THE HEALTH AND SAFETY ONLINE 2021

28-29th April, 2021

SOUTHALLS
A CITATION BUSINESS

LEV & THOROUGH EXAMINATIONS - WHAT YOU NEED TO KNOW TO BE COMPLIANT

Meet your speakers

SOUTHALLS
A CITATION BUSINESS

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What we will cover

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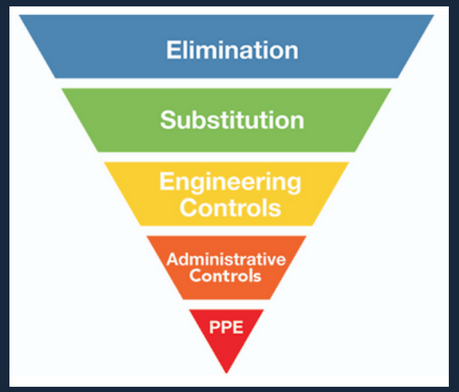
01	Why COSHH is relevant?
02	EH40 Workplace Exposure Limits
03	What is a commissioning certificate?
04	How to check LEV is working?
05	Capture zones
06	Thorough Examinations
07	Common LEV Pitfalls
08	DSEAR
09	DSEAR Risk Assessment
10	LEV & Explosive Atmospheres

Why is COSHH relevant?

- COSHH assessments often missed for processed dust/fume
- Do you refer to the hierarchy of control
- Compatibility of dusts and fumes - explosion risks
- Consider the whole process and maintenance
- PPE may still be required for maintenance tasks e.g. changing filter bags on LEV plant



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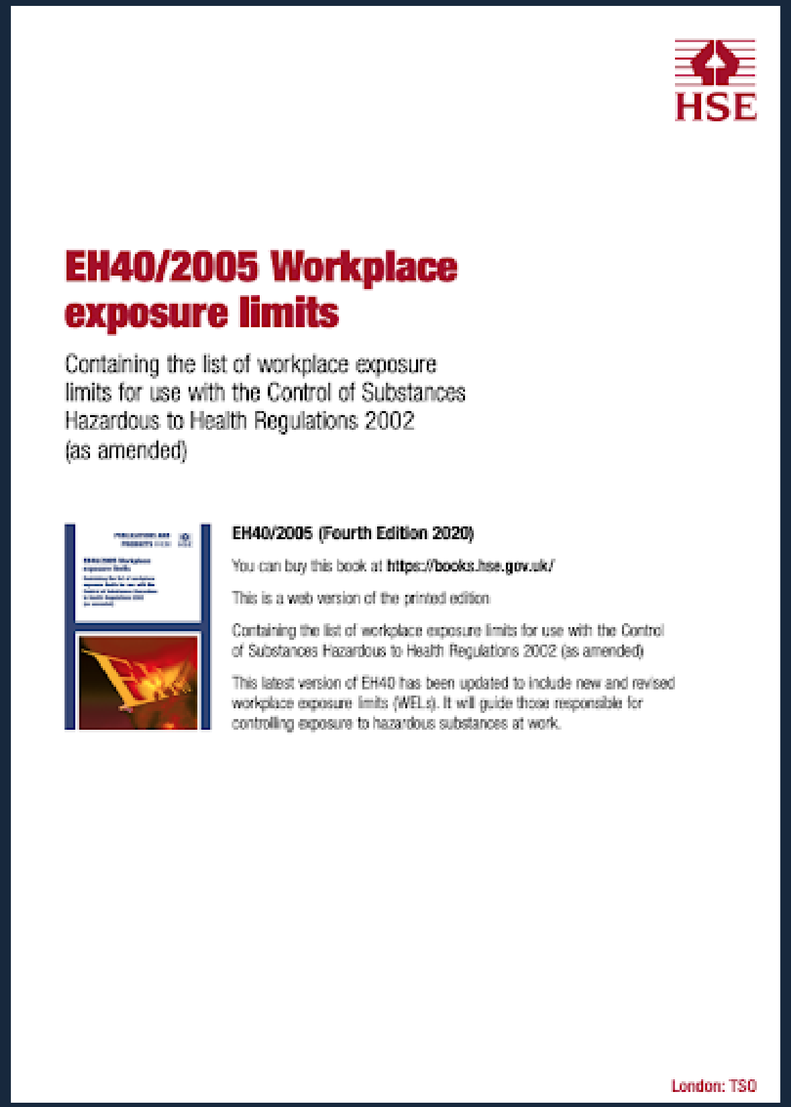
EH40 Workplace Exposure Limits

- Reductions in WEL's applied 17th January 2020
  a. Hardwood dusts
  b. Bunch of other nasties including chromium
- Hardwood dust reduced from 5mg/m3 to 3mg/m3
- Mixed hardwood and softwood should apply 3mg/m3
- Don't forget welding fume
- Have your COSHH assessments been updated to reflect these changes?
- Does your LEV plant still meet the new hardwood limit?
- HSE proactive checks?



HSE

EH40/2005 Workplace exposure limits

Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations 2002 (as amended)

EH40/2005 (Fourth Edition 2020)

You can buy this book at **https://books.hse.gov.uk/**

This is a web version of the printed edition.

Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations 2002 (as amended)

This latest version of EH40 has been updated to include new and revised workplace exposure limits (WELs). It will guide those responsible for controlling exposure to hazardous substances at work.

London: TSO

Commissioning Certificate/Reports

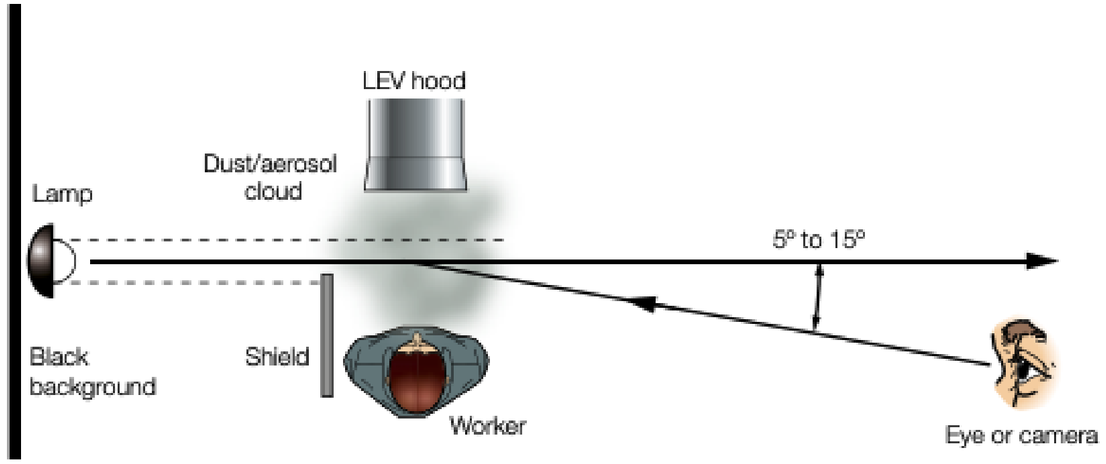
- All LEV installed plant will have a commissioning certificate.
- Commissioning certificate will indicate required flow rate to achieve required fume/dust extraction to achieve WEL.
- Mobile plant have specifications in user manual and ‘hours used’ indicators to notify when filter changes are required.
- Commissioning certificates need to be retained for thorough examination.
- Missing commissioning certificates can leave clients open to further action by LA/HSE.
- Changes in WEL will mean some LEV may need further adjustment.

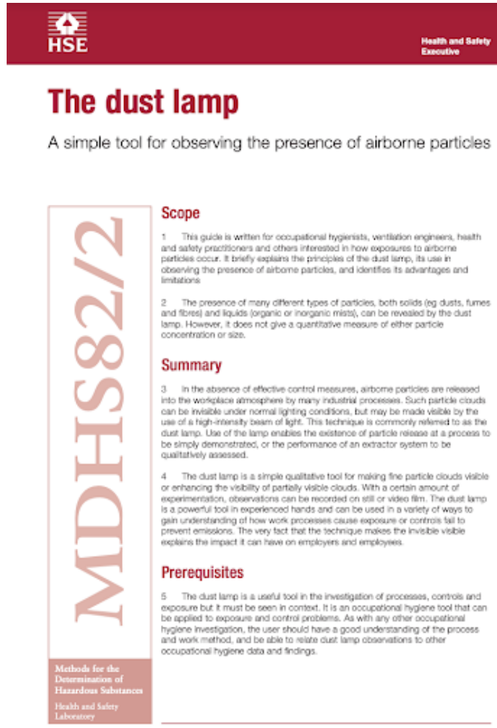
Flow Rate Indicators

- Recommended in HSG258.
- Often installed on commissioning.
- Can be retrofitted.
- Need adjusting if flow rates are adjusted e.g. WEL changes.
- Often damaged or covered in dust.
- Avoid low flow locations.
- Train operators to use them.
- Include LEV and indicators in your monthly visual checks.

Dust/Fume Lamps

- OK for one-off checks for minimal use equipment.
- Work best with a contrasting background e.g. old welding screen.
- Provides an indication of LEV performance only.
- HSE MDHS82 gives more info.

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The dust lamp

A simple tool for observing the presence of airborne particles

MDHS82/2

Scope

1 This guide is written for occupational hygienists, ventilation engineers, health and safety practitioners and others interested in how exposures to airborne particles occur. It briefly explains the principles of the dust lamp, its use in observing the presence of airborne particles, and identifies its advantages and limitations.

2 The presence of many different types of particles, both solids (eg dusts, fumes and fibres) and liquids (organic or inorganic mists), can be revealed by the dust lamp. However, it does not give a quantitative measure of either particle concentration or size.

Summary

3 In the absence of effective control measures, airborne particles are released into the workplace atmosphere by many industrial processes. Such particle clouds can be invisible under normal lighting conditions, but may be made visible by the use of a high-intensity beam of light. This technique is commonly referred to as the dust lamp. Use of the lamp enables the existence of particle release at a process to be simply demonstrated, or the performance of an extractor system to be qualitatively assessed.

4 The dust lamp is a simple qualitative tool for making fine particle clouds visible or enhancing the visibility of partially visible clouds. With a certain amount of experimentation, observations can be recorded on still or video film. The dust lamp is a powerful tool in experienced hands and can be used in a variety of ways to gain understanding of how work processes cause exposure or controls fail to prevent emissions. The very fact that the technique makes the invisible visible explains the impact it can have on employers and employees.

