

6.3 Hazards Associated with Wood-Based Panels

The hazards (the way in which an object or a situation may cause harm) associated with wood-based panels can be divided into two categories, i.e. handling wood-based panels and cutting wood-based panels.

6.3.1 Handling Wood-Based Panels

The general handling issues that arise in the woodworking industry can equally be applied to the handling of wood-based panels.

Because of their dimensions and weights, incorrectly handling wood-based panels can result in:-

- Strain and sprain injuries
- Injuries to the hand and back
- Lacerations to the hands
- Crush injuries

The most common manual handling problems often stem from poor workplace or job design.

Poor storage of products can lead to injury if they become unstable and fall. PanelGuide, Section 4 "Storage, Handling, Cutting and Fixing" should be consulted. Detailed information on the safe stacking of sawn timber and board materials is also given in HSE Woodworking Sheet No. 2 (Revised).

Assessing the risk – when assessing a normal handling operation the following should be considered:-

- Is manual handling necessary?
- Could the desired result be achieved another way?
- Can the operations be mechanised or automated?

The main risk factors associated with manual handling activities are:-

- The task – twisting, stooping, strenuous pushing and pulling etc
- The load – excessive weight, unusual size, awkward shape, instability, difficulty of grasping
- The work environment – constraints in posture, poor floor surfaces, hot, cold or humid conditions
- Individual capabilities – health problems, the effects of protective equipment and clothing

Assess the Risks

In deciding whether an activity presents a risk (the chance that an effect will occur)the following should be considered:-

- Is excessive force required?
- Are there any complaints of aches and pains from workers?

- Is there any evidence of improvised changes to equipment controls?
- Does the work require awkward postures such as stooping or stretching?
- Is there enough space to move around?
- Are there any reports of accidents or injuries associated with manual handling?
- Ask employees which tasks are the most arduous.

Handling Solutions⁵

Many manual handling solutions involve the use of some form of work equipment. Where you use work equipment to reduce the risks of manual handling you should ensure that it is safe and suitable for the purpose for which it is intended as required by the Provision and Use of Work Equipment Regulations 1998.

The large size and weight of wood-based panel products presents a real handling hazard, but there are a number of solutions to this problem:-

Handling a full sized sheet single-handed and without a handling aid is not recommended.

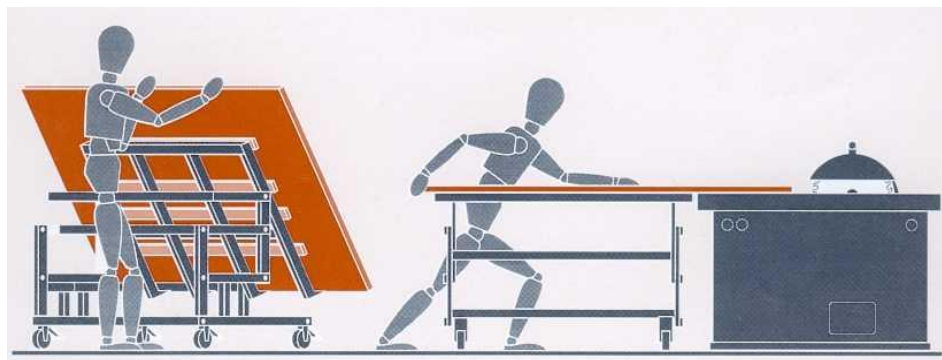
□ Lifting Hooks

These enable one person to move smaller panels without the need to bend and enable the panel to be properly gripped. All that is needed is an adjustable steel rod (60-80cm long) with a hook on one end and a handle on the other (see figure), A variety of other similar devices are also available for this task, such as handles incorporating roller grips at one end.



□ Panel Trolleys

These are available with locking casters, tilting bed, moveable fence and a rise and fall table (see figure). They enable a single machinist to load, manoeuvre and machine a large number of panels.



References

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□ **Vacuum Handling System**

A wide variety of equipment is available for stacking, handling and turning board products. These have many uses such as feeding machines like beam panel saws, wall saws and CNC routers.

6.3.2 Cutting Wood-Based Panels

When wood or wood-based products are cut, particles of wood dust are released. Exposure to wood dust may irritate the nose, respiratory system, eyes and skin.

Wood dust may act as a carrier for other chemicals which are contained in such things as paints, lacquers, wood preservatives and wood adhesives which may themselves cause health effects if inhaled.

Some wood species may cause dermatitis and allergic respiratory effects, e.g. asthma, because of naturally occurring chemicals in them. A rare type of nasal cancer has been linked to the prolonged exposure (20-30 years) to wood dust.

Wood dust is flammable and it can be (under certain industrial processing situations) an explosion hazard.

Regulations

The elimination or control of risks from wood dust is required by:-

- Health & Safety at Work Act
- Factories Act
- Control of Substances Hazardous to Health (COSHH) Regulations

The employer (this includes anyone responsible for wood-cutting operations in craft workshops, schools, theatres etc., as well as in factories) has an obligation under COSHH Regulations to assess any risk and prevent exposure to any hazardous substance. If prevention is not reasonably practicable, suitable control measures must be adopted.

