Most states and territories in Australia have regulations that specify air conditioner noise limits, or time limits when an air conditioner should not be audible. Regulations often consist of specific noise levels (sound power level dB(A)) that must not be exceeded during specific times. Typically, lower noise levels or more stringent requirements are specified for the night and early morning periods.

Noise levels are measured either at the fence or boundary between the owner and neighbour's property, or at a specified point on the neighbour's property. To avoid the risk of disputes, penalties or legal action, it is essential to select the quietest air conditioner possible and have it installed as far away from any surrounding houses or apartments as possible, or to make other provisions in the installation to mitigate any noise problems. If specified noise levels are exceeded and a compliant is made and proven, units may need to be relocated, repaired or removed.

### ALLOWABLE LEVELS BY STATE

#### ACT

<table>
<thead>
<tr>
<th>Location</th>
<th>7am–10pm (8am–10pm on Sunday and public holidays)</th>
<th>10pm–7am (10pm–1am on Sunday and public holidays)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civic centre and other major town centres (Belconnen, Gungahlin, Woden, and Tuggeranong)</td>
<td>60dB(A)</td>
<td>50dB(A)</td>
</tr>
<tr>
<td>Group centres such as Dickson and Kingston</td>
<td>55dB(A)</td>
<td>45dB(A)</td>
</tr>
<tr>
<td>Smaller local centres such as Griffith and Lyneham</td>
<td>50dB(A)</td>
<td>35dB(A)</td>
</tr>
<tr>
<td>Residential zones</td>
<td>45dB(A)</td>
<td>35dB(A)</td>
</tr>
</tbody>
</table>

The ACT abides by the Environment Protection Act 1997 and the Environment Protection Regulations 2005, which both include noise limits for air conditioners.

The territory was divided into noise zones based on land uses, and the preceding noise standards must not be exceeded at the lease boundary of the land from which the noise is being emitted.

If a residence borders on non-residential land, or if it is located on non-residential land, different noise standards may apply.

#### NEW SOUTH WALES

In New South Wales, Protection of the Environment (Noise Control) Regulation 2008 covers noise limits and time restrictions for usage of air conditioners.

As a guide, the allowable noise level is no more than 5dB(A) sound pressure level above background noise. This is measured at the boundary between the owner and the neighbours' properties. In multi-unit complexes the measurement is taken inside the neighbours’ unit. Local city councils may impose specific maximum limits.

Air conditioners can be used on weekdays between 7am and 10pm, and on weekends and public holidays between 8am and 10pm. At other times, air conditioners must be turned off, unless they are inaudible from neighbours’ homes.

#### QUEENSLAND

Queensland follows the Environmental Protection Act 1994, which includes noise limits for air conditioners.

The allowable noise levels are no louder than 5db(A) above background noise between 7am and 10pm, and no louder than 3dB(A) above background noise between 10pm and 7am.

#### SOUTH AUSTRALIA

The Environment Protection (Noise) Policy 2007 provides South Australia with its noise limits for air conditioners.

During the day (between 7am–10pm), the continuous noise of an air conditioner must not exceed 52 dB(A). During the night (between 10pm– 7am) the continuous noise of an air conditioner must not exceed 45 dB(A).

#### TASMANIA

The Environmental Management and Pollution Control (Miscellaneous Noise) Regulations 2014 are made under the Environmental Management and Pollution Control Act 1994 (EMPCA).

The limits shown on the following table must be adjusted if tonal noise is present (subtract 5dB(A)); or if impulsive noise is present (subtract 2dB(A)).
LAmax might be used to measure a sharp, loud banging noise that occurs for there is a lot of background noise.

Noise levels in different areas, because air conditioners will be less audible if the radius of the property. The influencing factor takes into account background the amount of industrial and commercial land and major roads within a 450m does not exceed this lower level.

Further Environmental Protection Authority (EPA) information has indicated that the level of 40dB(A) at night might be an appropriate level to use as a guide for calculation purposes.

As a guideline, the EPA recommends that during the day, air conditioner noise does not exceed the background noise level by more than 5dB(A) sound pressure level, as measured at the property boundary.

**WESTERN AUSTRALIA**

In Western Australia, the noise from an air conditioner installed on a property must comply with the Environmental Protection (Noise) Regulations 1997. For each time period throughout the day, there are three separate noise levels that air conditioners must comply with:

- **L_{A10}** means a noise level which is not to be exceeded for more than 10 per cent of the time, e.g. for more than 10 minutes in 100 minutes.
- **L_{A1}** means a noise level which is not to be exceeded for more than 1 per cent of the time, e.g. for more than one minute in 100 minutes.
- **L_{Amax}** means a noise level which is not to be exceeded at any time.

