

WOOD PROCESSING WORKS

November 2007

Wood processing can have minimal environmental impact if located in an appropriate area and sited, designed and operated properly. If proper care is not taken to address environmental issues, however, it has the potential to cause environmental harm

For the purposes of this guide, wood processing is defined as the conduct of works where timber is sawn, cut, chipped, compressed, milled or machined with a total processing capacity not exceeding 4000 cubic metres per year (other than works at a builders supply yard or home improvement centre). When a wood processing works proposal exceeds this scale it must be referred to the Environment Protection Authority (EPA) under Schedule 8 Item 11 Schedule 22 (2)(13) of the *Development Regulations* 1993.

The purpose of this guide is to help council planners assess proposals for wood processing works from an environmental viewpoint. It focuses on environmental issues and does not deal with the process of assessing proposals against the provisions of the Development Plan.

Key environmental issues

- Noise
- Air quality
- Water quality
- Waste management

Information requirements

The following environmental information is required to undertake an adequate assessment:

- separation distances from residential or other sensitive receivers
- air quality protection measures
- noise mitigation measures
- water demand and use
- water and soil protection measures including
 - wastewater containment and disposal
 - chemical storage and work areas
 - stormwater pollution prevention
 - solid waste storage and disposal.

The *Guide for Applicants - Wood Processing Works* provides more detail on information requirements and can be found at <www.planning.sa.gov.au>.

Applications lacking any of this information should not be accepted.

Before you read further: information about noise in this document may be out of date. This document is being revised. Please refer to the Environment Protection (Noise) Policy 2007, available at www.legislation.sa.gov.au.

Environmental Assessment

Noise

Noise nuisance from wood processing is generated from circular saws, planers, routers and other equipment.

Schedule 2 of the *Environment Protection (Industrial Noise) Policy 1994* specifies the maximum level of noise exposure for people living near industrial and other non-domestic premises. These levels are intended for existing situations. However, people who live in these areas are typically more sensitive when a new source of noise is introduced and a 5dB(A) reduction should be made to the maximum permissible noise levels contained in Schedule 2 when assessing the suitability of new development proposals.

The following table of maximum permissible noise levels already incorporates a 5dB(A) reduction for development assessment purposes.

Description of area in which the noise source is situated ¹	Maximum noise levels ² - dB(A)	
	7am-10pm	10pm-7am
Rural or predominantly rural	42	35
Urban residential	47	40
Urban residential with some commerce, or with a school, hospital or the like	50	40
Urban residential with some manufacturing industry or with some places of public entertainment or places of public assembly or licensed premises	53	45
Predominantly commercial	60	55
Predominantly industrial	65	65

1. While this description focuses on the source of the noise, it is reasonable that it should also extend to the area where the nearest sensitive receivers are. Typically, sensitive receivers will be found in more sensitive zones than the source itself, for example, an industry zone may have a nearby residential zone containing the closest houses.
2. Measured at any place, other than the premises from which the noise emanates, where a person lives or works.

The above noise levels may be exceeded where an acoustic engineer can show that the noise from the development will not cause an adverse impact because of the existing level of ambient noise, or the limited duration or frequency of the activity.

The onus of proof that noise reduction measures prevent adverse noise impacts rests with the developer.

Air quality

Timber product manufacturing operations often result in complaints about the fallout of sawdust from mechanical extraction systems. Extracted waste products from machines in the work area must be efficiently collected before the extracted air is passed to the atmosphere.

Where the waste contains a significant proportion of particles that are less than 20 microns (sander dust), the use of a fabric or cartridge filter is necessary to obtain satisfactory collection efficiency. This is preferable to using a high efficiency cyclone because it will collect fine wood dust. At no time should the discharge from any of the dust extraction systems exceed 100 mg/m³.

Recommended minimum separation distances between types of wood processing works and sensitive receptors (e.g. residential premises) are presented in the following table.

Activity	Comment	Recommended separation distance (m)
Sawmills		500
Wood fibre/chip production		300
Joineries	Wood working	50

When spray painting or lacquering will often be carried out in association with wood processing works, refer to the Environmental Assessment Guide for Planners, *Surface Coating (Spray painting and powder coating)*. The recommended separation distance for air quality purposes between the spray-booth and the nearest residential (or other sensitive) premises is 50 metres.

Smaller separation distances should be considered only if justified by noise/dust/odour modelling provided by an applicant. Ideally, works involving wood processing should be located in a zone designed to accommodate industrial land uses where they are remote from sensitive land uses. Because of the nature of noise associated with wood processing and the potential for dust impacts, wood processing should not be located on the periphery of industry zones.

Water quality

Pollutants generated by wood processing should be prevented from entering water bodies (including groundwater) through direct discharge, seepage or through contamination of stormwater. Pollutants include timber residues including sawdust, litter, petroleum products, paints, solvents, coolants, degreasing agents, sediments, rubber particles and detergents.

Hazardous materials (fuels, oils, and other chemicals) must be stored in a bunded and preferably rainproof area to minimise the risk of surface and groundwater contamination. The EPA *Guideline for Bunding and Spill Management* provides information on design and management of bunded areas <www.epa.sa.gov.au/pdfs/guide_bunding.pdf> Any disposal to sewer of liquids that accumulate in such areas will require the approval of SA Water's Trade Waste Group.

Stormwater management

Roof stormwater should be collected for reuse and must be managed separately from potentially contaminated runoff (i.e. from car parks, hard paved areas or the ground).

