide Covers	6
Section 2: What Does 'Effective Control' Actually Mean?	8
2.1 The CoSHH Objective	8
2.2 Control Versus Compliance	9
Buying LEV Is an Investment - But Only If It Works.....	11
2.3 The Evidence Question	11
Section 3: The Limits of TExT	13
3.1 What TExT Does Well	13
3.2 What TExT Cannot Demonstrate Alone	14
3.3 The Missing Context Problem	15
Section 4: Understanding the Evidential Chain.....	18
4.1 What is an Evidential Chain?	18
The LEV Assurance Chain	20
4.2 Why Individual Documents Are Rarely Enough	20
4.3 Weak Links Create Assurance Gaps	21
4.4 The Role of Commissioning Within the Chain	22
4.5 Assurance Depends Upon Continuity	23
4.6 The Duty Holder's Perspective	23
Section 5: Establishing Adequate Control	24
5.1 Defining Success Before Measuring It.....	25
5.2 Demonstrating Effectiveness.....	26
5.3 Evidence, Judgement and Defensibility	27
5.4 Establishing the Performance Baseline.....	28
5.5 The Quality of the Baseline Matters	28
5.6 From Commissioning to Assurance.....	29
Section 6: The Duty Holder's Assurance Framework	30
6.1 Design Assurance	31
6.2 Commissioning Assurance	32

6.3 Operational Assurance	33
6.4 Maintenance Assurance.....	34
6.5 Verification Assurance.....	36
6.6 Governance Assurance.....	37
Bringing the Layers Together	38
The Duty Holder's Assurance Question	39
Section 7: Beyond Measurements	41
7.1 Why Numbers Alone Are Not Enough	41
7.2 The Difference Between Data and Evidence.....	42
7.3 The Importance of Observation	43
7.4 Understanding Exposure Pathways.....	44
7.5 From Measurement to Assurance	45
7.6 The Duty Holder's Perspective	47
Section 8: Managing Change	48
8.1 Why Control Performance Changes	48
8.2 The Hidden Risk of Assumption Drift	49
8.3 Managing Change as Part of Assurance	50
8.4 When Re-Commissioning Should Be Considered	51
8.5 The Duty Holder's Change Management Question	52
8.6 Preserving the Evidential Chain	52
Example: When All the Measurements Were Right	54
Section 9: What Good Evidence Looks Like	55
9.1 The Purpose of Evidence.....	55
9.2 Characteristics of Strong Evidence	56
9.3 Characteristics of Weak Evidence	59
9.4 Evidence Should Tell a Coherent Story.....	59
9.5 The Boardroom Test.....	60
9.6 The Duty Holder's Evidence Review.....	61
9.7 From Evidence to Confidence	62
Section 10: The Ten Questions Every Duty Holder Should Be Able to Answer	63
Question 1: Why Does This LEV System Exist?.....	63
Question 2: What Level of Control Was Intended?	64

Question 3: How Was Adequate Control Originally Demonstrated?.....	64
Question 4: What Performance Baseline Was Established?	64
Question 5: How Do We Know Performance Continues?	65
Question 6: How Is the System Maintained?	65
Question 7: What Has Changed Since Commissioning?	66
Question 8: Who Owns LEV Assurance?	66
Question 9: What Evidence Supports Confidence in Effective Control?	66
Question 10: Could We Demonstrate Effective Control Under Scrutiny?	67
Using the 10 Questions	68
Section 11: Conclusions	69
Final Reflection.....	71
Duty Holder Quick Reference.....	72
The LEV Assurance Chain	72
The Six Evidence Qualities	73
The Duty Holder's Question	73
Remember.....	74

Foreword

Most organisations with Local Exhaust Ventilation (LEV) systems can readily demonstrate compliance activity.

- ✓ They can produce Thorough Examination and Test (TExT) reports.
- ✓ They can show maintenance records.

These documents provide airflow measurements, inspection reports and service histories. In many cases, they can demonstrate that these activities have been undertaken consistently for years. Yet, when a more fundamental question is asked, the answer is often far less clear:

Can the organisation demonstrate that exposure to hazardous substances is being adequately controlled?

Whilst the difference may appear subtle, it is significant.

The existence of physical LEV systems, maintenance programmes and TExT reports does not, in itself, prove that effective control has been achieved. Nor does it necessarily demonstrate that the level of control originally intended continues to be maintained. These activities provide evidence.

The real question is whether that evidence is sufficient to support a defensible conclusion that workers are being protected from harmful exposure.

This distinction sits at the heart of effective LEV management.

For many years, the LEV industry has understandably focused significant attention on system design, installation, testing and statutory examination. These activities remain essential. However, organisations increasingly operate in environments where decisions and performance may be scrutinised not only by regulators, but also by insurers, auditors, legal representatives, occupational health professionals and corporate governance stakeholders. In these circumstances, the standard of evidence matters.

Duty Holders are no longer simply expected to demonstrate that activities have been completed. They may be required to demonstrate why decisions were made, how control effectiveness was

established, what assumptions were relied upon and how confidence in ongoing performance has been maintained.

This requires a broader perspective than compliance measurements alone. It requires an understanding of the complete evidential chain that supports effective exposure control.

From hazard identification and risk assessment, through design intent, commissioning, operation, maintenance, examination, testing and change management, each stage contributes evidence that collectively supports assurance. Where that evidence is complete, coherent and defensible, organisations are better positioned to demonstrate effective control. Where gaps exist, confidence may be significantly weakened, regardless of how much testing or documentation has been undertaken.

This guide has been written to help Duty Holders understand that distinction.

It is not intended to replace existing guidance on LEV design, commissioning, maintenance or Thorough Examination and Test. Rather, it seeks to place those activities within a wider assurance framework and to explain how they contribute to the demonstration of effective control.

Throughout this document, the focus remains on a simple but important principle:

LEV management is not ultimately about systems, measurements or reports. The focus is about protecting people from harmful exposure.

Occupational lung disease remains one of the most significant long-term health challenges associated with workplace exposure. Against this backdrop, effective LEV assurance should not be viewed as an additional cost, but as an investment in worker health, operational resilience and informed business decision-making.

Measurements, inspections, maintenance activities and examinations all have value because they contribute evidence towards that objective. Effective exposure control is often viewed solely through the lens of regulatory compliance. However, the consequences of ineffective control extend far beyond enforcement considerations. Work-related ill health continues to impose a significant burden on workers, families and businesses alike.

The challenge for Duty Holders is ensuring that the evidence available is capable of demonstrating not merely that activities have been completed, but that exposure risks have been effectively controlled.

Because when exposure control is scrutinised, the question is rarely whether a report exists. The question is whether the organisation can demonstrate, with confidence and evidence, that workers were, and continue to be, adequately protected.

That is the purpose of this guide.

Section 1: Executive Summary

Why This Guide Exists

Local Exhaust Ventilation (LEV) systems are widely recognised as one of the most effective engineering controls for managing exposure to hazardous airborne contaminants in the workplace.

Across many industries, organisations invest considerable time and resources in the design, installation, maintenance and examination of LEV systems to protect worker health and satisfy their legal obligations under the Control of Substances Hazardous to Health (COSHH) Regulations.

However, a fundamental question is often overlooked:

Can you demonstrate that effective exposure control has actually been achieved and continues to be maintained?

For many organisations, assurance is frequently centred on compliance activities such as Thorough Examination and Test (TExT), maintenance inspections and routine performance measurements. Whilst these activities are important and often legally required, they represent only part of the evidence needed to demonstrate effective control.

A TExT report may provide assurance that an LEV system continues to perform in a manner consistent with established expectations. It does not, by itself, demonstrate that those expectations were appropriate, that adequate control was originally achieved, or that the control strategy remains suitable for the hazards and processes being managed.

Demonstrating effective control requires a broader and more structured approach. It requires organisations to understand the relationship between:

- Hazard identification and risk assessment.
- The intended control objective.
- LEV system design and design intent.
- Commissioning and the establishment of performance baselines.
- Operation, maintenance and user behaviour.

- Verification through examination and testing.
- Governance, change management and organisational accountability.

Collectively, these elements form an evidential chain that supports confidence in exposure control.

Where this chain is complete and robust, Duty Holders are better positioned to demonstrate that workers are being protected from harmful exposure. Where significant gaps exist, confidence in the effectiveness of control measures may be weakened, regardless of the quantity of testing, measurements or documentation available.

Why This Matters

The importance of effective exposure control extends far beyond regulatory compliance.

Work-related ill health continues to impose a substantial burden on individuals, employers and society.

HSE estimates that the annual cost of workplace injury and new cases of work-related ill health in Great Britain exceeds £20 billion. Occupational lung disease remains one of the most significant long-term health risks associated with workplace exposure, with current cases often reflecting exposures that occurred many years or even decades earlier.

Against this backdrop, investment in effective control measures should not be viewed simply as a compliance cost.

Poorly specified, poorly commissioned or poorly maintained LEV systems can result in wasted capital expenditure, operational disruption, reduced productivity, increased maintenance costs, enforcement action, reputational damage and potentially significant civil liability claims.

In contrast, effective control helps protect workers, preserve business continuity and provide confidence that risks are being managed appropriately.

International studies have consistently demonstrated that investment in prevention can deliver measurable business benefits alongside improved health outcomes.

Effective LEV assurance should therefore be viewed not as an additional burden, but as a means of protecting both people and the value of the investment already made in exposure control.

