

The background of the entire page is a photograph of industrial ductwork. The ducts are made of corrugated metal and are painted a light blue color. They are arranged in a complex, overlapping pattern, with some running horizontally and others at angles. The lighting is bright, creating highlights and shadows on the metallic surfaces. A dark blue horizontal band is overlaid across the middle of the image, containing the title text.

# THE DUST SPARES LEV TESTING GUIDE



**DUST SPARES**  
dust control spare parts for industry

## LEV Testing: Everything You'll Need to Stay Compliant

Every owner of an industrial LEV system must ensure their ventilation and extraction equipment is safe to use and legally compliant with COSHH regulations. This goes for everyone working, supplying, and maintaining your LEV devices, too.

Here's the [Dust Spares](#) guide to making sure that your business is fully compliant.

### What is Local Exhaust Ventilation?

Local Exhaust Ventilation (LEV) is an engineering control system that helps remove dust, mist, fumes, vapours, and excess gas from workshops, assembly lines, and factory floors.

LEV are mainly used as a health and safety measure as part of wider recycling, extraction, and air filtering systems. LEV systems are commonly found in particulate-heavy workspaces such as sawmills, welding workshops, and chemical laboratories.

LEV helps reduce the risk of asphyxiation, product cross-contamination, and the danger of visual impairment due to dense emissions. Hot particulate (such as steam) can also cause burns and scalding.

LEV setups all have one thing in common - they extract air. LEV uses a network of fans, ducts, intakes, and exhausts to move particles away to a safe location - either a container, vent, or an outside chimney. This is a quick, efficient way to clear rooms of any aerial build-up.

LEV can be automatically or manually activated. Different LEV systems activate when a sensor is tripped, a machine is activated, or the operator decides to turn them on before starting his or her work.

### What Components do LEV Systems Contain?

Most LEV systems contain the following features:

- ❖ **Intake hood** - a covering that allows the LEV to capture and trap rising air from contaminant sources
- ❖ **Ducting** - this pipeline directs captured particulate to filters and exhausts via fans
- ❖ **Air cleaner/arrestor** - this filter cleans extracted air by trapping particles
- ❖ **Air mover** - the central engine that provides the extraction motion, powered by a fan
- ❖ **Discharge (exhaust)**: this vent releases extracted air safely or cycles it back in (after filtering)

Some LEV systems include some additional features:

- **Machine equipment intake** - plumbed-in ducting and fans can be attached directly to machinery, such as cutters and sprayers, to catch particles at the source
- **Flues from hot processes, e.g. furnaces or ovens** - safe heat dissipation and distribution is provided via additional ducting and intakes, keeping the workplace cool
- **Air exchangers** - to stabilise pressure and keep rooms oxygenated, some HVAC-enabled systems also pump a supply of clean, fresh air back in

## Local Exhaust Ventilation Checks, Maintenance, and Repair Schedules

**All LEV systems need regular, professional inspections to keep running as they should.**

Both in-house employees and independent contractors can be trained to perform checks on LEV equipment. This allows companies to keep on top of preventative maintenance and avoid long-term issues. Inspections improve safety and can save money by avoiding the need for expensive LEV machine replacements.

### What Should LEV Testers Know?

Every LEV tester needs to understand:

- ✓ The components of their LEV system and how each one functions
- ✓ How the LEV system should ideally be used - improper operation can lead to faults
- ✓ How to recognise (and replace) a damaged or worn part

These simple checks allow operators to confirm the LEV is performing correctly. Preventative maintenance allows for a more effective risk control strategy, improving safety and protecting machinery. In the UK, BOHS now offers training courses in how to assess, maintain, and repair standard electromechanical LEV systems.

### Who Should Perform LEV Tests?

Anyone undertaking LEV inspections should be qualified and experienced. Look for contractors with a minimum of a P601 certificate or hire employees with a recognised background in LEV and ventilation system maintenance and repair. All LEV testers should be familiar with the LEV standard specifications manual - HSG258 (available from HSE). All LEV testers must be able to use a range of testing equipment, including Pitot Tubes, smoke generators, dust lamps, anemometers, digital sensors, and air samplers.

### What LEV Examiners and Managers SHOULD Know Before Starting - A Quick Checklist

Before conducting an LEV assessment, you should be able to demonstrate competence in and knowledge of the following:

- ✓ The different parts of a standard LEV system and how they each function
- ✓ How to test, maintain, and run LEV systems safely and legally
- ✓ How to recognise, repair, and replace damaged parts
- ✓ Instruments used to measure LEV general performance (e.g. Electronic airflow rate monitors)
- ✓ The best instruments to test the performance of each part of the LEV system
- ✓ The expected performance (in quantifiable figures) of each part of the LEV system
- ✓ How to recognise when the LEV is performing below tolerance (from metrics and mixed data)
- ✓ How to check whether the LEV is actually reducing contaminants to a safe level
- ✓ Signs of dangerous operator overexposure to airborne contaminants (e.g. coughing, visual impairments) and electronic contaminant sensor usage
- ✓ How to record and collate data in a clear and concise way, easily understandable by others
- ✓ General work floor health and safety awareness



# The LEV Testing Guide

## Test Schedules and Logbooks

To make sure your LEV systems are kept in top condition constantly, you should have a dedicated, printed maintenance schedule in place that tells your technicians:

- What to test
- When to test
- Where to test
- How to test

All assessors should be kept on the same schedule to avoid overlaps and gaps in testing. Keeping to one schedule (rather than relying on random spot checks) will also provide you with clearer, better performance data.

