Manufacturing Sector Work Plan 2021-22:

Impact Evaluation Inspections: occupational lung disease (OLD) caused by wood dust in manufacturing industries

Open Government status: Open

Audience: FOD Inspectors, Visiting Officers, Occupational Hygienists, Occupational Health and Process Safety Inspectors

Contents

Inspection programme

1.1. What are we inspecting and why?

We are visiting wood working premises that have been targeted as part of previous campaigns, where wood dust is produced, or process generated. We should expect the risks will be adequately controlled and properly managed. We will deal with the underlying causes of not sustaining good risk control (i.e. failures in health and safety management arrangements) to reduce the incidence of serious health effects from exposure to wood dust. These include the provision of adequate information, instruction and training; supervision and adequate monitoring arrangements to ensure preventive and control measures are effective; and access to adequate, competent H&S advice.

The findings from these visits will be used to inform and influence planning for a significant intervention in 2022/3 aimed at improving the management of risk controls and reducing the risk from wood dust across the industry to make a real difference to workers' lives.

1.2. What is the extent of the problem?

Occupational Lung Disease (OLD) causes the death of 12,000 people in GB annually. There are 18,000 new cases of OLD per year that are caused or exacerbated by work and 400,000 working days are lost per year.

OLD causes premature death, significantly impacts the quality of people's lives and has a huge cost on the GB economy. Workers who develop asthma and/or lung disease through exposure to a substance at work often need to change career or fall-out of work all together.

Specific examples of OLD in the wood working industry include:

- Sino-nasal cancer from exposure to hard wood dust
- Asthma from exposure to soft and hard wood dust

1.3. What must be covered at the inspections?

- The specific health issue(s) **through an assessment of the management arrangements for preventing and/or controlling** the risk of exposure
- Any matters of evident concern (MEC)
- Any matters of potential major concern (MPMC) see Appendix 5.2.

1.4. What sectors and topics are we inspecting and when?

Sector	Health topic(s)	When
Woodworking	Wood dust	Q3

Further information on targeting of premises including SIC codes is contained in the *Targeting and Intelligence Guide*.

1.5. Application of the Enforcement Management Model (EMM)

If exposure to a carcinogen or asthmagen is not prevented or adequately controlled, then there is a risk of a **serious health effect** (see health EMM OG for more details) and the controls expected in the COSHH essentials sheets are considered to be established benchmarks.

Enforcement should also be applied to underlying management issues where there is significant poor control or failure to sustain compliance.

2. *Support and Guidance Available*

Specialist Support type	**Relevant specialist**
Control strategies and enforcement	Occupational Hygiene Inspectors
Health surveillance and diagnosis	Occupational Health Inspectors
Industry standards and enforcement	Manufacturing Sector:
	David Butter 0203 028 2765 **Scott Wynne 0203 028 2799**

Other Important Guidance for Inspections	**Guidance location**
Topic-specific self-learning presentations e.g. Health risks in woodworking – their control and IEE's	FISH intranet site
COSHH Essentials guidance for woodworking Wood dust: Controlling the risks (WIS 23) Wood dust: Selecting suitable respiratory protective equipment (WIS 14)	HSE website HSE website HSE website
Enforcement Management Model (EMM): Application to Health Risks	HSE website
Health and Safety Management – OG: Inspection Procedure 9 June 2018 The Management of Health and Safety at Work Regulations 1999 Control of Substances Hazardous to Health Regulations 2002 (ACOP – L5) Provision and Use of Work Equipment Regulations 1998 (ACOP – L22) Dangerous Substances and Explosive Atmospheres Regulations 2002 (ACOP – L138) HSG65 – Managing for Health and Safety	HSE website Legislation.gov HSE website HSE website HSE website HSE website

3. *Recording the inspections*

For these inspections the answers to the following eight questions **must** be recorded in the text area of the appropriate 'risk area' under DO IT. Whilst avoiding one-word

answers, the answers should be kept short and succinct but include sufficient information to give a clear understanding of the issues and action taken (including when no enforcement action is taken).

Capturing this information is essential to enable us to effectively analyse the inspection outcomes and determine the impact.

Questions

1. What are the processes carried out giving rise to wood dust?
2. What control measures are currently in place?
3. Where control measures exist, what are the specific control failings (i.e. in terms of the control measures being adequate, used, maintained)?
4. Are there any management failings (e.g. policy, planning, information, training, supervision, monitoring, competence, leadership)?
5. Was there any SG involvement?
6. Was there a Material Breach(es) or Enforcement action taken? *(if so, please provide details)*
7. Has there been sustained compliance in the control wood dust? *(if so, please provide brief details of good practice)*
8. If not, what are the reasons for failing to continue maintaining the control of wood dust?