What This Guide Covers

This guide introduces a practical framework for understanding and managing LEV assurance throughout the entire lifecycle of a system.

It explains:

- ✓ What effective control means in practice.
- ✓ Why compliance and control are not necessarily the same thing.
- ✓ Limitations of relying solely upon testing and measurements.
- ✓ Importance of commissioning and performance baselines.
- ✓ How correct evidence supports assurance and decision-making.
- ✓ The role of governance in maintaining confidence in exposure control.
- ✓ The questions every Duty Holder should be able to answer regarding their LEV systems.

Central to this guide is a simple but important principle:

The objective of LEV management is not to generate reports.

The objective is to protect people from harmful exposure.

Reports, measurements, examinations and maintenance activities are valuable because they provide evidence. That evidence, when properly understood and managed, supports assurance. Assurance provides confidence that effective control exists and that worker health is being protected.

The organisations best able to demonstrate effective control are not necessarily those with the largest number of reports or measurements. They are the organisations that can clearly explain how their evidence supports a defensible conclusion that exposure risks have been effectively controlled.

This guide is intended to help Duty Holders develop that understanding and build a stronger, more defensible approach to LEV assurance.

A clear assurance framework helps organisations buy the right system, use it correctly, maintain performance and avoid preventable failures.

Section 2: What Does 'Effective Control' Actually Mean?

Before considering LEV Commissioning, Thorough Examination and Test (TExT), performance baselines or assurance frameworks, it is important to understand a fundamental question:

What do we actually mean by effective control?

Whilst the phrase is widely used throughout occupational hygiene, LEV, health and safety management and regulatory guidance, its practical meaning is not always fully understood.

For many organisations, the concept of effective control can become confused with compliance activities, equipment ownership or the completion of statutory inspections. However, “effective control” is not defined by the existence of an LEV system, nor by the presence of maintenance records or examination reports. Effective control exists when exposure to hazardous substances is prevented or adequately controlled so that workers are protected from harm.

Everything else exists to support, demonstrate and maintain that outcome.

2.1 The CoSHH Objective

The primary objective of the Control of Substances Hazardous to Health (CoSHH) Regulations is not to install engineering controls, conduct examinations or generate reports. The objective is to prevent exposure to hazardous substances where reasonably practicable and, where prevention is not possible, to ensure that exposure is adequately controlled.

This distinction is important.

- ✓ LEV systems are not the objective.
- ✓ Effective LEV systems are a means of achieving the objective.

Similarly, maintenance activities, performance measurements and TExT reports are not ends in themselves. They are activities undertaken to provide confidence that the control measures in place continue to achieve their intended purpose.

A well-maintained LEV system may still fail to provide adequate control if it was poorly designed, incorrectly commissioned, improperly used or subjected to significant changes that were never assessed.

Conversely, a system that demonstrates effective contaminant capture or containment and effective exposure reduction may provide a high level of protection even where individual performance measurements vary from historic expectations.

The question that ultimately matters is not:

Is the LEV system operating?

The question is:

Is worker exposure being adequately controlled?

Every aspect of LEV management should support the answer to that question.

2.2 Control Versus Compliance

Many organisations invest considerable effort in demonstrating compliance.

- Inspection schedules are maintained.
- Maintenance records are retained.
- Performance measurements are collected.
- Statutory examinations are completed.

These activities are important and often legally required. However, they should not be confused with the outcome they are intended to support.

Compliance activities generate evidence.



Evidence supports assurance.



Assurance supports confidence in control.

The activity itself is not the outcome. The outcome is effective exposure control.

This distinction can be illustrated by a simple example.

An organisation may possess a current TExT report showing satisfactory measurements and no significant defects. Whilst this may provide confidence that the LEV system continues to perform in a manner consistent with previous expectations, it does not automatically demonstrate that the system was **originally** capable of providing adequate control.

Similarly, a maintenance programme may demonstrate that equipment is being serviced correctly, but maintenance records alone cannot prove that the control strategy itself remains appropriate for the hazards being managed.

Compliance activities therefore provide pieces of evidence within a wider assurance framework.

The strongest organisations recognise that inspections, examinations, measurements and maintenance activities are not objectives in their own right. They are tools used to support a defensible conclusion that workers are being protected from harmful exposure.

This shift in perspective is important for Duty Holders. It moves the conversation away from:

Have we completed the required activities?

towards:

What evidence do we have that effective control exists?

Buying LEV Is an Investment - But Only If It Works

HSE's guidance "Clearing the Air; A Simple Guide for Buying & Using LEV" (HSE: INDG408) makes a simple point:

"... many employers purchase LEV to protect workers, but the system may fail because it is the wrong type, poorly installed, poorly used or poorly maintained."

The problem is therefore not assurance. The problem is ineffective control.

Effective commissioning, clear performance baselines, competent maintenance and meaningful TExT protect the value of the original investment by helping ensure that the system actually controls exposure.

2.3 The Evidence Question

A useful exercise for any Duty Holder is to imagine that they are required to demonstrate effective control to an external party.

The external party could be:

- ✓ Regulator (HSE) investigating a workplace incident.
- ✓ Occupational hygiene specialist conducting an audit.
- ✓ Insurer assessing organisational risk.
- ✓ Legal representative following an exposure claim.
- ✓ Senior manager seeking assurance regarding workforce protection.

In each case, the question is unlikely to be limited to whether a TExT report exists. Instead, the discussion is likely to focus on evidence.

Questions may include:

- What hazardous substances are present?
- What exposure risks exist?
- Why was this LEV selected as the control measure?
- How was adequate control originally demonstrated?
- What performance baseline was established?
- How is ongoing performance verified?
- How are changes managed?
- What evidence supports confidence in continued effectiveness?

The answers to these questions collectively form an evidential chain.

Where the chain is complete, organisations can demonstrate not only that activities have been undertaken, but that exposure risks have been effectively managed. Where significant gaps exist, confidence in the effectiveness of control measures may be weakened, even where substantial compliance activity has taken place.

For this reason, Duty Holders should regularly ask themselves a simple but powerful question:

What evidence would I rely upon if I had to demonstrate effective control today?

The remainder of this guide explores how that evidence is established, maintained and used to support confidence in effective exposure control throughout the lifecycle of an LEV system.

Section 3: The Limits of TExT

Thorough Examination and Test (TExT) is one of the most important elements of LEV management.

It provides a structured opportunity to examine the condition and performance of an LEV system, identify deterioration, recognise defects and provide evidence that the system continues to operate in a manner consistent with its intended performance.

For Duty Holders, TExT is therefore a critical assurance activity. However, it is also important to understand what TExT **can** and **cannot** demonstrate.

A common weakness in LEV management arises when TExT is treated as the sole evidence that exposure is being adequately controlled. In many organisations, the existence of a current TExT report is assumed to mean that the LEV system is effective.

That assumption may not always be justified.

TExT can provide valuable evidence regarding current condition and ongoing performance. However, it cannot, on its own, answer every question required to demonstrate effective exposure control. In particular, TExT usually relies upon the existence of an established **benchmark**. It compares present performance against what has previously been defined, measured or accepted.

If the original basis for adequate control was never properly established, then subsequent testing may demonstrate consistency, but not necessarily adequacy.

This distinction is central to effective LEV assurance.

3.1 What TExT Does Well

TExT should confirm that an LEV system remains in an efficient state, in efficient working order, in good repair and in clean condition.

When undertaken competently, it can provide important evidence regarding:

- ✓ The physical condition of the LEV system.
- ✓ The operation of hoods, ductwork, air movers and air cleaners.
- ✓ The condition of filters, discharge arrangements and system components.
- ✓ Whether measurable performance has changed since previous examinations.
- ✓ Whether defects, deterioration or damage are present.
- ✓ Whether maintenance or remedial action is required.
- ✓ Whether performance remains consistent with established reference data.

This makes TExT essential to ongoing assurance.

LEV systems do not remain static. For example, components wear, filters load, ductwork becomes damaged, hoods are moved, production demands change and operators may alter how work is carried out. Without periodic examination and testing, deterioration may go unnoticed until exposure control has already been compromised.

TExT therefore provides a formal mechanism for identifying whether the system continues to function as expected and whether corrective action is required. It is not merely a compliance exercise.

At its best, TExT provides valuable evidence that an LEV system continues to perform in line with the performance expectations established for it.

3.2 What TExT Cannot Demonstrate Alone

Although TExT is essential, it has limits.

A TExT report may show that a system is operating consistently with previous measurements. It may show that airflow remains stable, static pressure readings are within expected ranges and visible defects have not been identified.

However, those findings do not automatically prove that the system was originally designed, installed or commissioned in a way that achieved adequate control.

TExT cannot, on its own, demonstrate that:

- ✓ The original control strategy was appropriate.
- ✓ The design intent was suitable for the hazard.
- ✓ The system was capable of controlling exposure when first installed.
- ✓ The original performance benchmark represented adequate control.
- ✓ Operator behaviour and work practices support effective control.
- ✓ Process changes have not altered the exposure risk.
- ✓ Current measurements are sufficient to demonstrate exposure control without wider context.

This is not a criticism of TExT. It is simply a recognition of its purpose and limitations.

TExT is primarily concerned with verifying continuing condition and performance. Commissioning is concerned with establishing capability and creating the performance benchmark against which future verification can take place.

Where commissioning evidence is weak, absent or poorly documented, TExT may be forced to operate without a reliable reference point.