**VICTORIA**

The Environment Protection (Residential Noise) Regulations 2008 includes time restrictions for the use of domestic air conditioners in Victoria. The restricted times are Monday to Friday 10pm–7am, and weekends and public holidays 10pm–9am. These prohibited times apply when the noise can be heard from inside a habitable room – any room other than a kitchen, storage area, bathroom, laundry, toilet, pantry, garage, garden shed – of another premises.

As a guideline, the EPA recommends that during the day, air conditioner noise does not exceed the background noise level by more than 5dB(A) sound pressure level, as measured at the property boundary.

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Further Environmental Protection Authority (EPA) information has indicated that the level of 40dB(A) at night might be an appropriate level to use as a guide for calculation purposes.

As a guideline, the EPA recommends that during the day, air conditioner noise does not exceed the background noise level by more than 5dB(A) sound pressure level, as measured at the property boundary.

Noise levels also need to be adjusted according to an “influencing factor” – the amount of industrial and commercial land and major roads within a 450m radius of the property. The influencing factor takes into account background noise levels in different areas, because air conditioners will be less audible if there is a lot of background noise.

**ENFORCEMENT**

In different areas, noise regulations are enforced by local councils, or local branches of the Environment Protection Authority (EPA) or equivalent body. Additionally, government officers may be authorised to issue warnings, abatement notices, penalties, or even initiate legal proceedings. In all jurisdictions, negotiation between neighbours is recommended as the first step in formally resolving any noise issue.

**ACT**


If, after mediation between neighbours fails, a noise complaint is lodged, the EPA will contact the person producing the noise and invite them to discuss the matter. In most cases, the matter is resolved at this point.

However, if another noise complaint is received, the EPA will visit the site and take a valid noise measurement. A warning letter or on-the-spot fine may be issued, or, depending on the circumstances, an Environment Protection Order (EPO) may be issued. A breach of an EPO is a serious offence. If the noise continues to be a problem, it could lead to prosecution in court.

**NSW**

City councils are responsible for enforcing sound limits at houses and units – if in breach, they may issue the owner or operator with a warning or notice, and an on-the-spot fine if the problem persists.

<table>
<thead>
<tr>
<th>Time of day</th>
<th>Noise level (dB(A))</th>
<th>L_{A10}</th>
<th>L_{A1}</th>
<th>L_{Amax}</th>
</tr>
</thead>
<tbody>
<tr>
<td>7am–10pm Monday to Saturday</td>
<td></td>
<td>45</td>
<td></td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>+ influencing factor</td>
<td></td>
<td>+ influencing factor</td>
<td>+ influencing factor</td>
</tr>
<tr>
<td>9am–7pm Sunday and public holidays</td>
<td></td>
<td>40</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>+ influencing factor</td>
<td></td>
<td>+ influencing factor</td>
<td>+ influencing factor</td>
</tr>
<tr>
<td>7pm–10pm All days</td>
<td></td>
<td>40</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>+ influencing factor</td>
<td></td>
<td>+ influencing factor</td>
<td>+ influencing factor</td>
</tr>
<tr>
<td>10pm–7am Monday to Saturday, 10pm–9am Sunday and public holidays</td>
<td></td>
<td>35</td>
<td>45</td>
<td>55</td>
</tr>
</tbody>
</table>
**QUEENSLAND**

City and shire councils throughout Queensland use the Environmental Protection Regulation 1994 to deal with noise complaints, however, the way regulation is administered may vary slightly between different councils.

For example, some councils do not issue fines for domestic equipment, and some councils use local laws to deal with certain situations. However, some councils may issue on-the-spot fines, and noise abatement notices.

Many councils prefer to mediate or encourage discussion between neighbours before further action is undertaken.

**SOUTH AUSTRALIA**

The EPA regulates noise impacts from residential appliances using the Environment Protection (Machine Noise) Policy 1994. These restrictions are enforced by authorised officers employed by the EPA. Some local councils also have officers authorised by the EPA. The EPA is responsible for enforcing these limits. If an air conditioner exceeds these limits and the owner continues to operate it, the EPA can issue the owner with an on-the-spot fine.

