



Environment Protection Authority

Approved Methods for Testing Noise Emissions

Under the Protection of the Environment
Operations (Noise Control) Regulation 2026

August 2026



A vertical decorative border on the left side of the page featuring a complex Aboriginal pattern. It includes a large circular motif with a central dot and radiating lines, and a series of smaller dots arranged in a grid-like pattern below it.

Acknowledgement of Country

The NSW Environment Protection Authority acknowledges the Traditional Custodians of the land on which we live and work, honours the ancestors and the Elders both past and present and extends that respect to all Aboriginal people.

We recognise Aboriginal peoples' spiritual and cultural connection and inherent right to protect the land, waters, skies and natural resources of NSW. This connection goes deep and has since the Dreaming.

We also acknowledge our Aboriginal and Torres Strait Islander employees who are an integral part of our diverse workforce and recognise the knowledge embedded forever in Aboriginal and Torres Strait Islander custodianship of Country and culture.

Aboriginal artwork by Worimi artist Gerard Black

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1 Introduction

The Protection of the Environment Operations (Noise Control) Regulation 2026 (the Regulation) includes labelling and noise limit requirements for various articles.

Approved Methods for Testing Noise Emissions (Approved Methods – this document) specifies the test procedures to establish maximum noise levels for labelling requirements, and where appropriate, determine compliance with the prescribed noise limits for the articles defined in the Regulation.

2 Objectives

The Regulation requires specified articles to be labelled with their noise level. Requirements for the testing of noise levels for the label vary depending on the article.

Manufacturers, suppliers and importers of certain specified articles can comply with the noise labelling requirements in the Regulation by following the relevant European Union (EU) noise labelling requirements¹ or the requirements in this document.

Where specified, noise labels must display noise levels in terms of the sound power level (L_w). Approved Methods provides a correction factor to convert a sound pressure level (L_p) to a sound power level.

3 Standards and measurements

1. In this Approved Methods:

- a. AS 1055.1 means: Australian Standard 1055: 2018 *Acoustics – Description and measurement of environmental noise – General procedures* as amended or replaced from time to time.
- b. IEC 61672 means: International Electrotechnical Committee IEC 61672 –2019 *Electroacoustics – Sound level meters (Parts 1 to 3)* as amended or replaced from time to time.
- c. AS 3534 means: Australian Standard 3534 – 1988 *Acoustics – Methods for measurement of airborne noise emitted by powered lawnmowers, edge and brush cutters and string trimmers*.
- d. The European Union procedures mean: Directive 2000/14/EC of the European Parliament and of the Council of 8 May 2000 on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors.

¹ Directive 2000/14/EC of the European Parliament and of the Council of 8 May 2000 on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors.

2. A person making noise level measurements for the purposes of the Regulation is to take all reasonable precautions to ensure that the measurements are representative of the article being tested and extraneous noise does not interfere with the making of measurements.
3. The test procedures are to be carried out or supervised by a person who has the qualifications and experience necessary to carry out the method.
4. The person making the measurements of the noise level of certain articles is to make as many noise level measurements as are reasonably appropriate.