In those circumstances, the examination may still be useful, but the assurance it provides is limited.

3.3 The Missing Context Problem

Measurements are only meaningful when they are interpreted in context.

- An airflow rate may appear acceptable.
- A static pressure reading may appear stable.
- A hood velocity may appear comparable with previous records.

But these figures only support assurance if there is a clear understanding of what benchmark they are being compared against and why those values matter.

To interpret TExT results properly, the Duty Holder needs to understand:

- ✓ What hazard the system is intended to control.
- ✓ How the contaminant is generated.
- ✓ How exposure could occur.
- ✓ What control strategy was selected.
- ✓ What design performance was intended.
- ✓ What evidence demonstrated adequate control.
- ✓ What performance baseline was established.
- ✓ What changes have occurred since commissioning.

Without this context, TExT results can become isolated measurements rather than meaningful evidence. This is the missing context problem.

An organisation may possess years of TExT records showing broadly stable readings, yet still be unable to demonstrate that the original performance level was adequate to control exposure.

Stability is not the same as adequacy. Consistency is not the same as effectiveness.

A system may perform consistently for many years and still be consistently inadequate if the original benchmark was never properly established. For this reason, TExT should be viewed as part of a wider assurance framework, not as the whole framework.

Risk assessment leads to a design intent and explains what performance is required.



Commissioning provides evidence of what performance is satisfactory and exposures are adequately controlled.



TExT provides evidence that required performance continues.



Operational management ensures the system is used correctly.



Maintenance preserves system condition.



Change management ensures assumptions remain valid.

Together, these elements provide the evidence needed to demonstrate effective control. TExT remains essential, but it is strongest when connected to the wider evidential chain.

Section 4: Understanding the Evidential Chain

Throughout this guide, the term "evidential chain" is used repeatedly.

The reason is simple.

Effective control is rarely demonstrated by a single document, a single measurement or a single activity. Instead, confidence in exposure control is usually built from multiple pieces of evidence that connect together to tell a coherent and defensible story.

The strength of that story depends upon the strength of every link within the chain.

When the links are complete and connected, organisations can demonstrate not only what they have done, but why they believe workers are adequately protected.

When links are missing, confidence may be weakened regardless of how much information is available elsewhere. Understanding this principle is fundamental to effective LEV assurance.

4.1 What is an Evidential Chain?

An evidential chain is the assembly of information, decisions, assessments and records that collectively demonstrate that exposure risks have been identified, assessed, controlled and continuously managed.

In the context of LEV, the evidential chain typically links together:

CHAPTER 7

THE LEV ASSURANCE CHAIN

FROM DESIGN INTENT TO DUTY HOLDER CONFIDENCE



The LEV Assurance Chain

Effective exposure control is rarely demonstrated by a single report, measurement or activity. Confidence is built through a connected chain of evidence linking hazard identification, risk assessment, control strategy, commissioning, performance verification and ongoing assurance. The strength of the assurance process depends upon the integrity of every link within the chain.

Each stage provides evidence that supports the next.

For example, commissioning evidence only has real meaning when considered against the design intent it was intended to verify. Similarly, a TExT report becomes significantly more valuable when compared against a clearly documented commissioning baseline.

Viewed individually, these documents may appear independent. Viewed collectively, they form a chain of evidence supporting confidence in effective control.

This is why LEV assurance should never be considered solely as a testing activity. Testing is only one link in the chain.

4.2 Why Individual Documents Are Rarely Enough

Many organisations possess large quantities of LEV documentation.

They may have:

Risk assessments.	TExT reports.
Design drawings.	Training records.
Commissioning reports.	Service histories.
Maintenance records.	

Yet despite this volume of information, they may still struggle to answer a simple question:

How do these documents collectively demonstrate effective control?

This challenge arises because evidence has little value when considered in isolation.

A commissioning report may contain detailed measurements, but if the original design intent is unknown it can be difficult to determine whether those measurements represented success.

A TExT report may demonstrate stable performance, but if no baseline was ever established it may be impossible to determine whether the performance remains adequate.

Similarly, a maintenance programme may demonstrate that equipment is being serviced correctly, whilst providing little information regarding whether the control strategy remains appropriate for the hazards being managed.

The issue is not the quantity of evidence. The issue is whether the evidence remains connected.

Strong assurance depends upon the ability to follow the logical pathway from hazard to control and from control to verification.

4.3 Weak Links Create Assurance Gaps

One of the most common weaknesses encountered in LEV management is the existence of assurance gaps. These gaps occur when one or more links within the evidential chain are missing, incomplete or poorly documented.

Examples might include:

- No documented design intent.
- Missing or inadequate commissioning records.
- Incomplete performance benchmarks.
- Poorly defined acceptance criteria.
- Lack of evidence supporting control effectiveness.
- Significant process changes that were never assessed.
- Missing records explaining why key decisions were made.

In many cases the organisation may still possess substantial amounts of documentation. However, because the evidence does not connect together, confidence in the overall assurance process becomes weakened.

This situation is often compared to constructing a bridge. The strength of the bridge is determined by every structural element. A single missing section may compromise the integrity of the entire structure.

The same principle applies to assurance. The strength of the evidential chain is determined by its weakest link.

4.4 The Role of Commissioning Within the Chain

Commissioning occupies a particularly important position within the evidential chain. It forms the bridge between design intent and operational assurance.

Before commissioning, organisations possess assumptions. After commissioning, they should possess evidence.

Commissioning is therefore the point at which intended performance becomes demonstrated performance. It is where the organisation seeks to answer a critical question:

Has adequate control actually been achieved?

The answer to this question establishes the performance baseline against which future examinations, maintenance activities and operational decisions can be evaluated. Without commissioning evidence, a significant gap may exist between design intent and ongoing verification.

This is one reason why organisations can sometimes possess years of TExT reports whilst still being unable to demonstrate how effective control was originally established. Commissioning therefore represents one of the most important links within the chain.

4.5 Assurance Depends Upon Continuity

An evidential chain is not static. It must remain valid throughout the operational life of the system.

Changes to materials, processes, production rates, operating practices or system configuration may alter the assumptions upon which earlier evidence was based. As changes occur, new evidence may be required to maintain continuity.

This is where activities such as management of change, re-commissioning and periodic verification become important. They help ensure that the evidential chain remains intact.

The objective is not to create more documentation. The objective is to preserve confidence that the evidence continues to support the same conclusion:

That exposure risks remain effectively controlled.

4.6 The Duty Holder's Perspective

For Duty Holders, the concept of an evidential chain provides a useful way of viewing LEV assurance.

Rather than asking:

Do we have a current TExT report?

The more useful question becomes:

Can we demonstrate a complete and defensible chain of evidence showing how effective control was established and how it continues to be maintained?

This shift in perspective changes how organisations think about assurance. It moves attention away from individual activities and towards the overall integrity of the evidence supporting exposure control.

As we have said, the objective is not to collect documents. The objective is to create confidence. And confidence is strongest when every link in the evidential chain remains visible, connected and defensible.

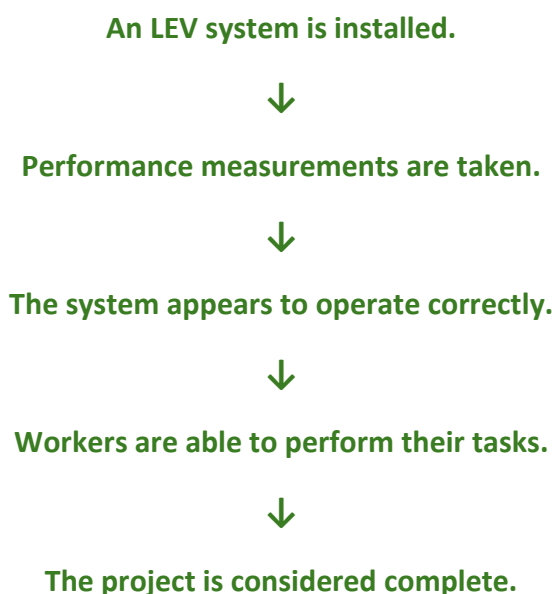
Section 5: Establishing Adequate Control

The ultimate purpose of any Local Exhaust Ventilation (LEV) system is to prevent or adequately control exposure to hazardous airborne contaminants.

This objective appears simple. In practice, however, it raises an important question:

How do we know when adequate control has actually been achieved?

For many organisations, the answer is **assumed** rather than demonstrated.



Yet none of these factors necessarily prove that adequate control has been established.

Effective control is not demonstrated by the existence of equipment alone. It must be demonstrated through evidence that the control strategy is capable of achieving its intended objective under the conditions in which it will be used.

This is the purpose of commissioning. Commissioning provides the opportunity to move from assumptions to evidence and from intended performance to demonstrated performance. It is the stage at which organisations seek to establish that the control measures provided are capable of achieving effective exposure control.

5.1 Defining Success Before Measuring It

One of the most common mistakes in LEV projects is attempting to measure success before objectives have been clearly defined. Measurements have little meaning unless there is an understanding of what those measurements are intended to demonstrate.

Before commissioning begins, several important questions should already have been answered:

- What hazardous substance is being controlled?
- How is the contaminant generated?
- How might exposure occur?
- What level of control is required?
- What assumptions have been made regarding process operation?
- What constitutes successful control?

These questions form part of the system's design intent.