Wood dust must be reduced as far as is reasonably practicable below its assigned maximum workplace exposure limit of 5mg/m³ (8 hour time-weighted average) by mechanical extraction; if this is not possible or practicable, respiratory protective equipment (RPE) should be used. RPE is in addition to control at source, not in place of it.

Any health risks arising from exposure to wood dust can and should be controlled effectively by compliance with the COSHH regulations.

- An employer has an obligation to provide the necessary control and protection equipment.
- Employees and others engaged in woodworking activities must take reasonable care for their own health and safety and that of others who may be affected by their actions.

When to Take Care

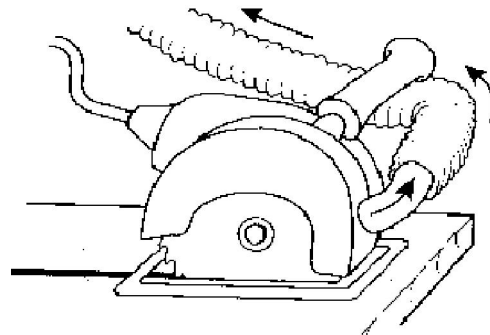
Activities likely to produce high levels of wood dust include:-

- Sawing by machine and hand
- Machinery operations, particularly sawing, routing, turning
- Sanding

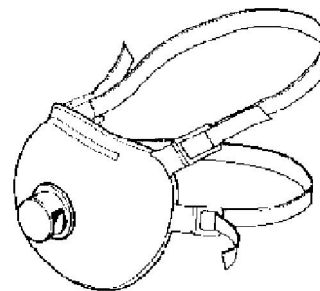
- Hand-assembling machined or sanded components
- Bagging dust from dust extraction systems
- Using compressed airline to blow dust off furniture and other articles before spraying.
- Work place cleaning, particularly if compressed airlines are used for blowing dust from surfaces etc.

How To Take Care

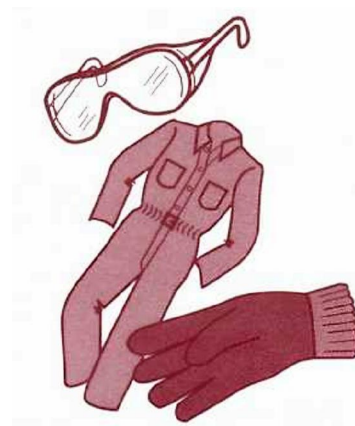
Whenever possible, fit dust extraction equipment even when using hand held machines



Where extraction is inadequate or impracticable, wear a suitable respirator



Wear the correct clothing and use other safety equipment as necessary.



Respiratory Protective Equipment (RPE)

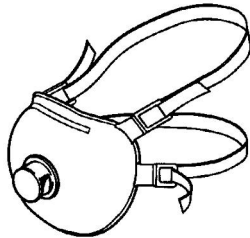
RPE must meet approval standards and it must:-

- be suitable for the purpose to which it is to be used
- provide effective protection to the wearer
- fit the wearer
- be replaced or maintained according to manufacturers' recommendations
- be supported by appropriate instructions in its use and maintenance

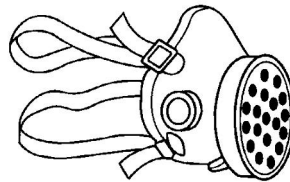
Types of RPE

Factors to consider when choosing appropriate RPE include:-

- face size and shape
- facial hair
- spectacles
- work related considerations: detailed information on selection and use is given in HSE Wood Working Information Sheet No. 14 "Selection of respiratory protective equipment suitable for use with wood dust".



Disposable respirator



Half mask respirator



Powered helmet or hood

Respirator Type	Activity/specification	
	Machining/cutting/sanding	Changing dust collection bags
Disposable respirator	EN 149 type FFP2	EN 149 type FFP3
Half mask	Filter to EN 143 type P2 Mask to EN 136	Filter to EN 143 type P3 Mask to EN 136
Lightweight powered helmet or hood	EN 12941 type TH1	EN 12941 type TH2

Hazard Assessment Summary

In sheet or processed form wood-based panels are non-classifiable under the COSHH regulations. The table below summarises the most common hazards and appropriate control methods to minimise the risk of harm actually occurring.

Common hazards and methods of control		
Activity	Hazard	Control
Manual handling (in full sheet form)	Large sheet sizes present a risk of strain or crush injuries if not handled correctly.	Store carefully in uniform stacks on a flat level base. Use mechanical handling equipment. Adopt correct manual handling procedures
Carpentry work Activities likely to produce high dust levels include:- Sanding by machine and hand Sawing, routing and turning Hand assembling machined or sanded components	Wood dust in general (including dust from wood-based panels) may cause dermatitis and allergic respiratory effects. Wood dust is flammable.	Off site: preparation under exhaust ventilated plant. On site: enclosure and exhaust ventilation. Dust extraction on portable tools. Good ventilation. Respiratory protection equipment. Note: Any health hazards arising from the use of wood-based panels at work can and should be controlled by compliance with the requirements if the Control of Substances Hazardous to Health (COSHH) Regulations 2002.

References

⁵⁾ "Manual Handling Solutions in Woodworking". Health & Safety Executive reference INDG318 3/00. (Crown copyright material is reproduced with the permission of the Controller of Her Majesty's Stationery Office).

This can be found at the following web address www.hse.gov.uk/woodworking/manualhandling.htm