Prerequisites

5 The dust lamp is a useful tool in the investigation of processes, controls and exposure but it must be seen in context. It is an occupational hygiene tool that can be applied to exposure and control problems. As with any other occupational hygiene investigation, the user should have a good understanding of the process and work method, and be able to relate dust lamp observations to other occupational hygiene data and findings.

Methods for the Determination of Hazardous Substances

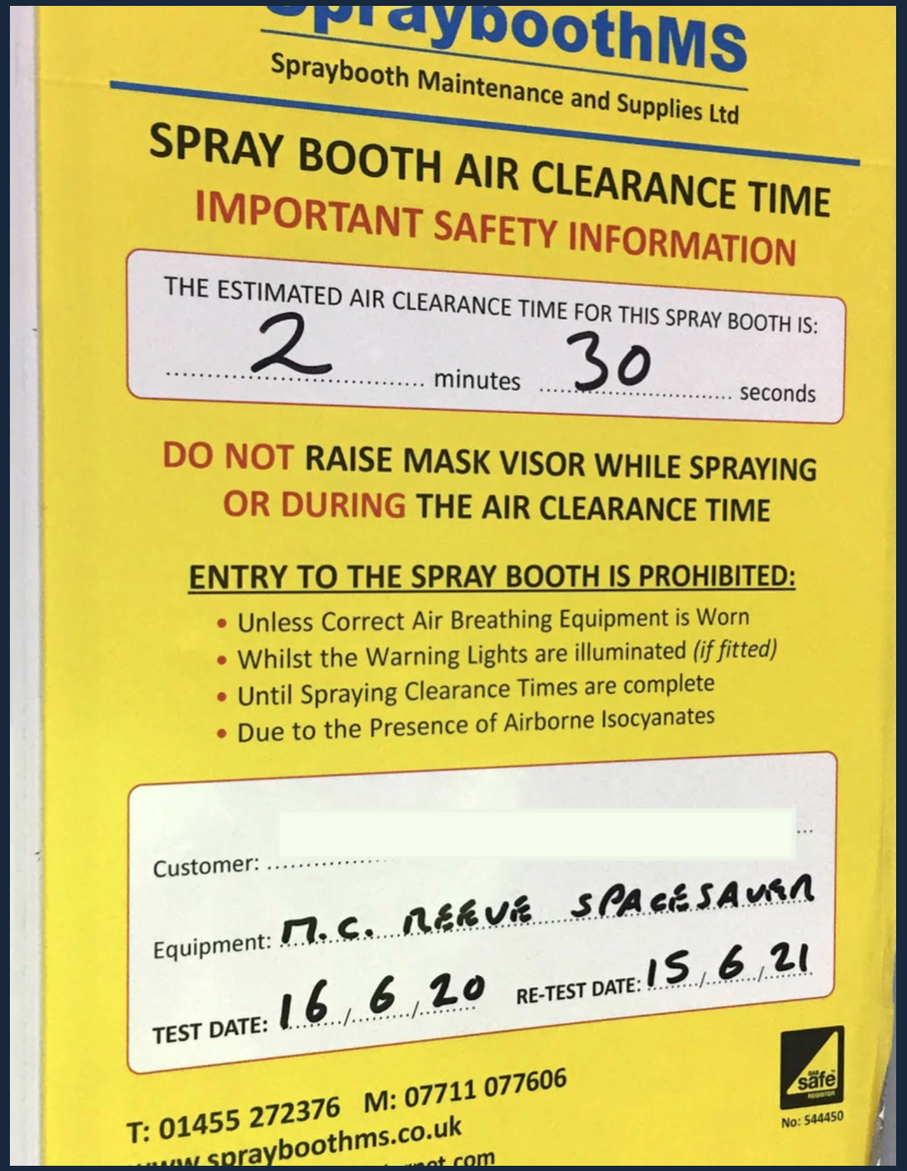
Health and Safety Laboratory

Smoke testing

- OK for one-off checks for minimal use equipment.
- Provides an indication of LEV performance only.
- Good for testing capture zone effectiveness.
- Dragar Tubes good for localised testing approx £3 each.
- Useful for checking LEV draw distance.
- Positive proactive approach for welding controls.

