Hazardous Dust, Fumes and Respiratory Hazards			
Business Name:		ABN:	
Business Address:			
Contact Person:	Phone:	Email:	

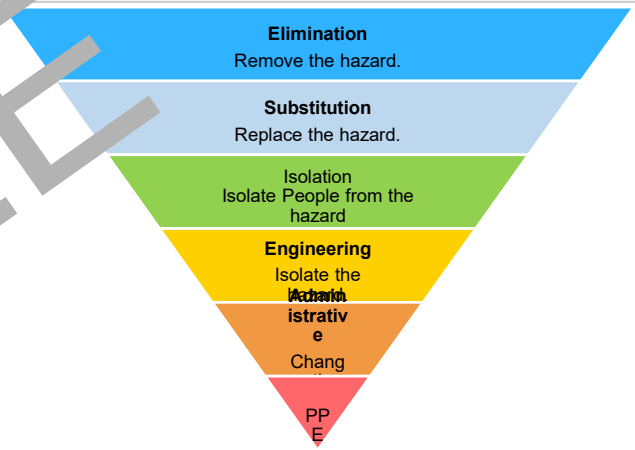
THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT		
Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.		
Full Name:		
Signature:	Title:	Date:

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
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. 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. WHS Governance, Duties and Legal Compliance	• Lack of clear WHS governance framework for managing hazardous dusts, fumes and airborne contaminants • PCBU and Officers unaware of primary duties under WHS Act 2011 and WHS Regulations (e.g. Part 7.1 Hazardous chemicals, airborne contaminants, asbestos and lead) • No documented respiratory hazard management policy or it is not endorsed by senior management • Inadequate allocation of resources (people, budget, time) to manage airborne contaminants and inhalation hazards • Failure to apply hierarchy of control to dust, fumes and vapours systematically across the organisation • Non-compliance with exposure standards for airborne contaminants (Safe Work Australia workplace exposure standards) • Poor consultation mechanisms with workers and HSRs regarding airborne dust and fume risk • No formal process to review legal and standards changes (e.g. silica, welding fume, diesel particulate, lead, asbestos, fibreglass)	4A	• Establish a WHS governance framework that explicitly includes management of hazardous dust, fumes and respiratory hazards, endorsed by Officers and the Board • Define and document roles, responsibilities and accountabilities for PCBUs, Officers, managers, supervisors and workers in relation to airborne contaminants and inhalation risks • Develop a Respiratory Hazard Management Policy aligned with the WHS Act 2011, WHS Regulations and relevant Codes of Practice (e.g. Managing Risks of Hazardous Chemicals, Welding, Managing the Risk of Airborne Contaminants, Managing the Risk of Silica, Asbestos, Lead) • Implement a legal and standards register specifically referencing airborne dust, diesel exhaust, carbon monoxide, welding fume, chemical fumes, fibreglass, lead, asbestos and other respiratory hazards, with scheduled reviews and updates • Require officers to receive due diligence training covering airborne contaminant risks, exposure standards, and enforcement consequences for non-compliance • Embed the hierarchy of control into organisational policies and procedures so elimination, substitution, isolation and engineering controls are prioritised over PPE for fume-intensive and dust-generating tasks • Integrate airborne contaminant management into the organisation's WHS objectives, KPIs and annual WHS plan • Consult with workers and HSRs on policies and procedures for management of dust, fumes, vapours and polluted environments and document outcomes • Undertake periodic independent WHS audits focused on airborne contaminant management and compliance with exposure standards and regulatory notices • Ensure any enforcement action (improvement notices, prohibition notices, infringement notices) relating to airborne contaminants is captured in a corrective action system with senior oversight	3H
2. Hazard Identification and Systematic Risk Assessment	• No formal process for identifying tasks with high fume exposure risk such as welding, cutting, grinding, hot work, diesel plant operation or chemical application • Failure to identify processes that generate harmful airborne dusts including silica, metal dusts, wood dust, lead, asbestos or fibreglass fibres • Inadequate identification of diesel fume exposure risks in workshops, tunnels, enclosed car parks and loading areas	4A	• Implement a corporate procedure for systematic identification of dust, fume and vapour generating activities across all sites and projects, including maintenance, shutdowns and construction • Maintain a central respiratory hazard register listing all processes with potential airborne contaminant exposure, including airborne dust inhalation, fumes from hot work, diesel exhaust, carbon monoxide, chemical vapours and fibreglass handling • Require formal WHS risk assessments for work in fume-intensive environments, polluted environments, and areas with potential for airborne pollutant exposure or inhalation of toxic emissions from machinery • Use structured tools (e.g. task analysis, walkthrough inspections, air monitoring reports, incident data) to identify inhalation hazards and potential respiratory irritant exposures • Ensure that procurement, change management and project planning processes trigger a review of respiratory hazards when new plant, substances or processes are introduced	3H

