

NOISE

The Occupational Health and Safety Regulation requires employers to ensure that no person is exposed to noise levels that exceed an 8 hour equivalent of 85dB(A) or peak at more than 140 dB (C). The Code of Practice for Noise Management requires that personal protective hearing devices are provided if it is not possible to eliminate the risk of noise exposure or reduce the noise exposure to a suitable level.

The Risks

Sound pressure is measured in decibels (dB). The decibel scale is logarithmic, an increase of 3dB representing approximately a doubling of the sound pressure level. Studies in the US have identified noise levels during rock concerts in the range of 90 dB(A) to 120dB(A) and symphony orchestra concerts from 80dB(A) to 110 dB(A). An American study taken over seven Broadway shows indicated that only one of the productions had sound levels below the American exposure standard of 90dB(A). As an example, 100dB is the level of loudness for a motorcycle or a woodsaw, at close range. At 140dB, even with hearing protection, one can suffer permanent hearing damage. Acoustic trauma (ie rupture of the eardrum) can occur at sound pressure levels greater than 140dB.

In the performing arts and cultural events, there is frequent exposure to industrial and/or environmental noise: bump-in and-out activities; building and workshop activities; and working in naturally noisy environments are all common occurrences. Additionally, personnel and audiences are frequently exposed to high, potentially dangerous audio levels in rehearsal and/or performance conditions.

It's important to make sure that staff, volunteers, performers and the general public are protected wherever possible from the effects of prolonged exposure to loud noises – this exposure can be detrimental to a person's hearing in both the short and long term.

Also worth noting: noisy environments and workplaces can be a nuisance to nearby residences, businesses and other stakeholders. This can be a threat to the viability of creative undertakings, due to the legislated right of people to enjoy a certain degree of peace and quiet in these environments.

It should be remembered that in these circumstances, a producer or artistic designer of a

theatrical performance or musical event also has a responsibility for exposed persons to the extent that they have management or control over the sound pressure level for that event. Various other contractual relationships may occur within the industry and these employers owe a similar duty of care to their own employees.

The legislation also applies to:

- a licensee of a licensed premises where musical performances take place or bands are engaged;
- theatre management or drama company in a venue where a musical production is being staged;
- management of a venue in which concerts are given;
- a caterer employing food service staff at a venue; or
- any other person who employs someone under a contract of employment or apprenticeship.

Managing and Reducing the Risks

There is a range of simple measures, which are easy to implement, in order to reduce the risks associated with noisy environments.

- Venues and companies should engage professional suppliers and staff to design, install and test audio systems to ensure they meet legislated safe levels of audio output;
- Companies should use dB monitoring (there are both standalone devices and quite good iPhone apps (such as Decibel Meter Pro) which can measure the audio levels at various positions, such as the front row of the audience, a nearby residence or business, or on stage. This measuring can then assist in reducing audio output to a safe level, and output levels measured and recorded in a regular fashion so as to have access to the data should a dispute arise regarding noise levels at any point during the project/event or post-event.
- Staff should be utilizing PPE (personal protective equipment) in noisy environments. This can include disposable earplugs, custom molded earplugs (great for use in ongoing noisy environments such as shows with intentionally loud soundtracks) or earmuffs (preferably those with a dB rating). If the performance is designed to have an excessively loud or dynamic soundtrack, the company/promoter should arrange to supply free disposable earplugs to patrons upon entry, and warning signage regarding the noise levels should be

posted at both the ticket point of sale (both online and physical) and at the entry to the venue.

- Stakeholder notification letters should be released to all nearby venues, businesses and residences (mainly for non-standard performance venues – at regular venues, neighboring premises will be aware of the ongoing activities of the venue) notifying the venue of the times/dates and activities taking place, and providing contact details for the company should any stakeholders require further information about the project/event
- The sound designer should be intimately involved in finding ways to create a dynamic, affecting soundtrack that does not include unsafe sound levels. This element should be considered from the very beginning of creative discussions and development.

Sample Controls

HAZARD	Noise				
INHERENT RISKS	Noise-induced hearing loss or injury; excessive noise resulting in unpleasant environment				
INHERENT RISK RATING	4D	TOLERATION LEVEL	MEDIUM	ACCEPTABLE RISK?	NO
CONTROLS TO BE IMPLEMENTED TO REDUCE RISKS	<ul style="list-style-type: none"> • Ensure that environmental sound-level testing is undertaken, if required, at the venue to ensure that levels do not exceed 65-72 dB (averaged) at residences and businesses adjacent to the performance areas • Ensure that hearing protection is worn by staff should noise exceed acceptable levels (94 dB) or should prolonged amplified noise (between 72 and 94 dB) be employed in the venue • Staff to utilise a dB reader to monitor and record sound levels throughout the performance, and these recording notes to be archived, should records regarding ambient and performance sound levels be required in the future 				
RESIDUAL RISK RATING	2D	TOLERATION LEVEL	LOW	ACCEPTABLE RISK?	YES
RESPONSIBILITY	<ul style="list-style-type: none"> • The Event Team • Staff and Contractors • Venue 				

This document is current as at June 2019 and provides a summary of information from planning experts, along with relevant government and statutory bodies.

For further information and to ensure you are working to the most relevant and recent legislation and/or guidelines, visit:

- [City of Maribyrnong](#)
- [Worksafe](#)
- [Victorian Department of Health](#)
- [EPA - Noise](#)
- [Safe Work Australia - Noise](#)