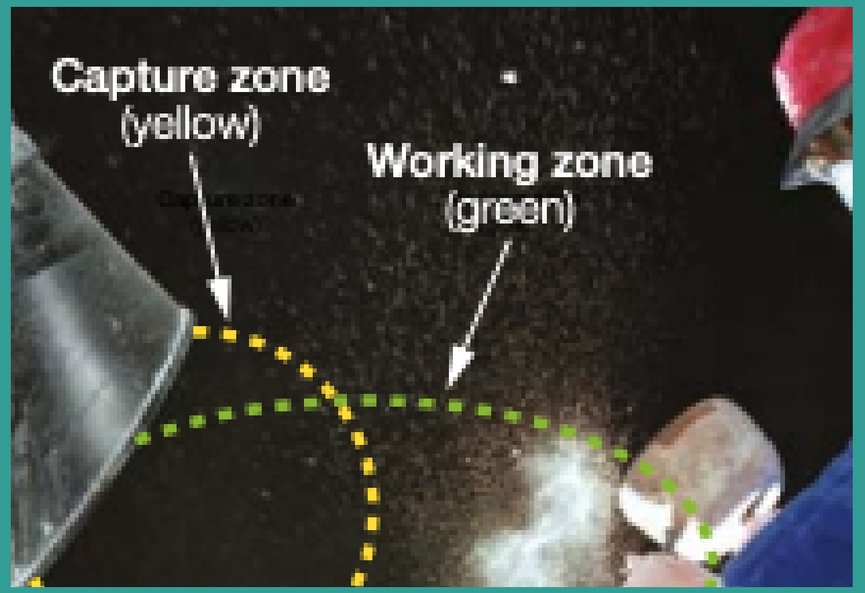
Clearance times

- More relevant to RPE users.
- Smoke bombs/machines are better for larger enclosures and checking clearance times.
- Clearance times can change so check your thorough examination reports.
- Ensure timers are available to monitor clearance times.
- Check signage is correct.



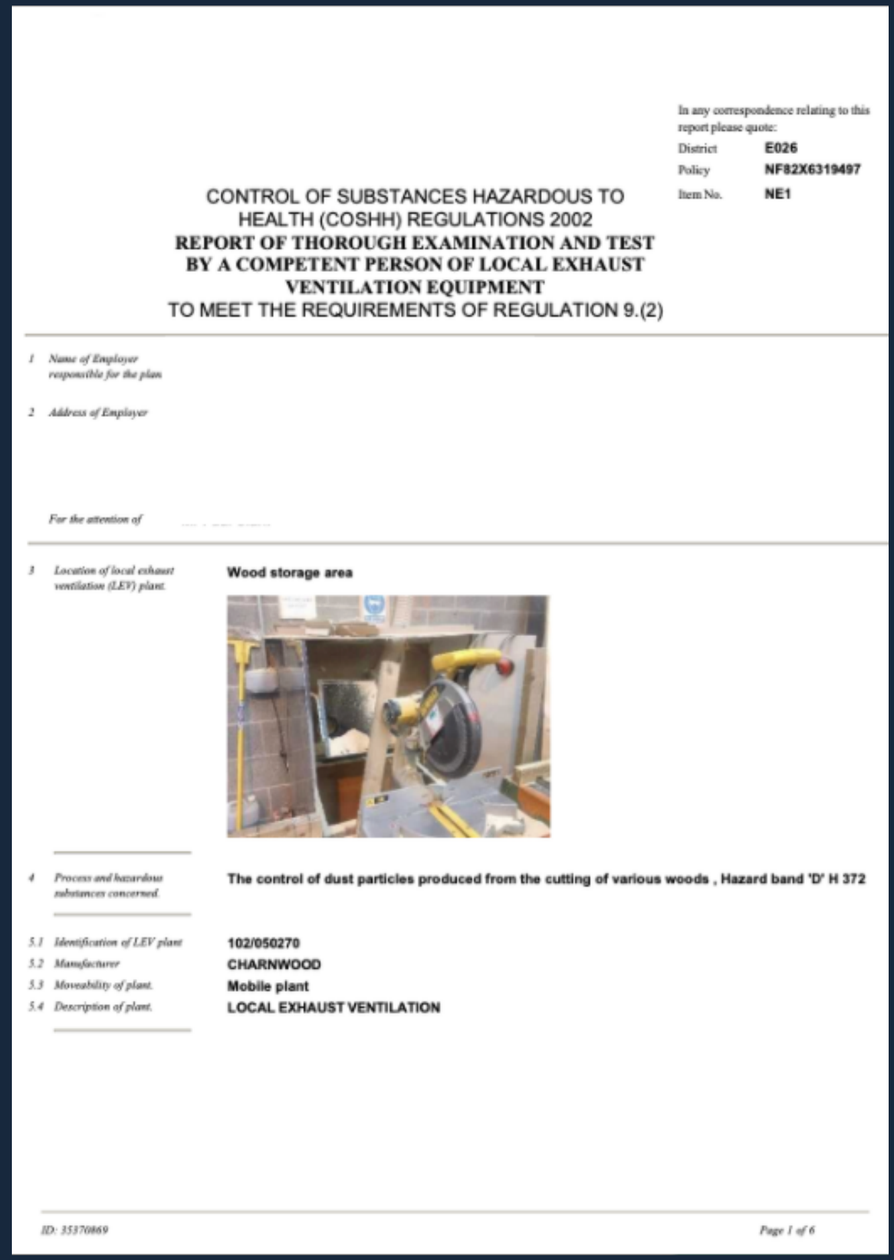
Capture zones

- **Are they identified:**
  - Signage
  - Marked on workstation like danger zones
- Can be checked with a Dragar Tube
- General HSE rule of thumb = 2 diameters of hood face
- HSE video resources to check welding capture zones can be found below:



Thorough examinations

- Statutory requirement.
- Equivalent of an MOT for LEV.
- Often undertaken by your insurers.
- Generally undertaken every 14 months.
- **6 months for:**
  - Processes where metal ground/abraded/polished > 12 hrs/week.
  - Dust/fume non-ferrous metal casting.
- Often filed away and not read.