Large hard-paved areas associated with industrial premises, such as car parks, will increase stormwater runoff, possibly leading to siltation and pollution of adjacent waterways, and should be treated to ensure that stormwater is of a suitable quality before discharge off site. Wood processing works should incorporate a stormwater management system for all areas where contaminated runoff may be generated (including car parks). Structural controls such as bunded storage areas, first flush diverters, gross pollutant traps, oil/water separators, hydrocarbon absorbers, infiltration basins (may be grassed or vegetated swales, garden strips or stone-filled trenches), sediment traps or soluble pollutant removers are all acceptable methods. Stormwater treatment specialists should be consulted to determine which management systems will be most effective.

As a minimum requirement, all hard paved areas should drain to a stormwater treatment device capable of removing sawdust, oil, and silt before discharging to the council stormwater system.

Water conservation

Wood processing works should incorporate systems that enable the containment and reuse of water (including treated stormwater and wastewater) to replace potable (mains) supplies for operations such as landscape irrigation, toilet flushing and process water (e.g. machine cooling and cleaning).

Behavioural work practices, such as stormwater drain labelling, signage displaying standard operating procedures, and training of employees are also encouraged in addition to in-built structural controls outlined above.

Waste management

Sawdust and off-cuts should be collected and disposed of. The storage and transfer of sawdust from bins should be undertaken within a sheltered area to minimise spillage. Waste from treated timber products, like permapine, must be segregated from untreated timber waste products, which may then be recycled.

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Checklist of environmental issues

- Adequate separation distances
- Application complies with spray booth standards where applicable
- Extraction systems are examined carefully
- Stormwater and wastewater are independently managed
- Facilities are available to store waste
- Adequate methods of waste removal

Draft Standard Conditions

To use and adapt as may be applicable to a specific proposal

1. The ventilation system must be operated to ensure the concentration of particles vented to the atmosphere does not exceed a concentration of 100 mg/m³.

2. Sawdust and waste timber storage bins should be located within the workshop building or otherwise be enclosed to prevent sawdust escaping while equipment is operating and during removal of the wood waste, and to prevent any rainwater intrusion.
3. Any product likely to pollute water (e.g. hazardous chemicals) must be appropriately segregated, labelled and stored within a bunded compound or area suitable for preventing the product escaping into surface or underground water resources. The bunded area must have a capacity to contain 120% of the largest container stored.

Note:

The EPA Guideline, Bunding and Spill Management will assist with information on the design of bunded areas: <www.epa.sa.gov.au/pdfs/guide_bunding.pdf>

4. Where wood dust extraction from woodworking machinery is necessary (e.g. for occupational health and safety reasons) either dedicated fabric filtration dust collectors or a high efficiency cyclone must be used.
5. All stormwater runoff from car parking, driveways, and other areas that are hard paved and used in conjunction with bulk handling facilities, must be directed into:
 - grassed swales, vegetated or garden strips
 - small infiltration basins over permeable soils
 - surface or underground stone-filled trenches (i.e. similar to a septic tank absorption field) and/or
 - sediment traps

which are sized to effectively contain and filter out sediment in a three (3) month average recurrence interval runoff event, prior to any discharge off site. In the event of a larger runoff event, allowance can be made to discharge stormwater overflow direct to the council stormwater system by means of a high flow bypass.

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If spray painting is to occur:

6. All spray painting must be carried out in a confined area where any fugitive paint, solvent etc. can be captured by exhaust fans.
7. Exhaust from the spray-painting booth will be directed to a chimney terminating not less than 3 metres above the highest structure within a 30 metre radius. Discharge should be vertical and unimpeded by any conical type rain protector. Exhaust velocities shall be not less than 10 metres per second.
8. All decanting, dilution or mixing of any solvents, paints, lacquers or other odorous materials must take place in a dedicated area (paint mixing room) where there is an exhaust fan coupled to a flue which extends at least 3 metres above the highest structure (excluding the spray booth exhaust chimney) within a 30 metre radius. Discharge is to be vertical and unimpeded by any conical type rain protector and exhaust velocity must be of at least 10 metres per second.

9. The proposed spray painting facilities must be designed so that floor grades and associated drains can be directed into a dedicated wastewater collection, treatment and storage and disposal system.
10. All cleaning wastes and spills from spray painting facilities and associated workshop areas must be collected, treated and disposed of to sewer or to the community wastewater management system (CWMS), or otherwise disposed of by removal from the site by a licensed waste transporter.
11. Noise generated from the development must not exceed ... between the hours of ... and ... measured and adjusted at the nearest sensitive receiver in accordance with the *Environment Protection (Industrial Noise) Policy, 1994*.

The following note provides important information for the applicant and should be attached to the approval notice.

The applicant is reminded of their general environmental duty, as required by Section 25 of the Environment Protection Act, to take all reasonable and practical measures to ensure that activities on the whole site, including construction activities, do not pollute the environment in a way, which causes or may cause environmental harm.

References

Information sheets, guidance documents, codes of practice, technical bulletins referenced in this guide can be found at: www.epa.sa.gov.au. These include the following EPA Guidelines:

Guidelines for Separation Distances, August 2000

Joineries: Dust and Noise Control, September 2003

Spray Painting Booths: Control of Air and Noise Emissions, September 2003

Bunding and Spill Management, January 2004.

The Environment (Industrial Noise) Policy, 1994 can be accessed through: www.legislation.sa.gov.au, and the *Environment Protection (Water Quality) Policy 2003*.

FURTHER INFORMATION

Legislation

Legislation may be viewed on the internet at: www.legislation.sa.gov.au

Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet	Telephone:	13 23 24
101 Grenfell Street	Facsimile:	(08) 8204 1909
Adelaide SA 5000	Internet:	shop.service.sa.gov.au

For general information please contact:

Environment Protection Authority	Telephone:	(08) 8204 2004
GPO Box 2607	Facsimile:	(08) 8124 4670
Adelaide SA 5001	Freecall (country):	1800 623 445
	Internet:	www.epa.sa.gov.au
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