Design intent establishes the objectives against which commissioning evidence will later be evaluated. Without a clearly defined design intent, commissioning risks becoming little more than the collection of measurements.

The objective of commissioning is not to obtain numbers. The objective is to determine whether adequate control has been achieved. This distinction is fundamental.

A capture velocity, airflow rate or static pressure reading only becomes meaningful when it can be related to the control objective it was intended to support.

In other words, the question is not:

What measurement was achieved?

The question is:

What does that measurement tell us about exposure control?

5.2 Demonstrating Effectiveness

Once success has been defined, the next step is to gather evidence demonstrating that the control objective has been achieved. This requires more than simply collecting engineering measurements.

Exposure control is a complex interaction between:

- The contaminant.
- The process.
- The LEV system.
- The operator.
- The workplace environment.

For this reason, effective commissioning often requires multiple forms of evidence.

Depending upon the application, evidence may include, for example:

- Exposure monitoring data
- Assessment of contaminant capture.
- Smoke visualisation studies.
- Observation of operator interaction with the LEV system.
- Assessment of containment performance.
- Airflow and velocity measurements.
- Static pressure measurements.
- Process observations.
- Assessment of abnormal operating conditions.
- Professional judgement informed by experience and competence.

No single measurement can normally demonstrate adequate control in isolation. Rather, commissioning seeks to build a body of evidence that supports a defensible conclusion regarding system effectiveness. This concept is particularly important for Duty Holders.

Many organisations naturally seek a single definitive measurement that proves compliance or demonstrates control. In reality, effective control is often demonstrated through the combination of multiple forms of evidence, each contributing to a wider understanding of system performance.

The objective is not to prove that a measurement exists. The objective is to demonstrate that exposure is being adequately controlled.

5.3 Evidence, Judgement and Defensibility

Commissioning is often misunderstood as a purely technical measurement exercise.

In some cases, it is seen, incorrectly, as a hand-over exercise.

In reality, commissioning is an evidential process. Measurements are important. Observations are important. Testing is important.

However, the value of these activities lies not in the data itself but in the conclusions that can be drawn from that data. Professional judgement plays an important role in this process. Competent commissioning practitioners assess whether the available evidence collectively supports the conclusion that adequate control has been achieved.

This involves considering the:

- Nature of the hazard.
- Intended control objective.
- Behaviour of the contaminant.
- Performance of the LEV system.
- Manner in which the process is undertaken.
- Limitations of the evidence available.

The resulting conclusion should be capable of withstanding scrutiny. This is the essence of defensibility.

A defensible commissioning process allows the Duty Holder to explain not only what measurements were obtained, but why those measurements support confidence in effective exposure control. The

strongest commissioning evidence therefore links measurements, observations and professional judgement into a coherent and transparent rationale.

5.4 Establishing the Performance Baseline

One of the most important outcomes of commissioning is the establishment of a performance baseline. A performance baseline is a documented reference point describing the condition and performance of the LEV system when adequate control has been demonstrated.

The baseline may include such elements as:

- ✓ Exposure monitoring results.
- ✓ Airflow measurements.
- ✓ Static pressure readings.
- ✓ Hood performance data.
- ✓ Operational settings.
- ✓ Process conditions.
- ✓ Photographic records.
- ✓ Visual observations.
- ✓ Commissioning conclusions.

Together, these elements create a benchmark against which future performance can be assessed. This benchmark becomes a critical governance asset throughout the life of the system. Maintenance activities can be compared against it. Future TExT examinations can reference it. Investigations can rely upon it. Management decisions can be informed by it.

Most importantly, it provides continuity between commissioning and future assurance activities.

5.5 The Quality of the Baseline Matters

The existence of a baseline does not automatically provide assurance. A baseline is only as valuable as the process used to establish it.

A benchmark should never be mistaken for proof of adequacy. A benchmark only becomes meaningful when it is derived from a commissioning process that has demonstrated effective exposure control.

If commissioning is undertaken without a clear understanding of the hazard, the process, the control objective and the evidence required to demonstrate effectiveness, the resulting benchmark may provide consistency but not necessarily confidence. A poorly conceived baseline can be repeatedly verified whilst still failing to represent adequate control.

For this reason, organisations should focus not only on creating a baseline but on ensuring that the baseline is demonstrably linked to the achievement of effective exposure control.

The objective is not merely to establish a reference point. The objective is to establish a reference point that has meaning. This is why competent commissioning remains such an important part of the evidential chain.

5.6 From Commissioning to Assurance

When commissioning is completed effectively, the organisation should possess more than a report. It should possess evidence.

That evidence should explain:

- What the system was intended to achieve.
- How performance was assessed.
- What evidence was gathered.
- Why adequate control was considered to have been achieved.
- What performance baseline was established.

This information becomes the foundation upon which future assurance activities are built.

TExT, maintenance and operational management all depend upon the existence of this foundation. Without it, organisations may possess measurements but lack context. With it, they possess a defensible basis for demonstrating effective control.

Ultimately, commissioning is the point at which intended protection becomes demonstrated protection. It is the moment where assumptions are replaced by evidence and where confidence in effective control begins.

Section 6: The Duty Holder's Assurance Framework

Once adequate control has been established, the Duty Holder's responsibility continues.

LEV systems operate in real workplaces. Processes change. Materials change. Operators change. Production demands change. Filters load. Ductwork deteriorates. Hoods are moved. Working practices evolve.

For this reason, effective LEV assurance cannot depend upon a single commissioning exercise or a single periodic examination. It requires a framework that enables the organisation to maintain confidence that exposure control remains effective throughout the operational life of the system.

This chapter sets out a practical assurance framework for Duty Holders.

The framework is based on six connected layers:

- Design assurance.
- Commissioning assurance.
- Operational assurance.
- Maintenance assurance.
- Verification assurance.
- Governance assurance.

Each layer asks a different question. Together, they help determine whether an organisation can demonstrate effective LEV control under scrutiny.

6.1 Design Assurance

The first layer of assurance concerns design.

The key question is:

Can the control strategy reasonably achieve the intended objective?

Before an LEV system is installed, there should be a clear understanding of the hazard, the process and the control objective. Design assurance considers whether the selected LEV solution is appropriate for the exposure risk being managed.

This includes consideration of:

- Hazardous substance or contaminant.
- Way in which the contaminant is generated.
- Direction and behaviour of contaminant movement.
- Position of the operator.
- Process conditions.
- Hood type and control strategy.
- Required airflow, capture or containment performance.
- Duct transport velocities.
- Air cleaning and discharge arrangements.

Design assurance does not mean that the Duty Holder must personally design LEV systems.

However, Duty Holders should ensure that competent people have considered these issues and that the design intent is documented clearly enough to support future commissioning and verification. Without design assurance, later measurements may lack meaning.

A system cannot be shown to have achieved its intended purpose if that purpose was never properly defined.

6.2 Commissioning Assurance

The second layer of assurance concerns commissioning.

The key question is:

Has adequate control been demonstrated?

Commissioning is the point at which the installed system should be assessed against the design intent. It should demonstrate that the system is capable of achieving the control performance required for the hazard and process being managed.

Commissioning assurance should include evidence of:

- ✓ Design intent being assessed.
- ✓ Installed system being technically verified.
- ✓ Relevant performance measurements being taken.
- ✓ Control effectiveness being evaluated.
- ✓ Assumptions and limitations being recorded.
- ✓ A performance baseline being established.
- ✓ Conclusions being explained and justified.

The commissioning report should not merely state that the system has been commissioned. It should explain why the evidence supports the conclusion that adequate control has been achieved. This is a critical point for Duty Holders.

Commissioning assurance is the foundation upon which later assurance depends. If the original commissioning evidence is weak, incomplete or absent, future TExT reports may still provide useful information, but they may have limited ability to demonstrate that adequate control against a benchmark was established in the first place.

6.3 Operational Assurance

The third layer of assurance concerns how the system is used.

The key question is:

Are systems being used correctly?

Even a well-designed and well-commissioned LEV system can fail to control exposure if it is not used properly. Operational assurance considers whether the LEV system is being used in the way assumed during design and commissioning.

This may include:

- Whether operators understand how the system should be used.
- Is work being carried out within the effective control zone.
- Are hoods positioned correctly.
- Are doors, sashes, enclosures or screens being used as intended.
- Are operators interfering with airflow or containment.
- Have production practices have changed.
- Are local rules and instructions being followed.

This layer is often overlooked because LEV assurance is sometimes treated as an engineering issue only. In reality, exposure control depends heavily on behaviour and working practice.

A hood cannot capture contaminant effectively if the source is positioned outside the capture zone. An enclosure cannot contain contaminant if the sash is set too high or if the full enclosure doors are left open.

An effective control system can be undermined by poor use.

Operational assurance therefore links engineering control to real workplace behaviour.

6.4 Routine LEV Checking Assurance

The key question is:

Can the organisation demonstrate that the LEV system continues to function effectively between formal maintenance visits and Thorough Examination and Test (TExT)?

One of the most important, yet frequently overlooked, elements of LEV assurance is the **routine checking** undertaken by those who use and manage the system on a day-to-day basis.

- Commissioning establishes that adequate control has been achieved.
- Maintenance preserves the condition of the system.
- TExT provides periodic verification that the system continues to perform as intended.

However, none of these activities provide assurance that the LEV system remained effective yesterday, last week or between formal inspections.

Routine LEV checks fill this gap.