4 Measuring instruments for inspection and testing of certain articles

1. This section applies to a sound level meter that is being used to measure and determine the noise level of the articles defined in the Regulation. It does not apply to determining noise levels from shooting ranges described in Schedule 1 of the Regulation.
2. Measurements must be undertaken in accordance with the procedures described in AS 1055.1 (see 3.1a).
3. A class 1 or 2 sound level meter complying with IEC 61672 (see 3.1b) and associated equipment, including a microphone windshield, must be used.
4. The sound level meter must be set to measure A-weighted noise levels and set with the following time weighting:
 - a. set to 'fast' when measuring the noise level of a motor vehicle horn or intruder alarm, a chainsaw, or
 - b. set to 'slow' when measuring the noise level of a grass-cutting machine.
5. Noise levels must be measured in terms of the equivalent continuous sound level (L_{eq}) metric, and the duration of the measurement should be representative of the duration of typical operation of the article being tested.
6. The calibration of a sound level meter must be checked, and any necessary adjustments made, immediately before the sound level meter is used to make the noise level measurements required by this Approved Method (the pre-test check) and must be checked again immediately after making those measurements (the post-test check).
7. The calibration is to be checked by performing a field calibration, using a reference sound source. If the noise level recorded during the post-test check (after any necessary adjustments have been made) differs by more than 1 A-weighted decibel [dB(A)] from the noise level recorded during the pre-test check, then all measurements made in the intervening period must be disregarded.
8. The person making the noise level measurements is to take all reasonable precautions to ensure that extraneous noise does not interfere with the making of measurements required by this section.
9. If the noise levels recorded during the pre-test and post-test checks (when the article whose noise level is being measured is not operating) are not each 10 dB(A) or more below the lowest maximum noise level reading observed when making those noise level measurements, then all measurements made in the intervening period may be disregarded.

5 Testing procedures

5.1 Testing procedures for motor vehicle horns and intruder alarms

5.1.1 Definitions

In this section:

- a. 'alarm' means a motor vehicle intruder alarm as defined in the Regulation
- b. 'horn' means a motor vehicle horn as defined in the Regulation
- c. 'test site' means the site at which the noise level of a horn or an alarm is measured, or the noise emission characteristics of an alarm are recorded

5.1.2 Determining the noise level

The noise level of a horn or an alarm is the greatest noise level reading obtained from the noise level measurements made of the horn or alarm. If that reading is not a whole number of decibels, it must be rounded down to the next lower whole number of decibels.

5.1.3 Instruments for recording noise

A recording device and/or software may be used in conjunction with the sound level meter to measure and acquire supplementary data on noise from a horn or alarm.

5.1.4 Determining the character of noise emitted

The frequency characteristics and the repeat rate of emitted sound may be determined by:

- a. readings from a class 1 sound level meter capable of measuring sound level variations over time, or
- b. post-processing data recordings of noise emitted by an alarm under test.

5.1.5 Operation of horn or alarm

A horn or an alarm under test:

- a. must, as far as practicable, be directed towards the microphone, and
- b. must be operated by means of a power supply that complies, as far as practicable, with the power supply by means of which the manufacturer of the horn or alarm recommends it to be operated, and
- c. must be operated:
 - (i) in the case of a horn, for periods of not less than 5 seconds each in duration, and
 - (ii) in the case of an alarm, for periods of not less than 15 seconds each in duration.

5.1.6 Alarms that are not attached to a motor vehicle

This section applies to an alarm that is not attached to a motor vehicle.

1. The test site:
 - a. must consist of an area having its perimeter at least 3 metres from any part of the horn or alarm under test, and
 - b. must be in the open air, and
 - c. must be covered in grass no more than 80 millimetres high or with concrete, asphalt or any other material that is not less acoustically reflective.
2. That part of the alarm under test that emits noise:
 - a. must be mounted firmly on a stand, placed in the centre of the test site, that has a mass of not less than 30 kilograms, or 10 times the mass of the alarm, whichever is the greater, and
 - b. must, as far as practicable, be attached to the stand by means of the fittings recommended by the manufacturer, and
 - c. must be placed at a height of not less than 1.2 metres above the ground, and
 - d. must be placed, as far as practicable, vertically beneath the microphone, and
 - e. must be directed towards that microphone.
3. The microphone shall be placed in such position as the person making the measurements or recordings considers appropriate, but must not be placed:
 - a. at a height of less than 3.2 metres above the ground, or
 - b. at a distance of less than 2 metres from the alarm under test.
4. The microphone must face towards and have its nominal axis of maximum sensitivity (as indicated by the manufacturer of the microphone) directed towards the part of the horn or alarm under test that emits noise.

5.1.7 Motor vehicle horns and intruder alarms that are attached to a motor vehicle

This section applies to a horn or alarm that is attached to a motor vehicle.

