

Airborne Ultrasonics Risk Assessment

Business Name:	ABN:	
Business Address:		
Contact Person:	Phone:	Email:

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THE PROJECT

Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.

Full Name:		
Signature:	Title:	Date:

CLIENT OR PRINCIPAL CONTRACTOR DETAILS

Client:	SCOPE OF WORKS
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX									
LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION	HIERARCHY OF CONTROLS	
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE			Elimination Remove the hazard.	
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	Substitution Replace the hazard.	
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Review before work starts.	Isolation Isolate People from the hazard	
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	2M MODERATE	Ensure control measures in place.	Engineering Isolate the hazard	
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1L LOW	Monitor and keep records.	Administrative Change	
								PPE	

Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. Eliminate the hazard or redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or higher-level authorisation is required.
3H	Review and approve additional controls before task starts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures. Monitor and keep records.

Consequence Scale:

Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	No injury	no schedule impact	Deviation caught and corrected on site

Notes on Hierarchy of Controls:

Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. Substitute
3. Isolate
4. Engineering
5. Administrative
6. PPE

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

aligned with Safe Work Australia's Managing the risk of fatigue at work (2023) and ISO 45001:2018 clauses 6–8.

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. Preparation	Exposure to high sound levels, Inadequate PPE	3H	<ul style="list-style-type: none"> - Conduct a site inspection to determine existing ultrasonic noise levels. - Provide training on the use of PPE specific to ultrasonics. - Establish work area boundaries to restrict access to ultrasonic sources. - Create a checklist for PPE compliance. - Regularly update staff on new risks and safety protocols. - Obtain manufacturer's information on ultrasonic equipment for safe use. - Monitor noise levels using audiometric testing equipment. - Offer health surveillance for early detection of hearing issues. - Assess the need for isolation enclosure for noisy equipment. - Develop emergency procedures for equipment malfunction impacting sound levels. 	2M
2. Equipment Setup	Incorrect equipment setup - Electrical hazards	3H	<ul style="list-style-type: none"> - Verify that personnel are trained in setting up specific ultrasonic equipment. - Inspect equipment for damage before each use. - Ensure that electrical connections are secure and compliant. - Use lockout/tagout procedures to control equipment during setup. - Provide insulated tools to reduce electrocution risks. - Maintain clear signage around electrical risk areas. - Confirm equipment calibration against manufacturer specifications. - Have a qualified technician verify setup before operation commencement. - Provide a setup checklist to ensure all steps are followed accurately. - Conduct routine inspections of cables and connections for wear and tear. 	2M
3. Operation	Overexposure to ultrasonic emissions, Mechanical failures	4A	<ul style="list-style-type: none"> - Use hearing protection that is rated for ultrasonics. - Establish time limits for exposure, ensuring workers take regular breaks. - Implement a buddy system to monitor workers for overexposure symptoms. - Continuously monitor ultrasonic emission levels with calibrated sensors. - Perform regular maintenance checks to prevent mechanical failure. - Adhere to manufacturer's guidelines for safe operational parameters. - Train operators to immediately report any unusual equipment behaviour. - Provide first aid training for exposure-related health issues. 	2M

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			<ul style="list-style-type: none"> - Isolate faulty equipment promptly to prevent accidents. - Ensure communication devices are functioning for emergency contact. 	
4. Maintenance	Exposure to high noise levels during maintenance, Slips, trips, and falls	3H	<ul style="list-style-type: none"> - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] 	2M
5. Emergency Response	Delayed response to ultrasonic overexposure incidents, Inadequate evacuation procedures	4A	<ul style="list-style-type: none"> - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] - [REDACTED] 	2M
6. Decommissioning	Residual ultrasonic emissions, Equipment dismantling risks	3H	<ul style="list-style-type: none"> - [REDACTED] - [REDACTED] - [REDACTED] 	1L

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7. Risk Communication	Ineffective communication of ultrasonic risks, Lack of understanding of risk controls	3H		1L
8. Training Assessment	Inadequate training coverage, Lack of refresher courses	3H		1L

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9. Monitoring and Review	Failure to identify rising risks, Neglecting changes in system operations	4A		2M
10. Documentation and Reporting	Incomplete risk assessment documentation, Delays in incident reporting	3H		1L
11. Equipment Procurement	Introduction of non-compliant ultrasonic devices, Lack of supplier safety documentation	4A		2M

[illegible]

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14. Waste Management	Improper disposal of hazardous materials, Contamination from waste handling	3H		1L
15. Contractor Management	Uninformed external personnel, Unsupervised contractor	4A		2M

EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES IF ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory

Work Health and Safety Act 2011

Work Health and Safety Regulations 2011

Legislation QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws>

Codes of Practice QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice>

Legislation ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations>

Codes of Practice ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice>

Victoria

Occupational Health and Safety Act 2004

Occupational Health and Safety Regulations 2017

Legislation VIC: <https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations>

Codes of Practice VIC: <https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice>

New South Wales

Work Health and Safety Act 2011

Work Health and Safety Regulations 2017

Legislation NSW: <https://www.safework.nsw.gov.au/legal-obligations/legislation>

Codes of Practice NSW: <https://www.safework.nsw.gov.au/resource-library/list-codes-of-practice>

Western Australia

Work Health and Safety Act 2020

Work Health and Safety Regulations 2022

Legislation Western Australia: <https://www.commerce.wa.gov.au/worksafe/legislation>

Codes of Practice WA: <https://www.commerce.wa.gov.au/worksafe/codes-practice>

Northern Territory

Work Health and Safety (National Uniform Legislation) Act 2011

Work Health and Safety (National Uniform Legislation) Regulations 2011

Legislation NT: <https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws>

Codes of Practice NT: <https://worksafe.nt.gov.au/laws-and-compliance/codes-of-practice>

Safe Work Australia Links

Law and Regulation (All States): <https://www.safeworkaustralia.gov.au/law-and-regulation>

Model Codes of Practice: <https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice>

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work

South Australia

Work Health and Safety Act 2012 (SA)

Work Health and Safety Regulations 2012 (SA)

Legislation for SA: <https://www.safework.sa.gov.au/resources/legislation>

Codes of Practice for SA: <https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs>

Tasmania

Work Health and Safety Act 2012

Work Health and Safety (Transitional and Consequential Provisions) Act 2012

Work Health and Safety Regulations 2012

Work Health and Safety (Transitional) Regulations 2012

Legislation for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations>

Codes of Practice for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice>

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.