LEV systems operate continuously within changing workplaces. Filters gradually become loaded, airflow indicators may move outside their normal operating range, flexible ducting can become damaged, extraction arms may be repositioned, dampers may be altered and operators may unknowingly continue using systems that are no longer providing effective control.

Without routine checks, these changes may remain unnoticed until the next maintenance visit or statutory examination, potentially allowing exposure risks to develop over an extended period.

Routine checking therefore provides an essential layer of assurance by identifying obvious deterioration at the earliest opportunity.

Routine LEV checks may include:

- ✓ Visual inspection of the LEV system before use.
- ✓ Confirmation that airflow indicators remain within the normal operating range.
- ✓ Checking pressure gauges, manometers or other system indicators.
- ✓ Verifying that warning alarms and indicator lights are functioning correctly.
- ✓ Ensuring hoods, capture devices and enclosures remain correctly positioned.
- ✓ Inspecting flexible ducting and visible ductwork for damage or disconnection.
- ✓ Listening for abnormal fan or motor noise and identifying unusual vibration.
- ✓ Confirming that dampers and system settings have not been altered without authorisation.
- ✓ Recording defects and ensuring appropriate corrective action is initiated.

The extent and frequency of these checks should be proportionate to the complexity of the LEV system, the nature of the hazardous substance being controlled and the potential consequences of system failure.

Some higher-risk processes may justify checks before every shift, whilst simpler installations may only require weekly or monthly inspections.

It is important to distinguish routine checking from maintenance and Thorough Examination and Test.

- Routine checks are intended to identify obvious deterioration during normal operation.
- Maintenance restores system performance where deterioration has occurred.
- Thorough Examination and Test provides a structured and independent assessment that the system remains in an efficient state, in efficient working order, in good repair and in a clean condition, whilst verifying that performance remains consistent with the established baseline.

Each activity serves a different purpose. Together they provide continuous assurance throughout the operational life of the LEV system.

For Duty Holders, routine LEV checking provides confidence that exposure control has not been left to chance between formal interventions. It demonstrates active management of the control measure and provides an early warning when assumptions about system performance may no longer be valid.

Routine checking therefore forms an essential link within the evidential chain.

It bridges the gap between commissioning, maintenance and statutory verification, helping the organisation demonstrate that effective control is being maintained every day, not simply when the TExT examiner visits.

6.5 Maintenance Assurance

The fourth layer of assurance concerns maintenance.

The key question is:

Are systems being maintained appropriately?

LEV systems require maintenance to remain effective. Over time, components wear, filters become loaded, ductwork may become damaged, dampers may be altered and air movers may no longer perform as intended.

Maintenance assurance considers whether the organisation has appropriate arrangements to keep the system in efficient working order, good repair and clean condition.

This includes consideration of:

- Routine inspection.
- Planned preventive maintenance.
- Filter inspection and replacement.
- Ductwork condition.
- Fan and motor performance.
- Air cleaner performance.
- Damper positions and system balance.
- Prompt rectification of defects.
- Recording of maintenance actions.

Maintenance records provide important evidence. However, maintenance should not be viewed in isolation. The purpose of maintenance is not simply to show that servicing has occurred. The purpose is to preserve the performance needed to maintain effective exposure control.

Maintenance assurance is therefore strongest when linked back to the performance baseline established during commissioning.

6.6 Verification Assurance

The fifth layer of assurance concerns examination and testing.

The key question is:

Do examination and testing activities confirm continuing performance?

This is where Thorough Examination and Test plays a central role. TExT provides evidence that the system continues to operate in a condition consistent with effective control and established performance expectations.

Verification assurance may include:

- ✓ Visual examination of system condition.
- ✓ Airflow & Velocity measurements.
- ✓ Static & Velocity pressure readings.
- ✓ Assessment of hood performance.
- ✓ Filter and air cleaner checks.
- ✓ Comparison with commissioning data.
- ✓ Comparison with previous examination results.
- ✓ Identification of deterioration or defects.
- ✓ Recommendations for remedial action.

TExT is therefore an essential component of the assurance framework. However, its strength depends heavily upon the context in which the findings are interpreted.

A TExT report is most valuable when it can compare current performance against a meaningful commissioning baseline. Where no baseline exists, TExT may still identify defects and current condition, but the level of assurance may be reduced.

Verification assurance therefore depends upon the earlier layers of the framework. It cannot stand entirely alone.

6.7 Governance Assurance

The sixth layer concerns governance.

The key question is:

Can the organisation demonstrate effective control under scrutiny?

Governance assurance considers whether the organisation has sufficient oversight, ownership and evidence to demonstrate that LEV risks are being managed effectively.

This includes:

- Clear ownership of LEV systems.
- Defined responsibilities for maintenance, operation and verification.
- Appointment of competent designers, installers, commissioners and examiners.
- Retention of commissioning and TExT records.
- Review of defects and corrective actions.
- Management of change.
- Escalation of unresolved risks.
- Periodic review of assurance arrangements.
- Ability to explain how evidence supports confidence in control.

This layer is particularly important for Duty Holders.

Legal accountability for exposure control cannot be delegated simply by appointing contractors or consultants. Specialists may provide advice, carry out measurements and prepare reports, but the Duty Holder remains responsible for ensuring that exposure is adequately controlled.

Governance assurance therefore asks whether the organisation can see, understand and rely upon the evidence being produced.

Bringing the Layers Together

Each layer of the assurance framework provides a different type of confidence.

Design assurance asks whether the proposed control strategy is appropriate.



Commissioning assurance asks whether adequate control has been demonstrated.



Operational assurance asks whether the system is being used correctly.



Maintenance assurance asks whether the system is being preserved.



Verification assurance asks whether performance continues.



Governance assurance asks whether the organisation can demonstrate control under scrutiny.

No single layer is sufficient on its own.

A current TEXT report is valuable, but it is weakened if the system was never properly commissioned. A strong commissioning report is valuable, but it is weakened if the system is poorly maintained.

Good maintenance records are valuable, but they are weakened if operators use the system incorrectly. Strong governance depends upon all layers working together.

The Duty Holder's Assurance Question

The purpose of this framework is not to create unnecessary cost or complexity. It is to help Duty Holders ask a better question.

Instead of asking:

Do we have the required LEV paperwork?

the more useful question is:

Do we have sufficient confirmation of control evidence, across all layers of assurance?

That question changes the focus from 'documentation' to 'protection'. It recognises that LEV assurance is not a single event, report or measurement. It is a continuing process of establishing, maintaining and demonstrating confidence in effective exposure control.

When all six layers are visible, connected and properly managed, the Duty Holder is in a much stronger position to demonstrate that workers are being protected and that exposure risks are being controlled.

Section 7: Beyond Measurements

Throughout this guide, a recurring theme has emerged:

Measurements are important.

However:

Measurements alone rarely demonstrate effective control.

This distinction is fundamental to understanding LEV assurance.

Engineering measurements provide valuable information about how an LEV system is performing. They help identify deterioration, support maintenance decisions, establish performance baselines and contribute to statutory examination activities. Yet measurements only represent one part of the evidence needed to demonstrate that exposure is being adequately controlled.

For Duty Holders, understanding this distinction is important because exposure control is ultimately concerned with protecting people, not simply achieving numerical values.

The purpose of measurement is not to collect data. The purpose of measurement is to support understanding. And understanding is what creates assurance.

7.1 Why Numbers Alone Are Not Enough

Modern LEV systems generate a wide range of measurable information.

Examples include:

- Exposure monitoring results.
- Airflow rates
- Duct velocities.
- Hood face velocities.
- Static & Velocity pressure measurements.
- Filter pressure losses.
- Fan performance data.

Each of these measurements can provide useful insights into system performance. However, none of them automatically demonstrate effective control when viewed in isolation.

Consider a hood face velocity measurement. A measured value may appear satisfactory when compared with previous records. Yet that measurement alone cannot answer several important questions:

- Is the contaminant actually being controlled/contained/captured?
- Is the operator positioned correctly?
- Are there potential secondary sources of exposure?
- Has the process changed?
- Does the airflow pattern support effective contaminant control?
- Was the original benchmark itself appropriate?

Similarly, a stable static pressure reading may demonstrate consistency, but consistency alone does not confirm adequacy. A system can remain consistently ineffective if the original assumptions were incorrect. This is why measurements should be viewed as evidence inputs rather than conclusions.

Measurements contribute to understanding.

They do not replace understanding.

7.2 The Difference Between Data and Evidence

One of the most common misunderstandings in occupational hygiene and engineering control assessment is the assumption that data and evidence are the same thing.

They are not.

Data consists of observations, measurements and recorded information.

Evidence is the interpretation of that information within an appropriate context.

For example:

A commissioning report may record an airflow rate of 2,500 m³/hr. On its own, this figure tells us very little. Its significance depends upon understanding the:

- Process being controlled.
- Contaminant characteristics.
- Hood design.
- Design intent.
- Commissioning conclusions.
- Exposure control objective.

Only when these factors are considered together does the measurement become evidence.

The same principle applies throughout LEV management.

Data informs decisions.

Evidence supports conclusions.

The distinction is subtle but important.

Organisations often possess large volumes of data. Far fewer possess clearly documented evidence explaining why that data demonstrates effective control.

7.3 The Importance of Observation

Not all evidence is numerical.

Some of the most valuable information available during commissioning, examination and investigation comes from observation.

Competent assessors routinely consider factors such as:

- Operator positioning.
- Work practices.
- Process variability.