## LEV Logbook Criteria

A good place to start building a uniform schedule is with an LEV performance and maintenance logbook. You can use database worksheets, written assessments, and forms to build a comprehensive picture of how your LEV systems are performing.

Your logbook doesn't necessarily have to be a physical 'book'. LEV maintenance schedules are now overwhelmingly stored and managed digitally via Microsoft Excel or specific software.

Your LEV logbook(s) should always contain:

- ❖ A schedule of regular checks and maintenance. This will allow you to spot any missed or partial checks and plan around system downtime
- ❖ Records of the above (when completed)
- ❖ Logs of any replacements and repairs
- ❖ Periodic compliance checks
- ❖ The name of each assessor, linked to every entry
- ❖ Accurate date stamps for all actions
- ❖ A list of spare parts used or that need to be ordered

## LEV Inspection Steps

An LEV inspection can be broken down into four steps:

- **Stage 1** - visual examination to check that the LEV is intact, in good shape, and clean
- **Stage 2** - gathering and review of technical data against benchmarks and past figures to check overall performance
- **Stage 3** - sensor and control testing
- **Stage 4** - logging the data and inspection details

## LEV Checking and Maintenance

It's important to thoroughly assess every part of the LEV system each time an inspection is performed. If one part of the LEV fails or underperforms, it can cause a chain reaction of inefficiency and inadequate particulate removal.

# The LEV Testing Guide

Your maintenance sessions should include visual, mechanical, and electronic assessments of:

- LEV ductwork condition, especially for flexible ducts - holes, leaks, and cracks all reduce airflow
- General mechanical integrity (e.g. corrosion or metal fatigue damage)
- Cleanliness of intake hoods and ducting (especially canopies)
- Condition of electronic and mechanical monitors, sensors, and airflow indicators
- Pressure relief systems and vents
- Illumination (local led lighting) in booths, ducts, and intake hoods
- Noise levels
- Alarm systems
- General airflow

## Technical Performance Criteria

Where applicable, detailed assessments of LEV performance should include:

- ✓ Static pressure target values for intakes, ducting, and airflows (at identified points)
- ✓ Target airflow velocities (for hoods and fans)
- ✓ Particulate exposure benchmarks (particularly for active workspaces)

These metrics can be tested by handheld and fixed electronic monitors, such as particulate sensors and anemometers.

## Potential LEV Issues

From time to time, LEV systems may develop faults, flaws, and long-term damage that may interfere with the efficiency of the unit. You should keep an active lookout for these issues, too - they'll appear randomly in between scheduled inspections.

Common problems include:

- × Hood blockages, obstructions and hood damages
- × Duct damage, wear, obstruction, breaches, and partial blockages
- × Particulate build-up
- × Misaligned dampeners and fixings
- × Filter failures and blockages
- × Excessive noise and vibrations, often caused by loose bearings and objects
- × Electric faults
- × Overheating
- × Lighting failures
- × Human error - is the LEV being used correctly to start with?

All problems should be logged immediately when discovered. This speeds up the process of finding a solution.

**Never** attempt to operate an LEV system that you know is mechanically broken (beyond cosmetic damage) or on the verge of failure. Further mechanical failures, injury, and even death can result.

## How Frequently Should LEV Systems be Tested?

***COSHH specifications require (by law) that you test your LEV systems in full every 14 months.***

However, each separate LEV you run will need its own maintenance schedule. You may need to test high-intensity, high-use, and heavily exposed LEV systems more frequently to ensure optimum performance.

# The LEV Testing Guide

Some LEV systems and components must also (by law) be tested more frequently and extensively, per COSHH Schedule 4 for industrial LEV and other extraction equipment.

These include (but are not limited to):

- ✓ LEV systems for blasting and metal cleaning processes - **every calendar month**
- ✓ Jute cloth manufacturing LEV - **every calendar month**
- ✓ Dry manufacturing LEV for metal articles (other than gold, platinum, or iridium) ground, abraded, or polished mechanically indoors for more than 12 hours a week - **every 6 months**
- ✓ Non-ferrous metal casting fume extractor LEV systems - **every 6 months**

## Test Markings

Once you've successfully tested your LEV equipment, leave a 'red or green' sticker label on each piece of equipment to show whether it has passed or failed the LEV test, with the date and the name of the technician.

Sticker labelling will help when scheduling future inspections and cross-referencing data. The use of distinctive form labels will help you quickly identify logged data stored on the LEV unit itself and individual intake hoods.

## Next Steps: Replacement Parts from Dust Spares

If your LEV systems need parts replaced, get in touch with Dust Spares today. We're specialist suppliers of mechanical and electrical replacements for broken and worn devices, and systems in industries reliant on effective, efficient, fast airborne particulate removal.

We hold thousands of parts in stock in our warehouse, 60% of which are manufactured in the UK. These include:

- ❖ Galvanised and stainless steel ductwork
- ❖ Flexible ducting
- ❖ Ductwork accessories and fixings
- ❖ Dust extractor bins
- ❖ Dampers
- ❖ Diaphragm valves and spare parts
- ❖ Dust extractor bags
- ❖ Filters, filter bags, and filter inserts
- ❖ Hose clamps
- ❖ Seals
- ❖ Valves, nuts, bolts, washers and accessories
- ❖ LEV maintenance tools
- ❖ Sensors and control/monitoring systems

All parts held in stock are available for immediate despatch, with next working day delivery guaranteed to all UK Mainland addresses if the order is placed before 2:30pm. If you are unsure of the part you need, don't hesitate to get in touch and we'll suggest a cost-effective solution.

Please call **03456 800 696** to find out more, or order parts directly through our [online store](#).