In any correspondence relating to this report please quote:
District E026
Policy NF82X6319497
Item No. NE1

CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH (COSHH) REGULATIONS 2002
REPORT OF THOROUGH EXAMINATION AND TEST BY A COMPETENT PERSON OF LOCAL EXHAUST VENTILATION EQUIPMENT
TO MEET THE REQUIREMENTS OF REGULATION 9.(2)

1 *Name of Employer responsible for the plan*

2 *Address of Employer*

For the attention of

3 *Location of local exhaust ventilation (LEV) plant.* **Wood storage area**

4 *Process and hazardous substances concerned.* **The control of dust particles produced from the cutting of various woods , Hazard band 'D' H 372**

5.1 *Identification of LEV plant* **102/050270**
5.2 *Manufacturer* **CHARNWOOD**
5.3 *Moveability of plant.* **Mobile plant**
5.4 *Description of plant.* **LOCAL EXHAUST VENTILATION**

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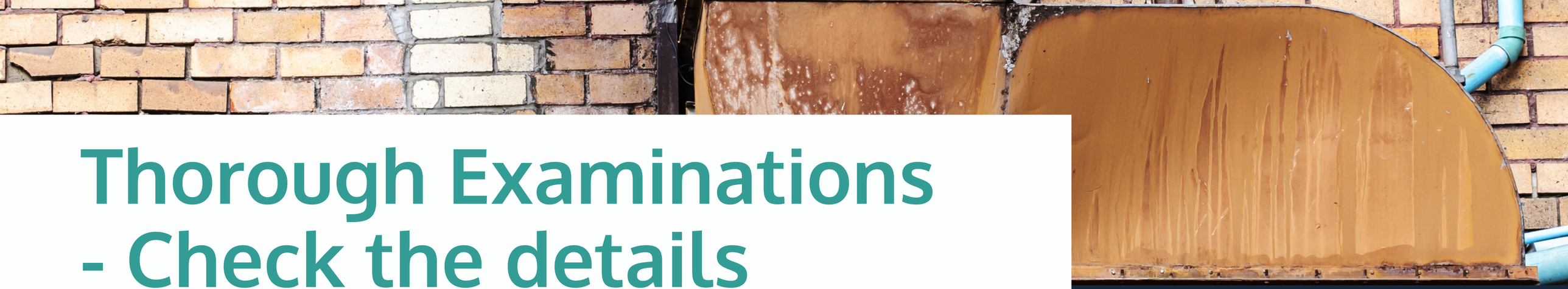

Thorough Examinations - Check the details

Main points to check - possible LA/HSE legal notices:

- 6.2 Performance of the system satisfactory/unsatisfactory.
- 6.3 Defects requiring immediate attention.
- 6.4 Defects requiring attention ASARP.
- 6.5/6.6 Availability of documentation.
- 7 Commissioning/Intended performance.
- 11 Observations.

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Thorough Examinations - Check the details

6.1	*Condition of LEV plant at time of test: normal production or sprecial conditions.*	**Normal production**
6.2	*Is the performance of the system Satisfactory or Unsatisfactory?*	**Satisfactory**
6.3	*Defects requiring immediate attention to avoid danger to users/employees*	**None**
6.4	*Defects requiring attention 'as soon as reasonably practicable' to avoid danger to users/employees*	**An additional extraction duct should be fitted into the box section of the crosscut saw.**
6.5	*Were the following documents available:*	
	a) *The Intended Operating Performance (IOP)/commissioning report*	**No**
	b) *System log book*	**No**
	c) *Material Safety Data Sheet(s)*	**Yes**
	d) *User Manual*	**Yes**
	e) *Previous Inspection reports*	**No**
6.6	*Have any changes been made since the last inspection to:*	
	a) *The extraction system*	**Yes**
	b) *The work processes*	**No**
	c) *The substances (or their form) being used*	**No**
6.7	*Does the process involve any of the following:*	
	a) *Blasting carried out in, or incidental to, the cleaning of metal castings in connection with their manufacture*	**No**
	b) *Jute cloth manufacture*	**No**
	c) *Processes, other than wet processes, in which metals (other than gold, platinum or iridium) are ground, abraded or polished using mechanical power, in any room for more than 12 hours per week*	**No**
	d) *Processes giving off dust or fume in which non-ferrous metal castings are produced*	**No**

- 6.4 PN
- 6.5 & 6.6 documents could be on Safety Cloud:
  - Commissioning report
  - Log book (Work Equipment Checks)
  - MSDS
  - User manual
  - Previous inspection reports
  - Monthly checks
  - COSHH assessments