The following structure should be used (including the question number):

Q1: [answer]
Q2: [answer]
Q3: [answer]
Q4: [answer]
Q5: [answer]
Q6: [answer]
Q7: [answer]
Q8: [answer]

Send examples of good or poor control (with photographs and/or video) to Sector.

4. Health and Safety

Industry-specific health and safety information is detailed in the sector specific appendices below. General health and safety information for visiting staff is on the intranet.

Appendix 5.1 Industry specific information, Initial Enforcement Expectation (IEE) tables, examples of Matters of Potential Major Concern (MPMC) and safety priorities for woodworking

Introduction

HSE has found the woodworking industry difficult to engage with at a national level, as the industry's trade associations cover only a relatively small percentage of workplaces.

Approximately 238,000 carpenters and joiners are employed in the woodworking sector. Approximately 75% of these are estimated to be micro-businesses of less than 10 employees.

Wood dust can cause:

- asthma – both hard and soft woods are asthmagens and carpenters and joiners are 4 times more likely to develop asthma than other workers
- nasal cancer – hardwoods are classed as a carcinogen

Both hardwood and softwood dusts have a Workplace Exposure Limit (WEL) which must not be exceeded:

- The WEL for hardwood dust is 3mg/m3 (based on an 8-hour time-weighted average).
- The WEL for softwood dust is 5mg/m3 (based on an 8-hour time-weighted average).
- For mixtures of hardwood and softwood dusts the WEL for hardwood dust of 3mg/m3 applies to all wood dusts present in that mixture.

Adequate control of wood dust is achieved when the eight principles of good control practice are met (as set out in Schedule 2A of COSHH) by applying all the expected controls established in COSHH essential sheets, or by using other equally effective measures to ensure exposure is being controlled as low as reasonably practicable.

Although the health effects from exposure to hard wood, soft wood and composite woods are different (and the WELs are different), the measures required to adequately control exposure will not differ from process to process regardless of which type of wood is being machined.

Health and safety

Where appropriate, inspectors should follow the company's procedures when visiting and ensure appropriate PPE for the premises is worn e.g. safety footwear, eye protection, hearing protection.

Inspection

Exposures to wood dust can occur not only when machining wood, particularly sanding and sawing, but also when cleaning. It has been common practice in the industry to dry sweep or use an airline to blow down machinery, surfaces and clothing which increases the amount of airborne dust and potentially can increase the exposure of workers.

Wood dust can be readily controlled by the use of LEV however, experience has shown there are often issues with the LEV such as being poorly maintained, badly designed or not being operated correctly.

Follow protocol under '1.3.What must be covered at the inspections?' supplemented by consideration of:

- Management and workers knowledge of the risks from wood dust
- Training so workers know the risks of wood dust and understand how to protect themselves
- High standards of housekeeping e.g. removing dust from machinery and not having piles of wood dust around the workplace
- Cleaning methods that reduce the risk of dust exposure e.g. vacuuming instead of dry sweeping or blowing down

Priorities

- Machining activities
- Sanding: belt sanders can produce high levels of dust, as can sanding with hand-held power tools
- Cleaning down activities: dry sweeping and blowing down with airlines should not occur
- Poor/inadequate LEV design and capture
- No LEV, including on-tool extraction, provided for dusty activities
- Poorly maintained LEV

Safety Priorities
The Manufacturing Sector Plan details HSEs' safety priorities for the Sector. These safety issues are the most common causes of safety-related deaths and serious injuries in the Sector. They are: • The movement and storage of heavy loads • Maintenance activities: including issues of access (fall from height) and machinery intervention Although these safety priorities are not a specific focus of this inspection programme, visiting staff should be aware these issues may well manifest as MECs.
Guidance
Presentation giving refresher briefing on woodworking plus IEE table below. • Wood dust HSE website • Woodworking – COSHH e-tool • Wood dust - Controlling the risk (WIS 23) • Selection of respiratory protective equipment for use with wood dust (WIS 14) • Local exhaust ventilation (LEV) • Clearing the air - A simple guide to buying and using local exhaust ventilation (INDG 408) • COSHH and woodworkers - key messages – includes links to the 'COSHH Essentials web tool' sheets numbers 1-9
Contacts
Manufacturing Sector: Scott Wynne (0203 028 2799)

