

Picture Framers Guild of Australia Incorporated

Material Hazards

The use of power saws to cut a multitude of different species of frame mouldings and MDF in the picture framing industry leads to the issues of short and long term health for the worker in the industry. The creation of dust and fumes through the cutting process is an issue that needs to be addressed for a healthy work place.

Each State and Territory has a principal Occupational Health, Safety & Welfare Act that sets out requirements for ensuring that workplaces are safe and healthy. These requirements spell out the duties of different groups of people who play a role in workplace health and safety. These requirements are known as the "Duty of Care". (See also information sheet OHS&W.)

Wood Products

Wood is classified into two broad families. Hardwood, such as oak, teak and jarrah, and softwood, such as pine and cedar.

The classification is botanical and depends on the fine structure of the cells in the wood species. It does not refer to the physical properties of the wood. For example, balsa wood is a hardwood.

The type of wood making up particleboards, e.g. chipboard, hardboard, MDF is not always known, but it is usually a high proportion of softwood.

The composition of MDF is wood particles, urea formaldehyde resin and paraffin wax.

Note: The above ingredients are bound together under heat and pressure. The process "cures" the resin, but small amounts of formaldehyde may be released from the finished product. The finished product contains less than 0.01% free formaldehyde.

Different Woods

While there has been considerable research carried out on European and North American species, relatively little is known about the way dusts from different Australian timbers affect peoples health. Each type of timber has its own chemical components and may affect people differently.

Even less is known about dusts from imported woods, for example from Africa, South America and Asia. There is a concern that adverse health affects from some of these wood dusts may not show up for perhaps many years. Protection for workers today is therefore vitally important.

Exposure Standards

Exposure limits as set by Worksafe Australia as listed in “Exposure Standards for Atmospheric Contaminants in the Occupational Environment 2nd Edition 1991” is as follows:

Wood dust (soft wood): 5mg/m³ Time-Weighted Average (TWA) 10mg/m³ Short Term Exposure Limit (STEL). It is also listed as a sensitizer, and the exposure standard is under review.

Wood dust (hard wood): 1mg/m³ TWA. It is also a sensitizer and the exposure standard is under review.

Formaldehyde: 1.0 ppm (1.2mg/m³) TWA. 2.0 ppm (2.5mg/m³) STEL. It is also listed as a sensitizer and a Category 2 carcinogen.

Paraffin Wax (fume): 2mg/m³ TWA.

Medium Density Fibreboard (MDF)

Ventilation:

All work with these boards needs to be carried out in such a way as to minimize the generation of dust, gas and vapour.

Under factory conditions, sawing, drilling, sanding, etc needs to be done with equipment fitted with exhaust devices capable of removing dust, gas and vapour at source. Hand power tools need to be used in well ventilated areas so as to avoid the spread of dust, gas and vapour.

Storage and work areas need to be well ventilated.

Work areas should be cleaned at least daily, and dust removed by vacuuming or wet sweeping method.

Personal Protection:

Clothing:

Wear loose, comfortable clothing. Long-sleeved shirts and trousers are recommended if skin irritation occurs. After handling boards, wash with mild soap and water. Do not scratch or rub the skin if it becomes irritated. Wash work clothes regularly and separate from other clothes.

Glove Type:

Comfortable working gloves can be worn (AS 2161).

Respiratory Type:

AS1716: A class P1 or P2 replaceable filter or disposable face piece respirator needs to be worn when sawing, drilling, sanding, etc.

Eye:

Safety glasses or non-fogging goggles (AS 1337) need to be worn when sawing, drilling, sanding, etc.

Dust Extraction

The best way of reducing wood dust at a workplace is by using machines that are enclosed or fitted with an effective Local Exhaust Ventilation (LEV).

LEV involves locating an extraction outlet as close as possible to each identified source of dust and having sufficient air velocity to draw dust away before it becomes airborne.

On some machines with a single cutting, grinding or sanding face, there may be several sources of dust either thrown, drawn or blown from different parts of the machine. Ideally, each dust source needs to be controlled by the LEV system.

While most dust is from machines, hand-sanding fine furniture can be one of the dustiest jobs at the workplace. Hand sanding generally requires the use of respiratory protection.