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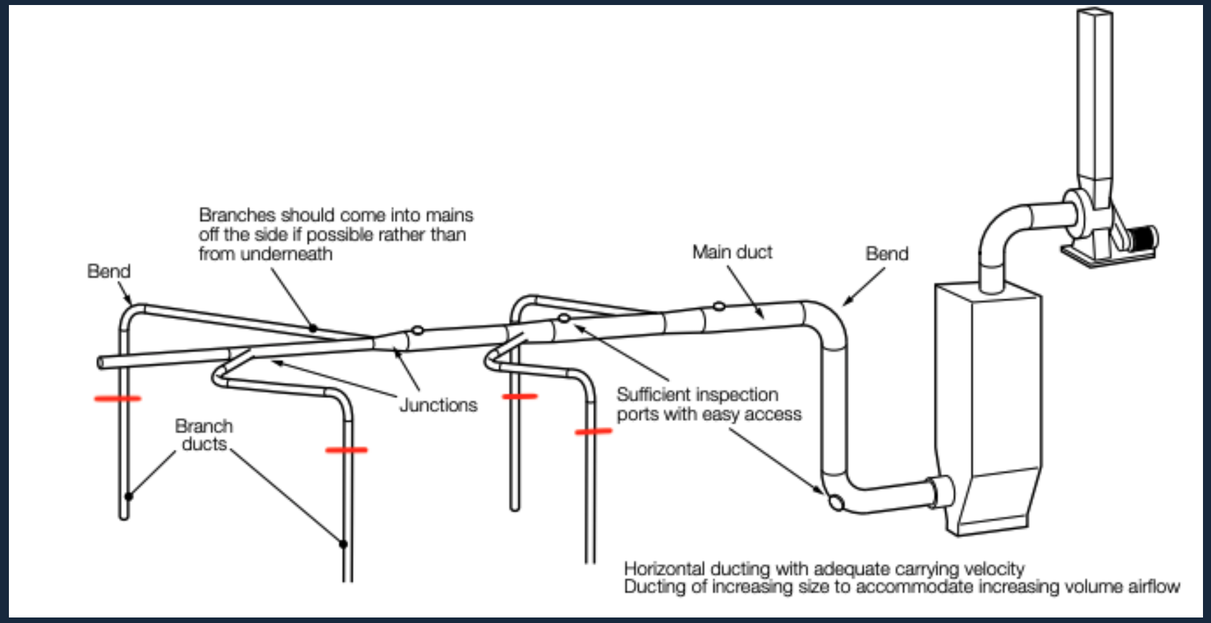
Missing commissioning reports

- Check section 7 of Thorough Examination - possible legal notices?
- Many thorough examination reports leave a similar statement.

7	*Is the LEV plant continuing to achieve its Commissioning/Intended Operating Performance for controlling the hazardous substance(s) for the purposes of Regulation (7)?*	**This could not be ascertained as the operating performance for the controlling the hazardous substance(s) for the purpose of regulation 7 was not provided at the time of the inspection. Whilst satisfactory measurements of the engineering parameters allied to visual techniques, indicated that the hazardous substance was being controlled. It will be necessary to supplement this report will results of air sampling. Provided that the results of air sampling undertaken in this area indicate that the relevant workplace exposure levels are not exceeded then it is suggested that the data within this report be accepted as the intended operating performance for the system.**

