

Assessment of abrasive blasting

Updated September 2017

EPA 672/17: This guideline will assist a relevant authority (as defined by the Development Act 1993) to undertake an environmental assessment of proposals for abrasive blasting.

Introduction

The information contained in this guideline is in lieu of the advice given by the Environment Protection Authority (EPA) in responses to referred development applications prior to removal of the activity from Schedule 21 of the *Development Regulations 2008*.

For the purposes of this guideline, abrasive blasting is defined as cleaning materials by the abrasive action of any metal shot or mineral particulate propelled in a gaseous or liquid medium solely by using blast cleaning cabinets less than 5 m³ in volume or totally enclosed automatic blast cleaning units.

When an abrasive blasting proposal falls within the Schedule 22 definition of abrasive blasting it must be referred to the EPA under Schedule 8 Item 11 Schedule 22 (2)(1) of the *Development Regulations 2008*.

Assessing environmental issues

Air quality and noise

Separation between abrasive blasting and sensitive land uses

The EPA guideline [Evaluation distances for effective air quality and noise management](#) recommends evaluation distances between sensitive land uses¹ and activities that may result in noise, odour, or polluting air emissions.

The evaluation distance recommended is 50 m for abrasive blasting by using blast cleaning cabinets less than 5 m³ in volume or totally enclosed automatic blast cleaning units.

If the proposed development is located within the recommended evaluation distance the applicant should demonstrate that a lesser distance would be appropriate. The Evaluation distances guideline explains the type of information to be provided to facilitate smooth processing and assessment of applications/submissions, avoiding unnecessary delays and costs to proponents.

¹ Sensitive land uses include, but are not limited to, residential housing, child care centres, educational establishments, hospitals, nursing homes, parklands and recreation areas. Industrial and commercial premises can also be affected by noise and air emissions.

Reducing the air quality and noise impacts of abrasive blasting

All abrasive blasting needs to be carried out in a cabinet constructed to contain the emission of particulate matter (generally dust) from the blasting operation. The blast room or cabinet needs to be totally enclosed and vented to the atmosphere through an effective dust collector, preferably a fabric filter or paper cartridge. Open air blasting is only permissible with the consent of the EPA when the object is too large or too heavy to fit in a booth, or is a fixed structure (via referral to EPA under Schedule 8 Item 11 Schedule 22 of the Development Regulations 2008 and subsequent licensing under the *Environment Protection Act 1993*).

Fabric filters (felted cloth, pulse air cleaned) and paper cartridges (pulse air cleaned) are the recommended dust collectors. The quality of air emissions should meet the requirements of the *Environment Protection (Air Quality) Policy 2016*. Wet scrubbers are not recommended as they do not work well if not properly maintained.

All exhaust ducts should terminate at least 3 m above the highest structure within a 30-m radius of the exhaust. Discharge from the dust collector to the atmosphere needs to be vertical, at a minimum discharge velocity of 10 m/sec. All cabinets that have external exhaust ducts should meet the required separation distances.

If lead paint removal is to be undertaken, the following issues must be addressed:

- the capture of lead contaminants
- removal from the grit recycling process
- the process for following Australian Standard *AS 4361.1–1995: Guide to Lead Paint Management – Industrial Applications*.

The applicant will also need to demonstrate that relevant indicative noise levels specified in clause 5 of the *Environment Protection (Noise) Policy 2007* (Noise Policy) would not be exceeded at the nearest sensitive receiver, both during the day and at night. This may require a report from an acoustic engineer stating that noise from all fixed and transient noise sources on site will meet the Noise Policy at the nearest sensitive receivers; otherwise the acoustic report should recommend measures to achieve this.

Waste management

Waste generated is likely to include spent media, filter cartridges, wastewater and personal protective clothing. Waste should be contained and securely stored before disposal to a licensed waste depot. Abrasive waste that contains toxic heavy metals (eg lead) must be disposed of at a licensed hazardous waste facility approved to take heavy metals. Silica-free abrasives should be used.

The development should include provision for:

- implementation of the waste management hierarchy² as identified in the *Environment Protection (Waste to Resources) Policy 2010*.
- dedicated covered areas for all non-toxic solid waste materials
- dedicated covered and bunded areas for all toxic waste materials
 - containment and/or treatment of liquid wastes prior to transport off site by an EPA-licensed transporter
 - removal of solid toxic wastes from the site regularly by an EPA-licensed transporter.

The EPA guideline, [Bunding and spill management](#), contains further information on design, capacity, operation and maintenance of bunds.

² Waste management hierarchy, as described in the *Zero Waste SA Act 2004*, refers to an order of priority for the management of waste, being: avoidance of the production of waste, minimisation of the production of waste, reuse of waste, recycling of waste, recovery of energy and other resources from waste, treatment of waste to reduce potentially degrading impacts, and disposal of waste in an environmentally sound manner.

Wastewater management

The *Water Industry Act 2012* prohibits the discharge of certain substances into the sewerage system and establishes a requirement for industries to have approval to discharge certain substances to sewer.

Wastewater, process liquors or sludges that are not permitted to be discharged to the sewer should be contained in approved blind tanks and be removed by a waste transporter licensed by the EPA to carry such material to an appropriate waste facility.

Water quality

Abrasive blasting may produce a number of pollutants such as suspended solids, grease, lubricants, solvents, nutrients and oils that have potential to contaminate water bodies. Under the *Environment Protection (Water Quality) Policy 2015* contaminated stormwater is defined as wastewater and should be managed as such. Pollutants generated by abrasive blasting should be prevented from entering water bodies (including groundwater) through direct discharge, seepage or through contamination of stormwater.

Storage and handling of goods

Contamination of stormwater by goods that are stored and handled at the site can be prevented by methods such as:

- dedicated bunded and, where practicable and economically viable, roofed, compound areas for storage of all chemicals, petroleum and degreasing products
- an impervious floor within a dedicated loading/unloading area, which is bunded to contain spills, for the loading/unloading of all chemical products
- spill containment devices such as a blind tank of an appropriate size, which is fitted with a high level alarm system, and is emptied as required by an EPA-licensed waste contractor
- a Class 1 full retention separator with high level visible and audible alarms through which stormwater from high risk areas should be directed before entering the stormwater system
- a Class 1 retention by pass separator equipped with coalescer unit and high level visible and audible alarms through which stormwater from low risk areas should be directed before entering the stormwater system.

Stormwater – Water sensitive urban design

Water sensitive urban design is an approach to urban planning and design that seeks to integrate the management of the total water cycle to minimise the impacts of development, protect water quality, make more efficient use of water, reduce the cost of water infrastructure, and address flooding.

Further information on water sensitive urban design can be found at:

- [Planning professionals and developers](#)
- [Water Sensitive SA](#)
- [Creating more liveable and water sensitive cities in South Australia.](#)

Disclaimer

This publication is a guide only and does not necessarily provide adequate information in relation to every situation. This publication seeks to explain your possible obligations in a helpful and accessible way. In doing so, however, some detail may not be captured. It is important, therefore, that you seek information from the EPA itself regarding your possible obligations and, where appropriate, that you seek your own legal advice.

Further information

Legislation

[Online legislation](#) is freely available. Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet
Adelaide Service SA Centre
108 North Terrace
Adelaide SA 5000

Telephone: 13 23 24
Facsimile: (08) 8204 1909
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General information

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