Wood dust health IEEs			
Task	**Situation**	**IEE**	**Comment**
Use of bandsaw, circular saw, crosscut saw, chop saw, wall saw, surface planer or sanding machine	No LEV or LEV inadequately designed/maintained/operated AND/OR No RPE or RPE unsuitable/poorly stored/poorly used	IN	• Both LEV and suitable RPE (minimum FFP3) are required to achieve adequate control on these machines. • Inadequate LEV evidenced by visible settled fine dust on workplace surfaces and visible airborne dust emanating from the machine: ○ Design issues include hood and/or duct being too small to adequately capture and transport the wood dust generated. ○ Inadequate maintenance may include signs of damage to flexible ducting and hoods. This may extend to signs of ineffective repairs. Baffles seized up, preventing the system being properly balanced. ○ In terms of incorrect operation, LEV hood and baffles are not correctly adjusted to effectively capture the wood dust. Baffles that are hard to open / close suggest failure to routinely operate the LEV properly. **Note** where any of these machines are fully enclosed with adequate LEV, such that any dust produced is adequately captured then RPE may not be required.
Use of hand-sander	No RPE used AND/OR **no** on-tool extraction	IN*	Both on-tool extraction and suitable RPE (minimum FFP3) will normally be required to achieve adequate control. ***Note** Inspectors should assess the specific scenario (e.g. duration of task, spread of dust, position of other workers etc.) as there *may* be occasional short duration tasks where, provided the operator is wearing suitable RPE, that no on-tool extraction is justified. For example, sanding for 1-2 minutes with the operator wearing suitable RPE, but only where the spread of dust does not spread around the workplace, potentially affecting other workers who do not have suitable RPE.
Use of overhead router, CNC router or vertical spindle moulder	No LEV Inadequately designed LEV Inadequately maintained LEV LEV not being operated properly	IN	Evidenced by visible settled fine dust on workplace surfaces and visible airborne dust emanating from the machine: • LEV hood may form part of guarding to prevent access to dangerous parts. • Design issues include hood and/or duct being too small to adequately capture and transport the wood dust generated. • May include signs of damage to flexible ducting and hoods. This may extend to signs of ineffective repairs. Baffles seized up, preventing the system being properly balanced. • LEV hood and baffles are not correctly adjusted to effectively capture the wood dust. Baffles that are hard to open / close suggest failure to routinely operate the LEV properly.

Use of wood working machine where LEV is required (see above)	Lack of current thorough examination and test (TExT) for the LEV	IN	Lack of thorough examination and test may be indicative of a poor standard of LEV maintenance. A TExT will only evidence that the LEV was working efficiently and in good repair at the time it was carried out. TExT will NOT give assurance that the LEV is suitable designed and achieves an adequate level of control.
Cleaning of surfaces	Sweeping or using compressed air to clear wood dust	IN	An M-type vacuum cleaner should be used to clear wood dust.
Changing dust extraction bags or maintaining woodworking machines	Suitable RPE not used	IN	RPE (minimum FFP3) should be worn
RPE	RPE not maintained or no face fit test for tight fitting masks	IN	Evidence includes filters with signs of clogging; facial hair, glasses, other PPE interfering with RPE tight fit.
Health surveillance	Absent (where guidance would indicate it is necessary)	IN	Discuss with SG Occupational Health

Appendix 5.2 Examples of industry specific Matters of Potential Major Concern (MPMC)

Inspectors must consider action in relation to Matters of Evident Concern (MEC) or Matters of Potential Major Concern (MPMC) at all visits (see OC18/12).

Recent events, including multiple fatalities from a wood dust explosion and a number of fatalities involving explosions and fires involving solvents, have reinforced the importance of taking action on the management systems to prevent catastrophic events. OC18/12 explains the actions required and gives examples of the issues to consider that could lead to catastrophic events.

Included in the industry-specific appendix (5.1 above) are specific examples of situations that could lead to potentially catastrophic events. There are other events common across the industries that are not included here. See above and OC18/12 for more details.

Inspectors should discuss with their local Process Safety Champion if further assistance is required.

Appendix 5.3 : general references

General COSHH references:

COSHH gateway

COSHH ACOP L5 (sixth edition)

COSHH essentials

Controlling airborne contaminants at work: A guide to local exhaust ventilation (LEV) (HSG 258)

Respiratory protective equipment at work: A practical guide (HSG 53)

Respiratory Protective Equipment (including enforcement guidance)

Woodworking health topics – Inhaling wood dust

General asthmagen references:

Asthma pages of HSE web site

Asthmagen? Critical assessments of the evidence for agents implicated in occupation asthma – 'Asthmagen compendium

Health Surveillance for Occupational Asthma (G402)

General carcinogen references:

Occupational cancer pages of HSE website