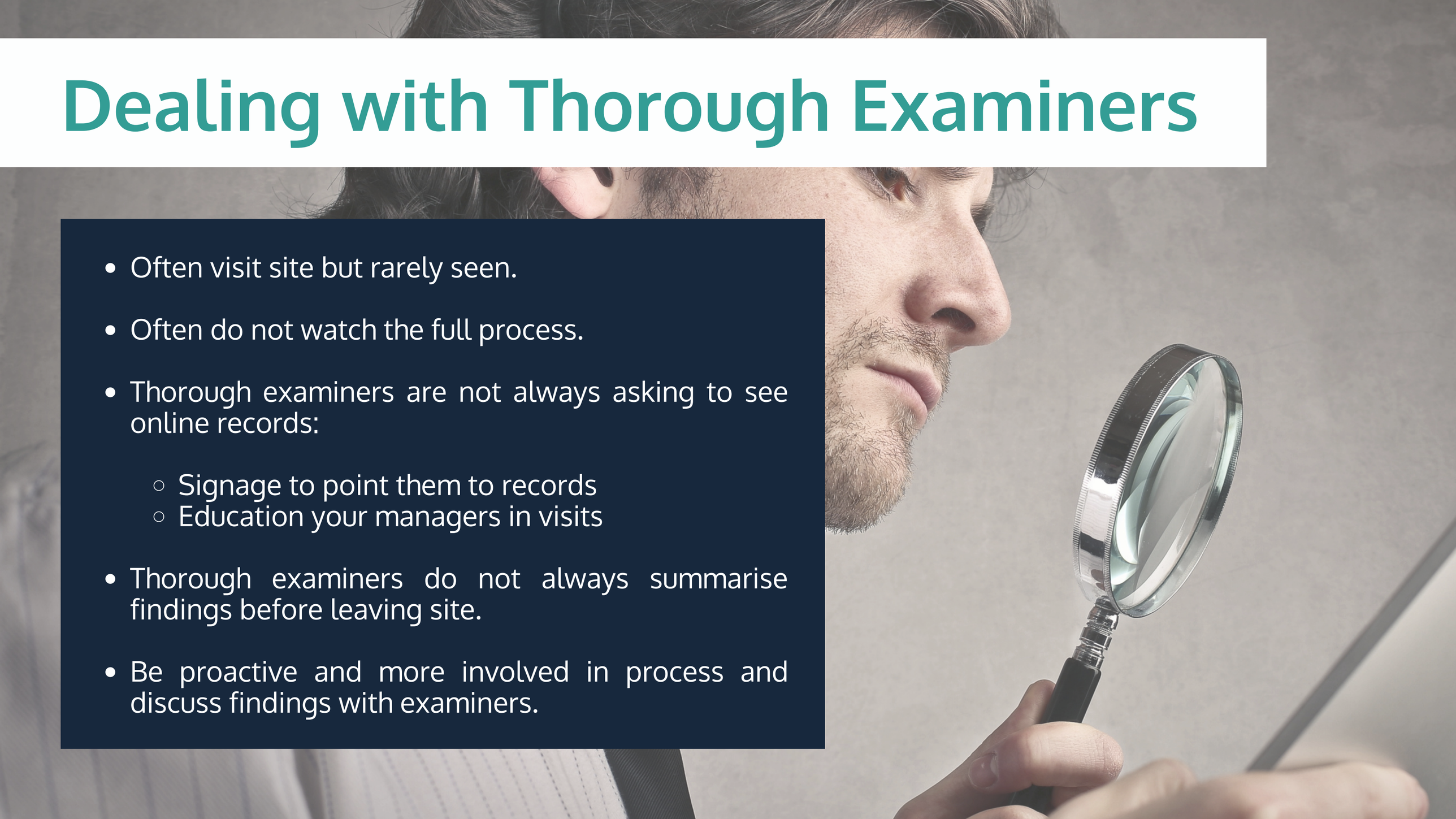
Dampers

- Dampers should they be open or closed
- Train your staff
- Where are your dampers



Dealing with Thorough Examiners

- Often visit site but rarely seen.
- Often do not watch the full process.
- Thorough examiners are not always asking to see online records:
  - Signage to point them to records
  - Education your managers in visits
- Thorough examiners do not always summarise findings before leaving site.
- Be proactive and more involved in process and discuss findings with examiners.

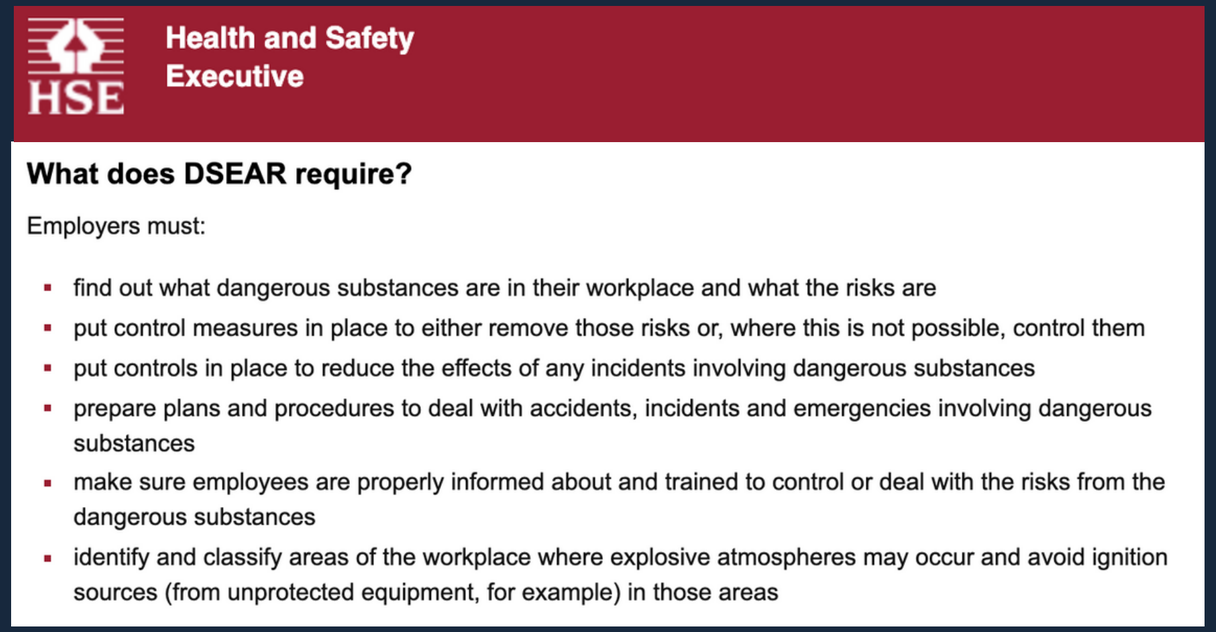


LEV issues

- Use of masks when changing LEV bags
- Dust spillages around machinery
- Overflowing LEV containers (bags/skips/trailers)
- Shutting off unused dampers
- Damaged ducting
- Split hoses
- Damaged/missing flow indicators
- Explosive atmospheres / DSEAR assessments
- LEV failures

The Dangerous Substances and Explosive Atmospheres Regulations (2002) - “DSEAR”

- Duties: to control the risks to safety from fire, explosion and substances corrosive to metals.
- Identify Dangerous Substances. Assess Risks. Implement control measures.
- Complexity of assessment may vary with type and scale of activities



HSE Health and Safety Executive

What does DSEAR require?