1. The test site:
 - a. must be in the open air, or
 - b. must be beneath:
 - (i) an open-sided canopy, or
 - (ii) a canopy supported by one wall (where that wall does not extend for more than 25% of the perimeter of the canopy), if no part of the canopy or its supports is within 3 metres of the horn or alarm under test or of the microphone used in conjunction with the measurement.
2. The microphone must be placed in such position as the person making the measurements or recordings considers appropriate, but must not be placed:
 - a. at a distance of less than 1.2 metres from the front of the vehicle, or

- b. at a distance of less than 200 millimetres from the ground.
 - 3. The microphone must face towards and have its nominal axis of maximum sensitivity (as indicated by the manufacturer of the microphone) directed towards the part of the horn or alarm under test that emits noise.
-

5.2 Testing procedures for grass-cutting machines

1. The maximum noise level of grass-cutting machines to be displayed on a noise label may be determined using any of the following procedures:
 - a. in accordance with the test procedures in AS 3534 (see 3.1c)
 - b. in accordance with the European Union procedures (see 3.1d).
2. Where the testing procedures result is derived as a sound pressure level (LpA) at 7.5 metres, it should be converted to a sound power level (LwA) for the purposes of determining the maximum noise limit of grass-cutting machines by:

$$LwA = LpA + 25 \text{ dB(A)}.$$

5.3 Testing procedures for chainsaws

The maximum noise level of chainsaws to be displayed on a noise label may be determined using any of the following procedures:

- a. in accordance with the test procedures in this section
- b. in accordance with the European Union testing procedures for outdoor equipment (see 3.1d).

5.3.1 Site requirements

1. The site at which the noise level of a chainsaw is measured:
 - a. must have its perimeter at least 30 metres from any part of the chainsaw under test, and
 - b. must be in the open air, and
 - c. must be covered in grass not more than 80 millimetres high or with concrete, asphalt or any other material that is not less acoustically reflective or with a mixture of those coverings.
2. The measurements must be made at each of the positions marked A, B, C and D in Figure 1.

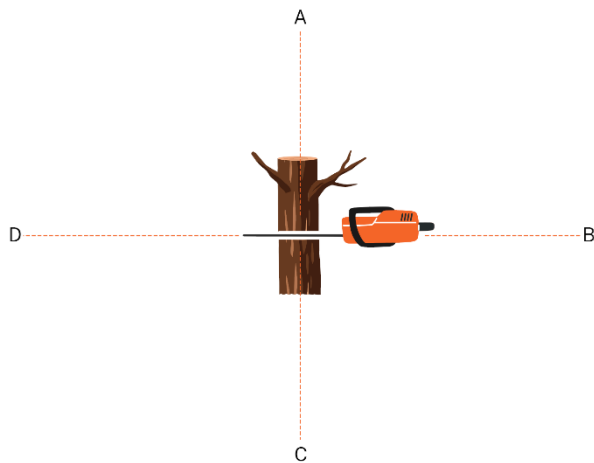


Figure 1: Typical test-site layout and microphone positions: chainsaws (plan view)

5.3.2 Position of microphone

1. The microphone used to measure the noise level of a chainsaw:
 - a. must be placed at a height of 1.5 metres (± 0.1 metres) above the ground, and
 - b. must be placed at a distance of 7.5 metres (± 0.2 metres) from the nearest point of the motor of the chainsaw under test to the microphone, and
 - c. must face towards the motor of the chainsaw, and
 - d. must have its nominal axis of maximum sensitivity (as indicated by the manufacturer of the microphone) directed towards the motor of the chainsaw.
2. Figure 2 shows the position of the microphone relative to the noise source.

