



WORKING FOR A HEALTHY FUTURE

# Scottish House Builders Health and Safety Forum Meeting February 2013

## COSHH Assessments and Wood Dust

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# Aim

- Raise awareness of requirements of COSHH Assessments
- Raise awareness of hazards of wood dust exposure
- Highlight potential sources
- Understanding consequences of exposure
- Understanding of practical control measures

# Objective

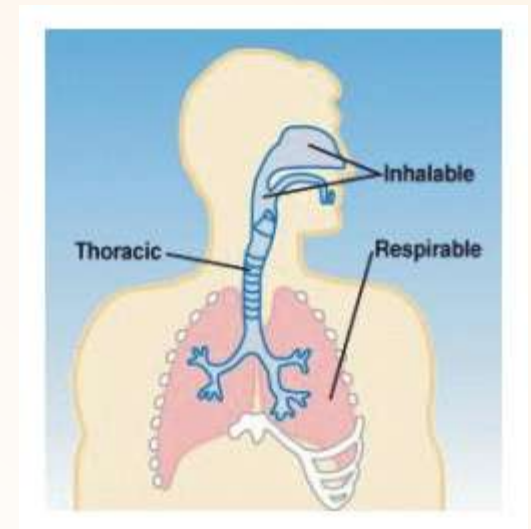
- Understanding of what constitutes a 'suitable and sufficient' COSHH Assessment
- Information to share with colleagues and employees

# COSHH–Using Wood Dust as an Example

- General information on wood dust (types, size, airborne concentrations, routes of entry into body)
- Identification of sources within the house building industry and refurbishment work
- Potential exposures in your work area
- Control measures in use and required
- Assessment of risks
- Health surveillance
- Information, instruction and training
- Review

# Wood Dust

- Wood
  - Soft woods - conifers
  - Hard woods - deciduous trees
  - Composites, e.g. MDF
  - Plywood
  - Laminates
- Dust
  - Inhalable/ Respirable
  - Air suspension
  - Deposits in lungs



# Health Hazards

- Exposure to wood dust may cause both internal and external health problems; i.e. consider all routes of entry into the body
  - Dermatitis
  - Allergic respiratory effects
  - Non allergic effects
  - Asthma
  - Cancer – nasal and sinus, lung, others
- Some woods are potentially far more hazardous than others, e.g., Red Cedar

# Dust Generation

- Dust – by product of:
  - Cutting
  - Sawing
  - Grinding
  - Drilling
  - Sanding
  - Demolition
- Large particles visible
- Small particles not visible



# Visible Control



*Effective*



*Partly effective*



*Ineffective*



# Dust Raising Activities in House Building

<b>Activity</b>	<b>Typical Dust Concentration (mg.m<sup>3</sup>)</b>
Sawing • Mechanical	1.0-3.0
Sawing • Machine	7.0
Router	6.0
Cutting	2.0
Sanding by hand – very fine dust	>10
Sweeping dry sawdust	8-50
Demolition	>25

# Workplace Exposure Limit (WEL) EH40

Soft Wood	5mg.m <sup>-3</sup>	(averaged over 8hr period
Hard Wood	5mg.m <sup>-3</sup>	i.e. 8hr TWA)

Soft Wood	Sen – capable of causing asthma
Hard wood	Sen and <u>carcinogenic</u>

NB As hardwood is a known carcinogen there is a legal requirement to reduce levels to as low as reasonably practicable (ALARP)

ALARP also applies to sensitizing substances

# Dust Raising Activity

- HSE Clean your act up.mpg

# Exposure

- Long term average exposure of carpenters to wood dust at construction sites  $3.3 \text{ mgm}^{-3}$
- Concentrations tend to be higher than in wood manufacturing industries
- Potential for exposures above the WEL

Therefore need reduction through combination of technical and logistical control measures

# Assessment

- What is the hazard – wood dust - soft wood
- What are the health effects – dermatitis, asthma
- Who may be exposed – employees (define groups), visitors to site, other contractors
- What control measures are in place already?
- How effective are these controls?
- Will exposure be reduced to below the WEL and ALARP?

IF NOT .....

# Control Measures – What Improvements are Required?

## Hierarchy of Control

- Elimination – an option?
- Substitution – non wood materials
- Different form – one which will produce less dust
- Engineering controls  
Local Exhaust Ventilation
- Housekeeping/General

# Control Measures – RPE

## Respiratory Protective Equipment (RPE)

- Type
  - Use - Identify through risk assessment when it must be used
  - Who - trained operators
  - Does it fit them - Face Fit Tested (Fit2Fit Accredited Assessor)
  - When to change
  - Why it is important to wear
- 
- Woodworking Sheet No 14



# Simple Control Measures

- Equipment – using high energy tools, such as cut-off saws, grinders, wall chasers and grit blasters produce a lot of dust in a very short time
- Work method – dry sweeping can make a lot of dust when compared to vacuuming or wet brushing
- Work area – the more enclosed a space, the more the dust will build up
- Time – the longer you work the more dust there will be.
- Number of persons – the more in the area the more will be exposed