- Hood placement.
- Airflow disturbance.
- Housekeeping standards.
- Material handling methods.
- Abnormal operating conditions.

These observations often explain issues that measurements alone cannot identify. A technically satisfactory airflow measurement may exist alongside poor operator behaviour. A well-performing hood may be positioned incorrectly during normal production. An enclosure may function effectively when closed but provide limited control when routinely left open.

Without observation, these factors may remain hidden.

For this reason, good assurance depends upon both measurement and observation. The strongest conclusions are often supported by both.

7.4 Understanding Exposure Pathways

At the heart of exposure control lies a simple principle:

Workers are exposed to contaminants, not measurements.

This may seem obvious, but it has important implications. The ultimate purpose of LEV is not to achieve a particular airflow rate or velocity. The purpose is to interrupt the pathway between contaminant generation and worker exposure.

Understanding this pathway requires consideration of:

- Where contaminants are generated.
- How contaminants move.
- Where workers are positioned.
- How contaminants may escape.
- How the LEV system interacts with the process.

- How work is actually carried out.
- Consideration of potential for secondary sources of exposure.

This broader perspective helps explain why identical measurements can sometimes produce different outcomes in different workplaces.

The measurement may be the same.

The exposure pathway may not.

Effective assurance therefore requires an understanding of the entire control scenario rather than the measurement alone.

7.5 From Measurement to Assurance

Measurements do not become assurance automatically. Between the collection of data and confidence in effective exposure control lies a process of interpretation, evaluation and judgement. This process transforms raw measurements into meaningful evidence that can support decisions about worker protection.

The progression is simple, but important. Understanding how information moves from measurement to assurance helps explain why data alone is rarely enough to demonstrate effective control.

When any stage in this progression is weak, confidence may be reduced. When all stages are strong, the organisation is far better placed to demonstrate effective control under scrutiny.

This progression is one of the reasons why the links in the chain; commissioning, examination, maintenance and governance, all remain important. Each contributes to the interpretation and understanding of the evidence available.

The relationship between measurements, evidence and assurance can be visualised as a simple progression.

Section 7: Beyond Measurements

Understanding How Data Becomes Assurance

Measurements are only the starting point. Through interpretation and context they become evidence, which in turn supports assurance.



THE KEY TAKEAWAY

Measurements are essential, but they are only the beginning.

Only when they are interpreted and placed in context do they become evidence.

Only when the evidence is sufficient and connected can it support assurance.



Data informs. Context explains. Evidence supports. Assurance protects.

7.6 The Duty Holder's Perspective

For Duty Holders, the lesson is straightforward.

Do not ask:

What measurements do we have?

Ask:

What do those measurements tell us about exposure control?

The first question focuses on data. The second focuses on evidence. And it is evidence that ultimately supports confidence in worker protection.

The strongest organisations are rarely those with the greatest quantity of measurements. They are the organisations that can clearly explain how measurements, observations, professional judgement and operational knowledge combine to demonstrate that exposure risks are being effectively controlled.

Because in the end, assurance is not created by numbers alone. It is created by understanding what those numbers mean.

Section 8: Managing Change

One of the greatest challenges in maintaining effective exposure control is that workplaces rarely remain static.

Processes evolve.

Materials change.

Production demands increase.

Equipment is modified.

Operators develop new ways of working.

Over time, even small changes can alter the conditions under which an LEV system was originally designed, commissioned and verified. This creates an important challenge for Duty Holders.

Evidence that demonstrated effective control at one point in time may no longer provide the same level of assurance if the assumptions upon which that evidence was based have changed. For this reason, effective LEV management is not simply about maintaining equipment. It is also about managing change.

Change management helps ensure that the evidential chain established during commissioning remains valid throughout the operational life of the system. Without it, organisations risk relying upon evidence that no longer reflects reality.

8.1 Why Control Performance Changes

Every LEV system is designed, commissioned and operated within a specific context.

That context includes the:

- Hazardous substances being used.
- Way contaminants are generated.

- Production process.
- Operating environment.
- Behaviour of operators.
- Configuration of the LEV system itself.

When any of these factors change, the assumptions supporting the original commissioning evidence may also change.

Examples might include:

- Introduction of new materials.
- Changes to production methods.
- Increased production volumes.
- Alterations to workpiece size or configuration.
- Changes in operator positioning.
- Relocation of equipment.
- Modifications to hoods or enclosures.
- Changes to air cleaning systems.
- Building alterations affecting airflow patterns.
- New operational practices.

Some changes are obvious. Others may appear insignificant. However, even small changes can influence contaminant behaviour, airflow patterns and operator exposure.

The challenge is that these changes often occur gradually and may not be recognised as affecting LEV performance.

8.2 The Hidden Risk of Assumption Drift

When an LEV system is commissioned, a number of assumptions are usually made.

For example:

- The process will operate in a particular way.
- Operators will work within defined positions.
- Contaminant release points will remain unchanged.
- Production volumes will remain within expected limits.
- Hood arrangements will not be altered.
- Airflow characteristics will remain stable.

Over time, these assumptions may slowly become less accurate. This phenomenon can be thought of as ***assumption drift***.

The LEV system itself may continue to function correctly. TExT reports may continue to show stable measurements. Maintenance records may remain satisfactory. Yet the workplace may have changed significantly from the conditions that existed when adequate control was originally demonstrated.

This creates a potential assurance gap.

The evidence remains.

The assumptions have changed.

And the connection between the evidence and the current reality becomes weaker.

This is one of the reasons why organisations can possess years of apparently satisfactory records whilst still experiencing exposure control problems.

The issue is not necessarily the quality of the evidence. It is that the evidence may no longer reflect the current operating conditions.

8.3 Managing Change as Part of Assurance

Change management should therefore be viewed as an essential link in the chain and certainly an integral part of the assurance framework.

Its purpose is not to prevent change. Its purpose is to ensure that changes are understood and assessed before they undermine confidence in exposure control.

A practical change management process may consider questions such as:

- Has the process changed?
- Have hazardous substances changed?
- Have production rates increased?
- Have working methods changed?
- Have hoods been relocated or modified?
- Has equipment been replaced?
- Have operating conditions changed?
- Does existing commissioning evidence remain valid?
- Is additional assessment required?

These questions help organisations determine whether existing evidence continues to support the conclusion that adequate control exists.

Where the answer is uncertain, further assessment may be necessary.

8.4 When Re-Commissioning Should Be Considered

Not every change requires a full re-commissioning exercise. Many routine changes can be addressed through maintenance activities, operational reviews or targeted assessments. However, some changes may be significant enough to require the organisation to revisit the original commissioning evidence.

Examples may include:

- Significant changes to the process.
- Introduction of new hazardous substances.
- Changes to contaminant generation mechanisms.

- Major modifications to hoods or enclosures.
- Ductwork alterations.
- Fan replacement or significant system upgrades.
- Changes to control philosophy.
- Building alterations affecting airflow behaviour.
- Relocation of equipment or processes.

In these situations, organisations should consider whether the existing performance baseline remains valid. If the answer is unclear, re-commissioning may be necessary to establish a new baseline and restore confidence in the evidential chain.

The objective is not simply to generate additional documentation. The objective is to confirm that the system remains capable of achieving effective control under the new conditions.

8.5 The Duty Holder's Change Management Question

For many Duty Holders, the most useful question is surprisingly simple:

Would the original commissioning team recognise this process today?

If the answer is yes, the existing evidence may remain largely valid. If the answer is no, further assessment may be required.

This simple test encourages organisations to think beyond the condition of the LEV system itself and to consider whether the circumstances surrounding the system have changed. Because assurance depends not only on the performance of the equipment, but also on the validity of the assumptions that support the evidence.

8.6 Preserving the Evidential Chain

Earlier in this guide, the concept of the evidential chain was introduced. Managing change is one of the most important mechanisms for preserving that chain.

Without change management:

- Design assumptions may become outdated.
- Commissioning evidence may lose relevance.
- Performance baselines may become unreliable.
- TExT results may become more difficult to interpret.
- Confidence in exposure control may be weakened.

With effective change management, organisations can maintain continuity between past evidence and current conditions.

The evidential chain remains connected. The assurance framework remains valid. And confidence in effective exposure control is preserved.

Ultimately, managing change is not simply about controlling modifications. It is about protecting the integrity of the evidence upon which confidence in worker protection depends.

Example: When All the Measurements Were Right

A fabrication company had operated a welding extraction system for eight years. TExT reports consistently demonstrated stable airflow measurements and no significant defects. Maintenance records were complete.

However, a production change introduced larger fabricated assemblies that prevented operators positioning work sufficiently close to the extraction hood as originally intended.

- The LEV system continued to perform exactly as previous examinations indicated.
- The assumptions underpinning the commissioning evidence had changed.
- The issue was not equipment deterioration.
- The issue was ***assumption drift***.

A review of operator working practices identified that contaminants were now being generated outside the effective capture zone.

Following modification of the hood arrangement and re-commissioning, effective control was re-established and a new performance baseline created.

Key Lesson

In this case stable measurements alone did not identify the problem. Understanding how the evidence related to the current process did.

Section 9: What Good Evidence Looks Like

Throughout this guide, the importance of evidence has been emphasised repeatedly.

Effective LEV assurance depends upon evidence.

- ✓ Commissioning creates evidence.
- ✓ TExT provides evidence.
- ✓ Maintenance records preserve evidence.
- ✓ Operational observations add evidence.
- ✓ Change management protects the relevance of evidence.