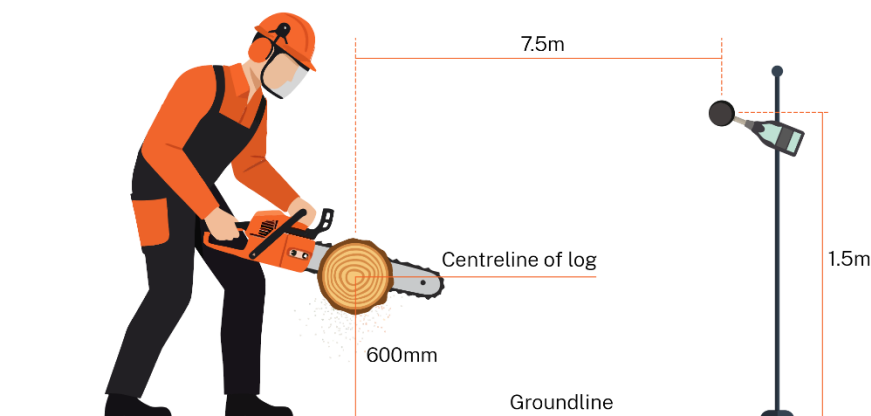


Figure 2: Typical test-site layout and microphone positions: chainsaws (side view)

5.3.3 Operation of chainsaw during measurement

1. Noise measurements must be taken while the chainsaw is cutting a log.
2. The noise level measurement must be taken at the engine speed that corresponds to the manufacturer's stated maximum power rating.

3. Immediately before the noise level of a chainsaw is measured, the motor of the chainsaw must be operated for not less than 5 minutes.
4. The position of the log and chainsaw during cutting must be as shown in Figure 2 in section 5.3.2.
5. When the noise level of a chainsaw is being measured:
 - a. the chainsaw must be held in a horizontal position by the operator and operated in a manner appropriate to normal cross-cutting, and
 - b. the guide bar must be fed into the log and the load applied so that the engine speed is the same as, or within 300 revolutions per minute of, the speed at which maximum power is developed according to the manufacturer's specification, and
 - c. the slices of timber cut must not be more than 25 millimetres thick, and
 - d. full throttle must be maintained during the cutting operation.

5.3.4 Determining the noise level

1. The maximum noise level (L_{pA}) of a chainsaw is to be the average of the greatest noise level readings obtained from the positions A, B, C and D (shown in Figure 1 in section 5.3.1), as calculated in accordance with this section. If the average reading is not a whole number of decibels, it must be rounded down to the next lower whole number of decibels.
2. An A-weighted sound pressure level must be calculated from the measured values of the A-weighted sound pressure levels (L_{pAi}) from the following equation:

$$L_{pA} = \frac{10 \log_{10}}{N} \sum_{i=1}^N 10^{0.1 L_{pAi}}$$

Where:

L_{pA} is the A-weighted sound pressure level

L_{pAi} is the A-weighted sound pressure level at the i 'th measured position, in decibels

N is the total number of measured points.

3. If the range of values of L_{pAi} does not exceed 5 dB(A), the A-weighted sound pressure level is to be the arithmetical mean of those values.
4. Where the testing procedures result is derived as a sound pressure level at 7.5 metres, it should be converted to a sound power level (L_{wA}) for the purposes of determining the maximum noise level of a chainsaw by:
 $L_{wA} = L_{pA} + 25 \text{ dB(A)}.$

