

 MRAT 071	Dust from wood working	Applicable to: blockboard; hard wood; MDF; particle boards; plywood; soft wood	See also: 074 to 086 G225
Process(es) covered:	Hand operations do not usually produce large quantities of dust but machine operations often do. Operations such as checking dust control equipment and emptying dust bags are also covered.		

Control Measures

- So far as reasonably practicable, local exhaust ventilation **must be** provided to control the dust at its source.
- Wear eye protection at all times when using machines.
- Regular cleaning using a dustless method (eg, an industrial vacuum cleaner) is needed to reduce background dust levels and prevent fire.
- If staff may be exposed to high dust levels while checking dust control equipment or emptying dust collection bags, a dust mask must be worn. If the task is likely to take more than 15 minutes or if the dust comes largely from MDF, the mask should be to FFP3. Refer to GL310 - A guide to the use of Respiratory Protective Equipment (RPE) in school D&T and science

Storage	Collected dust should not be stored, the sacks should be placed immediately in the refuse bins.
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Disposal	Dust should be collected in heavy-duty plastic sacks and disposed of via the normal refuse collection. If the dust has been contaminated, eg, with engine oil, disposal should be as for the contaminant.
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Details of dust hazards

- The hazards of wood dust are discussed in the HSE Information Sheet WS 30: Toxic Woods. While hardwoods tend to give rise to more effects than softwoods, there is a large variation from one tree to another of the same species.
- Any person, including a pupil, who suffers from any of the complaints described below, or suspects they may have been induced, should seek medical advice.

Examples of the attributes of certain woods fall into the following categories:

Strongly allergenic	Box, Mahogany, Iroko, Rosewood, Satinwood, Yew and Teak.
Biologically active	Larch, Pine, Cedar, Ebony, Sapele, African Mahogany and Poplar. Significant exposure could result in symptoms of rhinitis, asthma, dermatitis or eczema.
Allergenic	Chipboard, Blockboard and Plywood are manufactured using phenolic and amino resins and the resulting dust may cause allergic reactions in persons who have already been sensitised.
Carcinogenic	Hardwoods, particularly Oak and Beech, have been blamed for the very rare cancers observed in the furniture and cabinet-making industries. The much shorter exposure times in school workshops make the risks there extremely low.

Risk Assessment

Hazards

Harmful Hazardous to health Flammable	Wood process dust is hazardous by inhalation. Mixed hard-wood and soft-wood dusts have an LTEL (8 hrs) 3 mg m ⁻³ . Wood dust irritates eyes and the respiratory tract. Exposure to wood dusts above the quoted limits can give rise to skin and lung disorders. Individual wood-working machines without extraction equipment have produced levels of 5 to 10 times the WEL during periods of use Sawdust is flammable.
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Risks

Harmful Hazardous to health	Because of workplace limits, employers have the duty to keep the dust level as far below the limit as is reasonably practicable. When considering individual employees' exposure to wood dust, the employer must take into account their exposure from all sources. For example, 30 minutes at the circular saw, 20 minutes at the planer, 10 × 2 minutes observing pupils at the sander and exposure to background levels throughout the day. The risk of cancer is extremely low. In general, extraction will be needed at machine saws of all types, sanding machines and any other type of wood working machine where fine dust is produced, including portable power tools.
Flammable	General dispersion of sawdust should be controlled. The design of dust collection equipment should be such that it does not increase the risk of fire and explosion.

Further information

- Medium density fibreboard (MDF) uses a urea-formaldehyde resin as bonding agent and has been accused of producing hazardous fumes when worked. There is still **no evidence** that this is true but it **does** give rise to much fine dust which must be controlled. CLEAPSS document PS33, *Medium density fibreboard (MDF)*, gives up-to-date information. Note that hand sanding of MDF can produce large amounts of dust, which should be controlled.
- Waterproof MDF (usually coloured green) presents the same hazards as ordinary MDF: it is treated to absorb less water and is so more suitable for use in kitchens and bathrooms.
- Some people are allergic to the dust from any sort of timber and special measures may be needed.
- Some employers prohibit the use of some or all tropical hardwood timber. Iroko dust has particular problems. D&T departments may be offered old iroko science bench worktops following refurbishment of laboratories. The general advice from CLEAPSS is that iroko should not be used but if it is then no hand or machine sanding should be done by pupils and when being cut by machine the operator should wear a face mask to FFP3 whilst cutting is in progress. Teachers should check with their employer for any such restrictions.
- CLEAPSS guide L225, *Local Exhaust Ventilation in Design and Technology*, gives details on the regulations covering LEV, ways of providing it, appropriate tests and sources.