However, not all evidence is equally useful. Some evidence provides strong support for the conclusion that exposure is being effectively controlled. Other evidence may be incomplete, disconnected, difficult to interpret or unable to withstand scrutiny. For Duty Holders, understanding the difference is important.

The question is not simply whether evidence exists. The question is whether the evidence is strong enough to support confidence in effective control.

9.1 The Purpose of Evidence

Evidence exists to support conclusions.

In the context of LEV, the central conclusion is:

Exposure to hazardous airborne substances is being adequately controlled.

To support that conclusion, evidence should help answer several questions:

- What hazard was being controlled?
- What control objective was intended?
- Why was LEV selected?
- How was adequate control demonstrated?
- What performance baseline was established?

- How is ongoing performance verified?
- Have changes affected the validity of previous evidence?
- Who has reviewed and accepted the evidence?

Good evidence does not merely record activity. It explains why the activity matters.

A TExT report, for example, is stronger when it clearly links current findings to commissioning data, known system performance, identified defects, previous trends and the control objective. A commissioning report is stronger when it explains not only what was measured, but why the evidence supports the conclusion that adequate control was achieved.

The strongest evidence helps a competent third party understand the reasoning behind the conclusion.

9.2 Characteristics of Strong Evidence

Strong evidence is usually characterised by six qualities. It is relevant, traceable, contextual, proportionate, understandable and defensible.

Relevant

Evidence should relate directly to the control objective. A measurement may be technically accurate but of limited value if it does not help demonstrate whether exposure is being controlled.

Relevant evidence focuses on the things that matter most to worker protection.

Traceable

Evidence should allow the reader to understand where information came from, when it was obtained, who produced it and what conditions existed at the time.

Traceability is particularly important when evidence is reviewed months or years later. A future manager, examiner, regulator or auditor should be able to understand the basis of the evidence without relying entirely on the memory of those originally involved.

Contextual

Evidence should be interpreted in context. Measurements should be linked to design intent, process conditions, contaminant behaviour and previous performance.

Without context, data can easily become disconnected from the question it is intended to answer.

Proportionate

Evidence should be proportionate to the risk. A simple low-risk system may not require the same depth of assessment as a complex system controlling highly hazardous substances. However, in all cases the evidence should be sufficient to support the conclusion being reached.

The greater the potential consequence of inadequate control, the stronger the evidence should be.

Understandable

Evidence should be presented in a way that can be understood by those who need to rely upon it. This does not mean oversimplifying technical information. It means ensuring that conclusions, assumptions, limitations and significant findings are clearly explained.

A report that only a specialist can interpret may have limited governance value for the Duty Holder.

Defensible

Evidence should be capable of withstanding reasonable scrutiny. This means that conclusions should be supported by appropriate information, competent judgement and transparent reasoning. Defensible evidence allows an organisation to explain not only what was done, but why the resulting conclusion was reasonable.

These six qualities are summarised in the following evidence framework.

SECTION 9:

What Good Evidence Looks Like

Strong evidence has six essential qualities.

When evidence demonstrates these qualities, it can support confident, defensible conclusions about exposure control.



STRONG EVIDENCE CREATES ASSURANCE.

When all six qualities are present, evidence becomes a reliable basis for confidence in effective exposure control.



Evidence



Assurance



Confidence



Protection

9.3 Characteristics of Weak Evidence

Weak evidence is often not a consequence of poor intentions or poor control. More commonly, it arises because information is incomplete, disconnected or difficult to interpret.

Examples may include:

- Risk assessments that identify LEV as a control measure without explaining why it was selected or what it is intended to achieve.
- Commissioning records that contain measurements but do not explain the control objective.
- TExT reports that cannot be compared against a meaningful baseline.
- Maintenance records that confirm work was undertaken but provide little evidence regarding the impact on system performance.
- Reports that state conclusions without clearly explaining the evidence that supports them.
- Records that do not identify operating conditions, assumptions or significant limitations.
- Evidence that no longer reflects the current process because changes have occurred over time.

Weak evidence does not necessarily mean that control is ineffective. It means that confidence in the conclusion may be reduced because the reasoning supporting that conclusion is unclear, incomplete or difficult to demonstrate.

The issue is therefore not simply whether evidence exists. The issue is whether the evidence helps explain why the organisation believes exposure is being effectively controlled.

9.4 Evidence Should Tell a Coherent Story

Good evidence should tell a coherent story from hazard to assurance. That story should be capable of being followed logically.

For example:

- ✓ The organisation identified a hazardous substance.
- ✓ It assessed how exposure could occur.
- ✓ LEV was selected as an appropriate control measure.
- ✓ It defined what the LEV system needed to achieve.
- ✓ The system was commissioned to demonstrate adequate control.
- ✓ A performance baseline was established
- ✓ The system was maintained against that baseline.
- ✓ The LEV was periodically examined and tested.
- ✓ Changes that could affect control were reviewed.
- ✓ Evidence supporting confidence in continuing effectiveness has been retained.

This is the evidential chain in practical form. Where the story is clear, assurance is strengthened. Where the story is fragmented, assurance is weakened.

9.5 The Boardroom Test

A useful way for Duty Holders to assess the strength of their evidence is to apply what might be called the Boardroom Test.

Ask:

Would this evidence allow a senior leader to understand how we know workers are adequately protected?

This question is deliberately practical. Board members and senior managers do not need to understand every technical detail of an LEV system. However, they should be able to understand the basis upon which the organisation has confidence in exposure control.

If the evidence cannot be explained clearly at board level, it may not be sufficiently clear for governance purposes.

A second version of the test is equally useful:

Would this evidence satisfy a regulator, insurer, auditor or court if exposure control was challenged?

If the answer is uncertain, the organisation may need to strengthen the evidence, clarify the reasoning or review the assurance framework.

9.6 The Duty Holder's Evidence Review

Duty Holders do not need to personally undertake every technical assessment. However, they should ensure that appropriate arrangements exist to review the quality and completeness of evidence.

A practical evidence review may consider:

- Is design intent documented?
- Are commissioning records available?
- Are performance baselines clear?
- Do TExT reports compare current performance against meaningful benchmarks?
- Are defects tracked to completion?
- Are changes assessed for impact on control?
- Are assumptions and limitations recorded?
- Are competent people involved?
- Can the organisation explain why it believes control is effective?

This type of review moves the organisation beyond simply checking whether documents exist. It tests whether those documents support assurance.

9.7 From Evidence to Confidence

The purpose of good evidence is to create confidence that:

- ✓ **All Hazards have been identified and are understood.**
- ✓ **The control strategy is appropriate.**
- ✓ **Adequate control was demonstrated.**
- ✓ **Performance is maintained.**
- ✓ **Change is managed.**
- ✓ **The organisation can demonstrate worker protection under scrutiny.**

This is why the quality of evidence matters. The strongest LEV assurance systems are not necessarily those with the greatest volume of documentation. They are those with evidence that is connected, understandable and capable of supporting defensible conclusions.

Good evidence does not merely prove that activities occurred. It helps demonstrate that effective control exists.

Section 10: The Ten Questions Every Duty Holder Should Be Able to Answer

Throughout this guide, a recurring theme has emerged:

Effective LEV assurance is not simply about possessing reports, measurements or maintenance records. It is about being able to demonstrate, through a connected chain of evidence, that exposure risks are being effectively controlled.

For Duty Holders, this principle can be distilled into a series of practical questions. The purpose of these questions is not to create additional administration or complexity. Rather, they provide a simple way of assessing whether the organisation possesses the information, evidence and assurance needed to demonstrate effective control.

If a Duty Holder can answer these questions confidently and support those answers with evidence, they are likely to possess a strong foundation for LEV assurance. If significant uncertainty exists, there may be gaps within the evidential chain that require attention.

Question 1: Why Does This LEV System Exist?

Every LEV system should have a clearly defined purpose.

The organisation should understand:

- What hazardous substance is being controlled.
- How exposure could occur.
- Using the Hierarchy of Control – what control options were considered.
- Why LEV was selected as the control measure.
- Are other, additional controls also required.

If the purpose of the system cannot be clearly explained, confidence in the wider assurance process may already be weakened.

Question 2: What Level of Control Was Intended?

The Duty Holder should understand the original control objective.

This may include:

- Preventing contaminant release.
- Capturing airborne contaminants.
- Containing hazardous processes.
- Maintaining exposure below specific limits.

The question is not merely what equipment was installed. The question is what outcome the equipment was intended to achieve.

Question 3: How Was Adequate Control Originally Demonstrated?

This is one of the most important questions in the entire assurance process.

The organisation should be able to explain:

- How commissioning was undertaken.
- What evidence was gathered.
- Why adequate control was considered to have been achieved.
- What assumptions were made.

If this information is unavailable, the organisation may possess verification evidence without a clear understanding of the basis upon which control was originally established.

Question 4: What Performance Baseline Was Established?

The organisation should know:

- What measurements were recorded.

- What operating conditions existed.
- What performance criteria were achieved.
- What benchmark was established for future comparison.

Without a baseline, it becomes significantly more difficult to interpret future examination and testing results.

Question 5: How Do We Know Performance Continues?

The organisation should be able to explain how continuing assurance is obtained.

This may include:

- Routine LEV user checks.
- Airflow indicator monitoring.
- Maintenance inspections.
- Thorough Examination and Test.
- Performance trending.
- Operational observations.