5.4 Testing procedures for new mobile air compressors

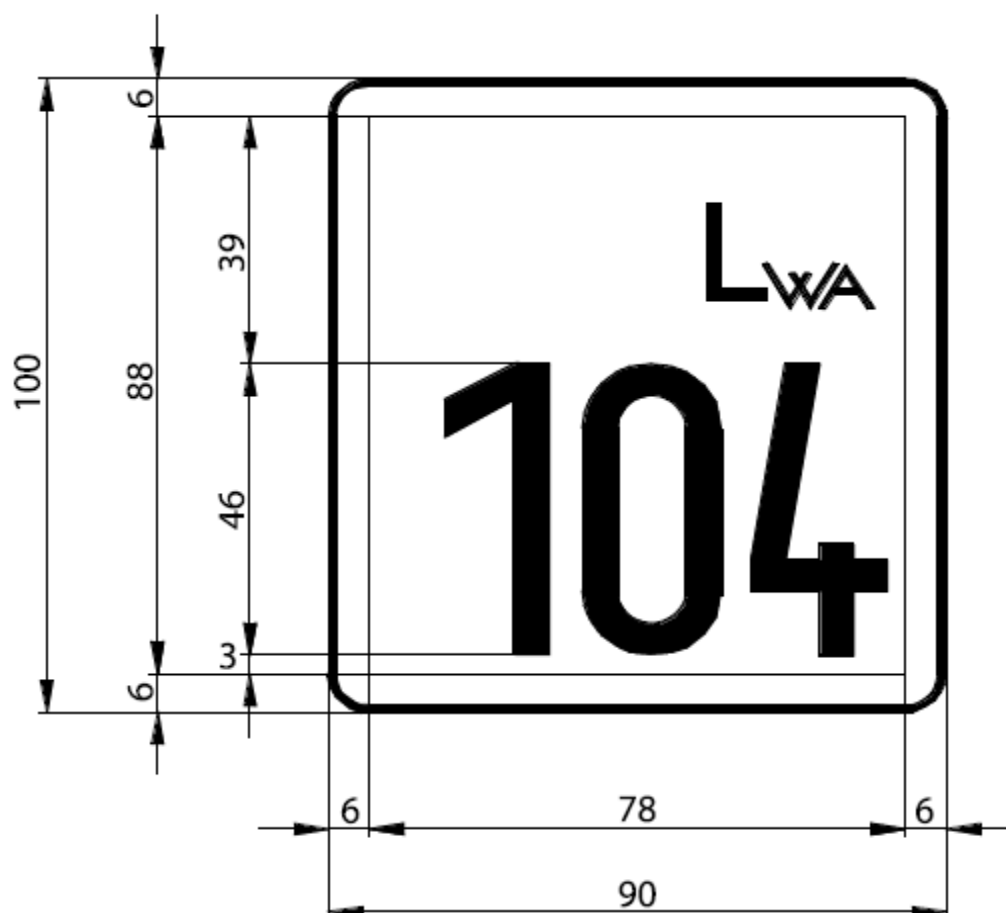
The maximum noise level of new mobile air compressors is to be determined using the test procedure set out in the AS 2221 Part 1 1979 – Engineering Method for Measurement of Airborne Sound Emitted by Compressor/Primeover Units Intended for Outdoor Use.

6 Noise labelling

1. A person cannot sell the following articles without attaching a label with the sound power level. The label can either be an approved noise label set out in section 7 or a label that accords with the EU requirements.
 - a. lawn mowers, including a ride-on mower with a cutting width below 950 millimetres
 - b. edge-trimmer
 - c. string trimmers
 - d. brush cutters
 - e. other grass-cutting machines with a cutting width below 950 mm
 - f. chainsaws
 - g. mobile air compressors
2. The Regulation:
 - a. allows the use of European Union (EU) testing, labelling and limit requirements for the following gardening equipment –
 - (i) grass-cutting machines (as defined in the Regulation)
 - (i) chainsaws
 - b. deems that the above articles, when tested and labelled in accordance with EU requirements, comply with the Regulation and noting that where limits apply, these are to be expressed in terms of a sound power level
 - c. requires noise labelling specifying the sound power level.
3. Where the testing procedures for articles referenced within this Approved Method document results in a noise level expressed as a sound pressure level (LpA) at 7.5 metres, it may be converted to a sound power level (LwA) for the purposes of determining compliance with the prescribed noise limit and/or for the purpose of noise labelling by:
$$LwA = LpA + 25 \text{ dB(A)}.$$
4. European Union testing, labelling and limit requirements are defined in the Regulation:
 - a. *Directive 2000/14/EC of the European Parliament and of the Council of 8 May 2000 on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors.*

7 Noise labelling requirements

This is the approved noise label for the purpose of sections 45, 46 and 50 of the Regulation.





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