

Noise level limits for fixed domestic machine noise (including air conditioner noise)¹

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EPA 423/10: This information sheet provides information on the noise level limits for fixed domestic machines² and the actions you can take for excessive noise, as well as on the purchase and installation of air conditioners.

Introduction

Many purchasers of fixed domestic machines such as air conditioners and pool pumps find that after the unit is installed, the noise annoys their neighbours and it does not meet the requirements of the *Environment Protection (Noise) Policy 2007* (Noise Policy). Be aware that if you are the owner/occupier of a domestic premise, you must not install a domestic machine in a fixed position if the noise from operating the unit has an adverse affect on amenity. To avoid problems, the Environment Protection Authority (EPA) recommends that prior to installing a fixed air conditioning unit, the installer should refer to the manufacturer's information to assess whether the noise from the proposed installation of the unit will comply with the Noise Policy.

If you are the owner/occupier of domestic premises, it is your responsibility to ensure that a fixed domestic machine is not operated on the premises if the noise resulting from the operation of the unit has an adverse impact on the amenity of the neighbours.

The owner/occupier must take all reasonable and practicable measures to eliminate or significantly reduce the noise coming from a fixed domestic machine. This includes maintenance and repair of the unit.

The operation of a fixed domestic machine results in noise with an adverse impact on amenity if it generates noise greater than 45 dB(A) between 10 pm and 7 am the next day, or greater than 52 dB(A) between 7 am to 10 pm when measured at the receivers premises in accordance with the requirements of the Noise Policy.

An installer must not install a unit if it does not comply with the Noise Policy. However, the installer is not guilty of an offence if:

- a The machine complied with the Noise Policy and had no defects at the time of installation resulting in noise with a characteristic that was audible at the noise affected premises; and
- b The adverse impact on amenity is the result of the removal of a barrier at the noise source after the time of installation of the machine.

¹ Previously titled *EPA Information Sheet: Air conditioner noise (2008)*.

² Throughout this document, reference to fixed domestic machines includes air conditioners, pool pumps, central vacuum cleaning units, etc.

To operate a fixed domestic machine without restriction, the noise level should not be greater than 45 dB(A) at any time when measured at the receivers premises in accordance with the requirements of the Noise Policy. It is the responsibility of the owner/occupier to take remedial action (such as erecting a noise barrier) so that the noise from the unit does not cause an adverse impact.

To enjoy the maximum benefits from a fixed domestic machine, try following a few simple steps.

Shopping for an air conditioner

When comparing air conditioners, check the sound power level label on the unit or in the printed specifications. The smaller the number of dB(A), the quieter the air conditioner. Comparing labels on units of the same capacity allows you to choose a quieter unit. Room air conditioners are generally noisier than split systems of the same capacity. In addition, they are often mounted high on the wall, reducing the effectiveness of fences as noise barriers.

You may find that the sound power level label on an air conditioner is 60 dB(A) or more and wonder how it could ever comply with a legal limit of 45 dB(A). This can be explained by the following comparison. A light globe with a power rating of 60 watts has a certain intensity of light at the actual globe, but with distance this intensity decreases, although the power of the globe remains at 60 watts. Similarly, the noise level of an air conditioner with a sound power level of 60 dB(A) will decrease as distance from the unit increases.

Insulating first

You can lower the work load on an air conditioner by insulating the ceiling, and shading the north, east and west facing windows of the residence. You may then be able to choose a smaller capacity, and usually quieter, unit.

Negotiating the contract

An installer should be aware of the requirements of the Noise Policy.

Selecting installation position

The siting of the air conditioner is the most important factor in ensuring that noise is not going to be intrusive. Placing the unit at the side of your house close to the neighbour's house is likely to create excessive noise, as the noise is trapped and reflected between the walls and eaves of the two houses. A fence has limited value in reducing the noise in this situation, unless it is solid and is as high as the eaves of one or both houses.

Placing the air conditioner on the rear wall facing the backyard, or on a front or sidewall facing the street, reduces the noise reaching neighbours. Also, if the noise is found to be excessive, it is a simple task to construct a barrier to shield the neighbouring property from the noise.

If a suitable position at the back is difficult to find because of a very small yard, a split-system compressor can often be located at the front, away from the house wall. This option can overcome

the inability to use the front wall because of picture windows or pathways. The unit can be concealed by vegetation or a low L-shaped barrier.

Enclosing the air conditioner

If an air conditioner must be put at the side of a house because no reasonable distance from a neighbour can be found, a practical alternative to reduce the noise is to install an acoustic enclosure.

Acoustic enclosures are custom built and must incorporate correctly designed ventilation. They need to be built and fitted in conjunction with the manufacturer of the air conditioner in order to maintain the warranty on the unit. You should discuss this option with the installer prior to installation as an enclosure can impair the efficiency of the unit and be expensive.

Allowing for a noise increase

Over time, fixed domestic machines, like any machines, deteriorate in their performance. This is accompanied by an increase in noise from worn bearings, cabinet rattles, dirty or rusty fan blades, worn rubber mountings and compressor wear. Some of this increased noise can be reduced by regular maintenance; however, make allowance for a slight increase in noise over time after installing the unit.

Using evaporative coolers

Roof-mounted evaporative coolers are generally quieter than refrigerated units. However, as with refrigerated units, the noise level between models does vary. While evaporative coolers do not come with sound power level labels, manufacturers should be able to provide sound power levels for each model. It is recommended that you ask the retailer for a copy of the sound power levels for the particular model.

Installation position of cooler

When mounted on a roof that slopes towards a neighbour's yard, some high-capacity models may be excessively noisy, particularly if the unit is on the lower portion of a roof with a steep pitch. The best location is generally on the roof facing the rear yard, unless the unit is noisy and the yard is very small. Locate the cooler as high on the roof as possible to minimise reflected noise. If your neighbour's land is much higher than yours and your air conditioner is likely to be level with their backyard, the noise reaching your neighbour will be greater.

Other options

De-rating (slowing down the motor) is one way to quieten noisy evaporative coolers.

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

Legislation may be viewed on <www.legislation.sa.gov.au>

Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet	Telephone:	13 23 24
Adelaide Service SA Centre	Fax:	(08) 8204 1909
108 North Terrace	Website:	< shop.service.sa.gov.au >
Adelaide SA 5000		

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
	Website:	< www.epa.sa.gov.au >
	Email:	< mailto:epainfo@epa.sa.gov.au >