The objective is to understand how confidence in ongoing performance is maintained.

Question 6: How Is the System Maintained?

The Duty Holder should understand:

- What maintenance activities are required.
- How frequently maintenance is undertaken.
- How defects are identified and corrected.
- How maintenance performance is recorded.

Maintenance evidence should demonstrate more than activity. It should support confidence that the system continues to perform as intended.

Question 7: What Has Changed Since Commissioning?

Many exposure control problems arise not because systems fail, but because circumstances change.

The organisation should understand whether:

- Materials have changed.
- Processes have changed.
- Production demands have increased.
- Equipment has been modified.
- Working practices have evolved.

The validity of existing evidence depends upon understanding these changes.

Question 8: Who Owns LEV Assurance?

Responsibility should be clear.

The organisation should know who:

- Owns the LEV risk.
- Reviews examination findings.
- Authorises corrective actions.
- Manages change.
- Retains key records.

Accountability is a fundamental component of assurance.

Question 9: What Evidence Supports Confidence in Effective Control?

This question brings together the themes of the entire guide.

The organisation should be able to identify:

- Exposure monitoring information.
- Commissioning evidence.
- Performance baselines.
- TExT reports.
- Maintenance records.
- Operational observations.
- Change management records.

More importantly, it should understand how these pieces of evidence connect together.

Question 10: Could We Demonstrate Effective Control Under Scrutiny?

This is the ultimate assurance question.

If an inspector, auditor, insurer, occupational hygienist, senior manager or court asked:

How do you know workers are adequately protected?

Could the organisation provide a clear and defensible answer?

The answer should not depend upon a single report. It should be supported by a connected body of evidence demonstrating:

- Why the system exists.
- What it was intended to achieve.
- How effectiveness was established.
- How performance is maintained.
- How change is managed.
- How assurance is obtained.

Using the 10 Questions

The questions in this chapter are not intended to be a formal audit tool. However, they provide a useful indicator of assurance maturity.

Where answers are clear, supported by evidence and understood by relevant stakeholders, confidence in effective control is likely to be stronger. Where answers are uncertain, incomplete or dependent upon assumptions, further review may be beneficial.

The objective is not perfection.

The objective is confidence.

Confidence that the organisation understands its risks, understands its controls and can demonstrate that workers are being protected from harmful exposure.

Ultimately, these ten questions provide a practical way of testing the integrity of the entire evidential chain described throughout this guide.

If the chain is strong, the answers should be straightforward.

If the answers are difficult, the chain may require strengthening.

Section 11: Conclusions

At first glance, the management of Local Exhaust Ventilation may appear relatively straightforward.

Systems are designed.

Equipment is installed.

Measurements are taken.

Maintenance is undertaken.

Thorough Examination and Test reports are produced.

Records are retained.

Yet as this guide has explored, effective exposure control is rarely demonstrated by any single activity, report or measurement. Instead, confidence in worker protection is built through a connected body of evidence that spans the entire lifecycle of an LEV system. This distinction is important.

Many organisations can demonstrate that activities have been undertaken. Fewer organisations can clearly demonstrate how those activities combine to support the conclusion that exposure risks are being effectively controlled. The difference between the two is the difference between compliance and assurance.

Throughout this guide, a recurring theme has emerged:

The purpose of LEV management is not to generate reports or to incur unnecessary costs.

The purpose of LEV management is to protect people from harmful exposure.

Reports, measurements, examinations and maintenance activities are valuable because they contribute evidence towards that objective. However, evidence only becomes meaningful when it is connected to the wider assurance framework.

- ✓ A commissioning report gains value when it demonstrates that adequate control has been achieved.

- ✓ A performance baseline gains value when it supports future verification.
- ✓ A TExT report gains value when it can be interpreted against a meaningful benchmark.
- ✓ Maintenance records gain value when they demonstrate preservation of effective control.
- ✓ Governance arrangements gain value when they allow the organisation to understand, manage and rely upon the evidence available.

Viewed individually, these activities may appear unrelated. Viewed collectively, they form the evidential chain that supports confidence in exposure control.

This concept lies at the heart of modern LEV assurance.

The strongest organisations do not simply collect information; they:

Understand how that information supports decision-making.

Understand the assumptions upon which their evidence depends.

Recognise when change may affect confidence in existing conclusions.

Most importantly, they understand that assurance is a continuing process rather than a one-time event.

The challenge for Duty Holders is therefore not merely to ensure that LEV systems are examined, maintained and tested. The challenge is to ensure that the organisation can answer a far more important question:

How do we know that workers are adequately protected?

The answer to that question should not depend upon a single measurement. It should not depend upon a single report. It should not depend upon the knowledge of a single individual. It should be supported by a coherent and defensible body of evidence that explains:

- Why the system exists.
- What it was intended to achieve.
- How adequate control was established.
- How performance is maintained.
- How change is managed.

- How assurance is obtained.

Where this evidence exists and remains connected, organisations are far better placed to demonstrate effective control under scrutiny. Where it does not, confidence may be weakened regardless of the amount of documentation available.

Because at its core, LEV management is not an engineering exercise.

Ultimately, effective LEV assurance is not about proving that activities have occurred. It is about demonstrating that those activities collectively support the protection of worker health.

It is a worker protection exercise. And the measure of success is not the quality of the paperwork. It is the confidence with which an organisation can demonstrate that harmful exposure has been prevented or adequately controlled.

Effective LEV assurance should therefore be understood as an investment in operational certainty, workforce health and organisational resilience. It helps prevent avoidable rework, reduces the risk of failed control measures, supports better purchasing and maintenance decisions, and provides evidence that may be critical if exposure control is later challenged.

The cost of establishing good evidence is modest when compared with the potential cost of ineffective control.

Final Reflection

If there is one message that Duty Holders should take away from this guide, it is this:

Effective control is established through evidence.

Confidence is built through assurance.

Worker protection is achieved when both are sustained throughout the life of the system. Everything else exists to support that objective.

Duty Holder Quick Reference

The LEV Assurance Chain

Effective control is demonstrated through a connected chain of evidence. Each link supports the next and contributes to confidence that workers are being protected from harmful exposure.

Hazard

What hazardous substance, dust, fume, mist or vapour presents the risk?

Risk

How might exposure occur and what level of control is required?

Control Strategy

What control measures have been selected and why?

Design Intent

What was the system intended to achieve and how would success be defined?

Commissioning

How was adequate control demonstrated and what evidence supports that conclusion?

Performance Baseline

What benchmark was established against which future performance can be assessed?

Operation & Maintenance

Is the system being used correctly and maintained in a condition capable of delivering effective control?

Thorough Examination & Test (TExT)

Does current performance remain consistent with the established baseline and intended level of control?

Assurance

Do the available records, observations and assessments collectively support confidence in effective control?

Confidence

Can the organisation clearly demonstrate that workers are adequately protected from harmful exposure?

The Six Evidence Qualities

Strong evidence is not defined by quantity. It is defined by quality.

Relevant

Directly related to the exposure risk and control objective being assessed.

Traceable

Clearly linked to its source, date, author and operating conditions.

Contextual

Interpreted within the wider understanding of the process, hazard and control strategy.

Proportionate

Appropriate to the level of risk and capable of supporting the conclusions being drawn.

Understandable

Presented in a manner that Duty Holders, managers and stakeholders can interpret and rely upon.

Defensible

Supported by appropriate evidence, sound reasoning and competent professional judgement.

The Duty Holder's Question

When considering any LEV system, ask:

What evidence would I rely upon if I had to demonstrate effective control today?

If the answer is clear, connected and supported by evidence, confidence in effective control is likely to be stronger.

If the answer is uncertain, incomplete or dependent upon assumptions, the evidential chain may require further review.

Remember

- Effective control is demonstrated through evidence.
- Evidence creates assurance.
- Assurance creates confidence.
- Confidence protects people.

Effective control is established through evidence.

Confidence is built through assurance.

Worker protection is achieved when both are maintained throughout the life of the system.



Contact

OXYL8 Ltd

The LEV Specialists

Website: www.oxyl8.com

Knowledge Base: www.levcentral.com

Email: admin@oxyl8.com

For information on LEV training, commissioning, mentoring, consultancy and technical support, please visit our website or contact us directly.

About OXYL8

OXYL8 Ltd is one of the UK's leading specialist providers of Local Exhaust Ventilation (LEV) training and technical guidance.

For more than fifteen years we have delivered professional development to engineers, occupational hygienists, designers, safety professionals and Duty Holders responsible for achieving effective control of hazardous substances.

Our aim is simple:

Helping organisations demonstrate effective LEV control through competence, good engineering practice and evidence-based assurance.

About OXYL8 Professional Publications

OXYL8 Professional Publications publishes practical guidance, technical monographs and professional resources intended to support Duty Holders and other professionals responsible for achieving and demonstrating effective control of hazardous substances in the workplace.

The publications are developed from practical experience, recognised good practice and current legislation, with the objective of promoting robust engineering, sound governance and evidence-based decision making.

The Duty Holder Guide Series explores the wider principles that underpin effective LEV governance, commissioning, performance verification and ongoing assurance.

Further publications are available at:

www.oxy8.com

Duty Holder Guide Series

Current Publications

DHG-001

A Duty Holder's Guide: LEV Assurance

DHG-002

Defensible LEV Commissioning

DHG-003

Commissioning vs TExT