# Reduction of Exposure

- Using power tools fitted with LEV to cut, grind, drill or prepare a surface
- Use of alternative materials, e.g. boards which can be cut with a knife
- Preparing material in a workshop
- Alternative equipment, e.g. jigsaw instead of hand held circular saw; use of flat sander instead of belt sander
- Local exhaust ventilation – e.g. when fitted to hand held tools can reduce exposure by a factor of 3 – 4
- Good housekeeping and general ventilation – e.g. reduce dry sweeping, clean as you go policy

# Health Surveillance

- Consider the exposure to the hazardous substances
- What harm may occur
- Can early signs be detected
- Will an examination be of benefit to those exposed
  
- Wood
  - Skin examinations
  - Asthma questionnaire

# Principles of Good Control

- Design and operate processes and activities to minimise emission, release and spread of substances hazardous to health
- Take into account all relevant routes of exposure – inhalation, skin absorption and ingestion – when developing control measures
- Control exposure by measures that are proportionate to the health risk
- Choose the most effective and reliable control options which minimise the escape and spread of substances hazardous to health
- Where adequate control of exposure cannot be achieved by other means, provide, in combination with other control measures, suitable personal protective equipment

# Principles of Good Control cont.

- Check and review regularly all elements of control measures for their continuing effectiveness
- Inform and train all employees on the hazards and risks from the substances they work with and the use of control measures developed to minimise the risks
- Implement health surveillance programme where appropriate
- Ensure that the introduction of control measures does not increase the overall risk to health and safety

# Assess the Risks to Health from Hazardous Substances used in or created by Workplace Activities

- **Decide what precautions are needed**, *may include:* • *Using less hazardous substances* • *Changing the process* • *Monitoring exposure* • *Providing health surveillance*
- **Prevent or adequately control exposure, e.g.** • *Adopting good practice* • *Minimising the quantities used* • *Minimising the number of people exposed* • *Using engineering controls such as, local exhaust ventilation* • *Maintaining and testing equipment* • *Using Personal Protective Equipment (PPE)*
- **Ensure that control measures are used and maintained** • *Provide training and information* • *Ensure supervision is adequate* • *Maintain and test equipment e.g. LEV* • *Examine and if necessary test RPE* • *Check that employees are following the precautions identified by risk assessment*

- **Monitor exposure if necessary** • If necessary, take air samples • Ensure that Work Exposure Limit (WEL) is not exceeded • Keep monitoring records
- **Carry out health surveillance if necessary** • Seek advice/support from Occupational Health Services • Provide local monitoring if appropriate e.g. monitor skin for evidence of sensitisation or irritation • Ensure records are kept
- **Prepare plans and procedures to deal with accidents, incidents and emergencies**, including: • Minor and major spillages • Fire • First aid provision • Warning and communication systems • Emergency drills

# Review Assessments

- **Review regularly and in the light of:**
  - Experience
  - Changes in process or staff
  - New legislation or guidance
  - Following accidents, incidents or near misses
- **Responsibilities:** Establish the responsibilities for each aspect of the assessment and controls

# Example Record

Company Name:

Date of Risk Assessment: 06/02/13

What are the hazards?	Who might be harmed and how?	What are you already doing?	What further action is necessary?	Action by whom?	Action by when?	Done
Exposure to wood dust	Staff risk lung diseases, such as asthma, from inhaling wood dust. Hardwood dust can cause cancer, particularly of the nose.	<p>Local exhaust ventilation (LEV) provided at machines and staff are trained in using it properly.</p> <p>LEV maintained to keep it in good condition and working effectively.</p> <p>LEV inspected every 14 months by a competent person.</p> <p>Wood dust cleared up using a suitable vacuum cleaner, fitted with an appropriate filter.</p> <p>Suitable respiratory protective equipment (RPE) as well as LEV for very dusty jobs, and staff trained in how to use it.</p> <p>Staff do health surveillance questionnaire before starting, then annually. Any affected staff referred to a medical professional.</p>	Remind staff of the risks of wood dust, and why these controls are necessary.	Manager	1/03/13	1/03/13



# Main Messages

- Exposure to wood dust can cause long term ill-health
- Dust concentrations can be generated by simple activities, some can create concentrations in excess of Workplace Exposure Limit
- Simple measures can reduce exposures, including use of extraction, use of respirators
- Activities need to be assessed
  - Exposure controlled
  - Employees told what to do / use to reduce exposure
- Exposure to hardwoods especially must be prevent due to its carcinogenic properties

# Aim

- Raise awareness of hazards of wood dust exposure
- Highlight potential sources
- Understanding of practical control measures
- Understanding consequences of exposure

# Reducing Exposure !



# Questions to Ask Yourself

- Have you assessed all activities where wood dust could be generated?
- Have you adequately controlled exposures during these activities?
- Have you especially prevented exposure to hardwood dust?
- Are all control measures used regularly checked and inspected to ensure they are effective?
- Have all wearers of tight fitting respirators been face fit tested?
- Could you do any more to prevent and reduce exposure to wood dust?

# References

- COSHH Essentials HSE Webtool - [www.coshh-essentials.org.uk/](http://www.coshh-essentials.org.uk/)
- [www.hse.uk/woodworking/index.htm](http://www.hse.uk/woodworking/index.htm)
- [www.coshh-essentials.org.uk/assets/](http://www.coshh-essentials.org.uk/assets/)

# Questions to Ask Me