**TASMANIA**

In general, Tasmania’s noise regulation are implemented by local government and the Tasmanian Police.

**VICTORIA**

Local city councils regulate noise impacts from domestic air conditioners, and will alert the owner if a complaint is made about their air conditioner. Councils can also issue notices and on-the-spot fines, and have trained officers who can visit the property and check the noise level of the unit.

**WA**

In WA, local city councils have Environmental Health Officers who handle complaints about residential air conditioners.

**NOISE CALCULATOR**

AIRAH’s fairair.com.au website offers a noise calculator for people planning on installing an air conditioning unit. This noise calculator provides the maximum value to look for on the compulsory label on the outdoor unit. The maximum value is based on the AIRAH recommended maximum noise levels from your air conditioner at a property’s boundary -45dB(A) maximum during the day and 35dB(A) maximum at night.

However, this is a recommended figure only – as outlined in the above lists, councils around Australia have varying noise regulations that must be taken into account.

**PRACTICAL STEPS TO MINIMISE OUTDOOR NOISE**

**SELECTING THE UNIT**

Where outdoor noise may be a problem – i.e. in high density residential or quiet suburban applications or near noise-sensitive areas – the unit should be selected to be as quiet as possible. Manufacturers test their equipment for noise levels, and this information should be located either on a noise label attached to the unit, or contained in the manufacturer’s literature.

There is a significant variation between noise levels of differing equipment styles, size and manufacture. Consider installing premium quality units designed for quiet operation.

**ALLOW FOR A NOISE INCREASE**

When locating outdoor units and determining allowable noise levels, allowances should be made for a noise increase over time. Noise generated by the unit can increase over time as performance deteriorates, bearings wear out, vibrations increase and fans and compressors go out of balance. Although this tendency can be reduced by regular system maintenance, installers should make allowance for a slight increase of unit noise levels over time.

**LOCATING THE UNIT**

Some air conditioning systems are quieter than others and some have more flexibility in where they can be located. In general, air conditioners should not be located adjacent to windows, bedrooms or living areas. Facing the unit towards the back boundary or the front road, and avoiding noise-reflective surfaces such as walls and eaves, can also assist.

Split-system installation is more flexible, and the outside unit can be located closer to the ground, which allows fences and barriers to be used as noise screens.

Outdoor units should be installed on slabs or frames as per manufacturer’s instructions, incorporating the required clearances and anti-vibration mounts.

**NOISE BARRIERS**

Existing barriers such as fences and garden walls can be used to effectively screen noise from a neighbouring property. It is important to make sure that any noise barrier blocks the line of sight of the air conditioner is of solid construction, and does not contain any holes or gaps.

**ACOUSTIC BARRIERS**

Acoustic barriers can be a cost-effective option, but must block the line of sight to the affected neighbours, and be located away from multiple reflective surfaces. Any barriers must be constructed in accordance with manufacturer specifications for unit ventilation to avoid damage to the outdoor unit.

**AIR CONDITIONING ENCLOSURES**

Check with the manufacturer of your air conditioner to see whether they have any purpose-designed noise enclosures suitable for their equipment. However, it is important when enclosing air conditioning units that you check the manufacturers’ specifications for ventilation, to avoid damage to the outdoor unit and voiding of the warranty.

Enclosures can be expensive and a guarantee from the installer on the expected noise reduction and final noise levels should be provided.

**SOUND BLANKETS**

Sound blankets or socks are applied to the compressor to reduce the operating noise. They may also reduce the capacity or performance of the system, however, and manufacturers should be consulted.

**ADDRESSING NOISE FROM AN EXISTING SYSTEM**

Where an existing air conditioning system is creating a noise nuisance, the following options are available:

- Maintenance – The unit may require maintenance that could solve or mitigate the noise problem
- Modification – Some units can be modified by the addition of a compressor sock to reduce ambient noise levels, but this may also reduce system capacity
- Noise barrier – Acoustic barriers or enclosures can be applied to the unit to reduce noise levels
- Operation – The hours of operation of the unit can be restricted during the times that are particularly noise sensitive, e.g. at night time
- Relocation – Relocation of the outdoor unit may be an option
- Replacement – If the unit is old it may be cheaper to replace the unit with a modern, quieter unit.

**MORE INFORMATION**

The information in this month’s Skills Workshop was taken from AIRAH’s Residential Air Conditioning Best Practice Guidelines, which are available free at www.airah.org.au