Employers must:

- find out what dangerous substances are in their workplace and what the risks are
- put control measures in place to either remove those risks or, where this is not possible, control them
- put controls in place to reduce the effects of any incidents involving dangerous substances
- prepare plans and procedures to deal with accidents, incidents and emergencies involving dangerous substances
- make sure employees are properly informed about and trained to control or deal with the risks from the dangerous substances
- identify and classify areas of the workplace where explosive atmospheres may occur and avoid ignition sources (from unprotected equipment, for example) in those areas

DSEAR Risk Assessment

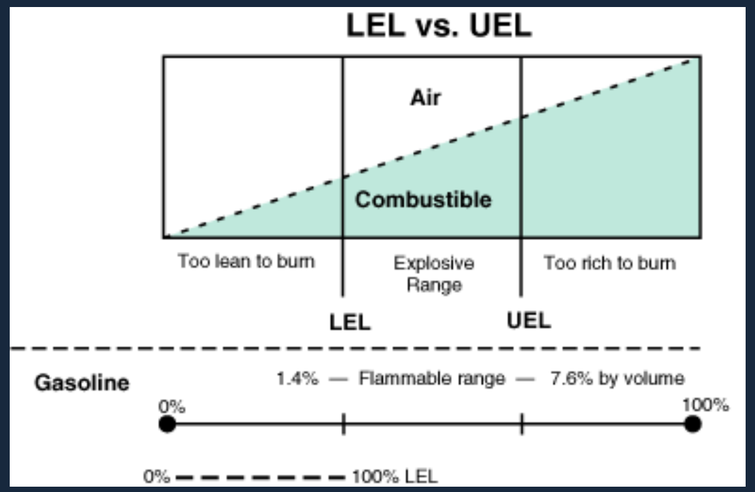
- What activities typically require assessment
- Identification of Dangerous Substances
- General Fire Precautions vs DSEAR
- In-house / external DSEAR assessment
- DSEAR Regulation 5 / ACOP L138 / BS Standards
- Potential for Laboratory testing
- Hazardous Area Classification (BS 60079 etc)
- Further Technical Control Measures

Health and Safety Executive

- storage of petrol as a fuel for cars, boats or horticultural machinery
- use of flammable gases, such as acetylene, for welding
- handling and storage of waste dusts in a range of manufacturing industries
- handling and storage of flammable wastes such as fuel oils
- welding or other 'hot work' on tanks and drums that have contained flammable material
- work that could release naturally occurring flammable substances such as methane in coalmines or at landfill sites
- use of flammable solvents in laboratories
- storage and display of flammable goods, such as paints, in shops
- filling, storing and handling aerosols with flammable propellants such as LPG
- transporting flammable substances in containers around a workplace
- deliveries from road tankers, such as petrol and bulk powders
- chemical manufacturing, processing and warehousing
- the petrochemical industry, both onshore and offshore
- handling, storage and use of gases under pressure
- handling, storage and use of substances corrosive to metal.

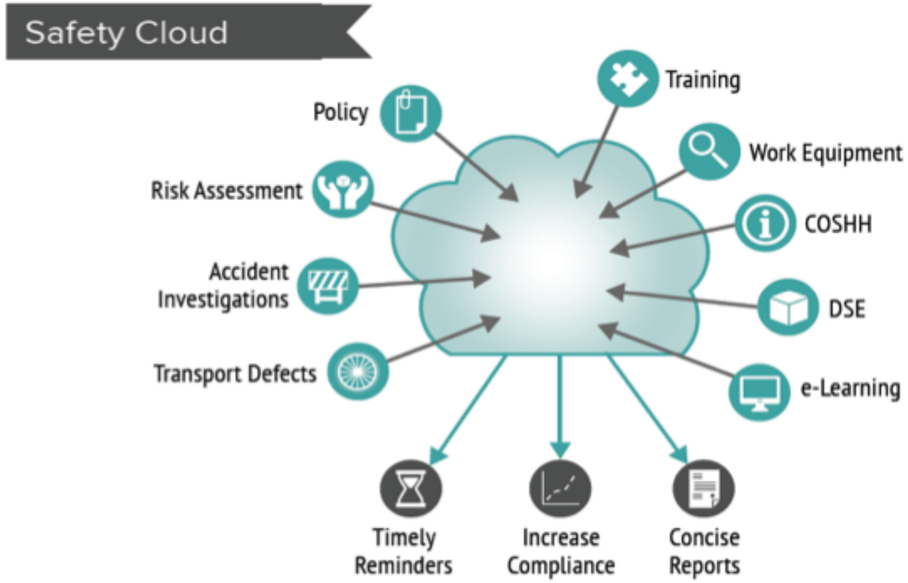
LEV and Explosive Atmospheres

- Common engineering control for Explosive Atmospheres
- System must be suitable for use with the identified dangerous substances
- Explosion prevention and mitigation
- Consider System Positioning and Routing
- LEV interaction with emergency systems
- Signage, awareness and training



Points to Check in Audits

- Can you eliminate the process - how often do you use your machinery?
- PPE is a last resort - if you have no LEV, why?
- If hardwoods are processed have you checked your WEL compliance.
- Check thorough examinations - are they compliant.
- Encourage staff to engage with examiners and ask them to talk through findings - so they make sense.
- Define capture zones - particularly welding.
- Check capture zones are effective.




Questions?

We've dedicated health and safety consultants who love making a difference for our clients.
Talk to us today.

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