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	• Unrecognised risk of carbon monoxide accumulation where fuel-burning equipment is used in partially enclosed or poorly ventilated spaces • Lack of assessment of work in polluted environments or near exhaust fumes (e.g. loading bays, trafficked roadways, logistics yards) • Incomplete recognition of lead abatement activities, lead paint removal and contaminated dust handling tasks • Respiratory irritants and vapours from paints, solvents, adhesives and cleaning agents not incorporated into the risk register • One-off or infrequent tasks (e.g. specialised burn-off or cutting harmful materials) not captured in formal risk assessments		• Establish a process to flag non-routine activities (e.g. burn-off, lead abatement procedures, major clean-ups) for specific dust and fume risk assessment before work commences • Integrate consideration of cross-contamination pathways (settled dust resuspension, transfer on clothing, shared ventilation systems) into hazard identification • Review and update respiratory hazard identification at least annually and after any significant change, incident, complaint or monitoring exceedance	
3. Design, Layout and Engineering Controls for Ventilation	• Workplaces, workshops and process areas designed without adequate general or local exhaust ventilation for airborne dusts, fumes and vapours • Reliance on natural ventilation in fume-intensive environments or polluted environments where wind conditions are variable • No engineered capture systems at the source for welding fumes, cutting fumes, chemical fumes or airborne dust generation • Poorly designed or undersized ventilation systems in spray booths, enclosed plant rooms and chemical application areas • Inadequate isolation between contaminated areas and clean areas, leading to spread of harmful dusts and airborne pollutants • Inability to rapidly purge areas of fumes in the event of accidental over-application, spill, or excessive exhaust emissions	4A	• Incorporate ventilation and airborne contaminant control requirements at the design stage for all new facilities, production lines and refurbishments, using competent occupational hygienists or mechanical engineers • Install local exhaust ventilation (LEV) at the source for welding, cutting, brazing, soldering, grinding and any process that produces fumes, with hoods positioned close to the emission point • Provide purpose-designed extraction systems and spray booths for chemical application, painting, coating and solvent-based processes, compliant with relevant Australian Standards • Ensure dedicated exhaust systems for diesel plant, generators and vehicles operating indoors or in semi-enclosed spaces, with discharge points located away from air intakes and occupied areas • Design and maintain general dilution ventilation systems to achieve air changes and flow patterns that minimise worker exposure and prevent build-up of carbon monoxide, diesel particulates and other airborne pollutants • Use physical isolation (enclosures, segregated rooms, curtaining, negative pressure zones) to separate high-dust or high-fume areas from offices, amenities and low-risk workspaces • Specify and maintain filtration and scrubbing systems where required (e.g. HEPA for lung-respirable airborne fibre control, filters for diesel particulates or solvent vapours) • Include manual and automatic purge modes for confined or enclosed areas where chemical fumes, diesel fumes or carbon monoxide could accumulate, with interlocks where practicable • Develop engineering change management procedures so modifications to plant, ducts, hoods or building layout are reviewed by a competent person for impacts on fume and dust control	2M

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	• Lack of consideration for ventilation when planning work near exhaust fumes or in semi-enclosed loading docks • Older buildings or temporary structures without modern ventilation or air filtration suitable for respirable dusts and fumes		• Document design criteria, operating parameters and performance requirements for all ventilation systems and make them available to facility managers and maintenance teams	
4. Plant, Equipment and Process Control	• Use of high-emission plant and equipment without integrated dust or fume control technology • Inadequate controls on machinery that produces toxic emissions, combustible or irritant fumes during burn-off or hot work on harmful materials • Lack of engineered control for diesel fume exposure from forklifts, trucks, generators and other diesel-powered plant • Poorly controlled processes for handling and machining fibreglass, composites and other fibre-releasing materials • Ineffective isolation of exhaust system from work areas, resulti recirculation of exha fumes and airborne pollutants • No standardisatio parameters (e.g. feed ates, temperatures, ventilation set-points) at influence fume and dust generati • Inadequate safeguards on chemical dosing, mixing and application systems leading to excessive vapour and fume release • Plant modifications and temporary setups (e.g. portable welding bays, temporary diesel generators) introduced without adequate fume control planning	4A	[redacted]	2M
5. Hazardous Substances, Chemicals and Material Substitution	• Continued use of high-toxicity chemicals, solvents, paints or adhesives that release significant harmful fumes and vapours • Use of products with inadequate or outdated Safety Data Sheets (SDS),	4A	[redacted]	2M

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	leading to poor understanding of inhalation hazards and respiratory irritants • Failure to assess fibreglass, resins, hardeners, isocyanates and other respiratory sensitising agents • Reliance on hazardous materials that generate toxic fumes when heated, burned off or cut, such as lead-based paints, plastics or coated metals • Inadequate review of lead abatement procedures and materials before commencement, leading to uncontrolled airborne lead dust generation • Poor labelling and storage systems for chemicals used in fume-intensive processes, increasing the risk of misuse and over-application • No structured program to identify safer substitutes or less volatile products to reduce fume and vapour exposure		[redacted]	
6. Maintenance, Inspection and Air Monitoring Programs	• Ventilation, extraction and filtration systems not maintained, leading to loss of control over airborne dust levels • No scheduled inspection or testing of local exhaust ventilation, spray booths or on-tool extraction • Lack of routine air monitoring for respirable dusts, lung-respirable airborne fibres, diesel particulates and welding fumes • Failure to identify deterioration in plant performance, resulting in increased toxic fume exposure or carbon monoxide accumulation • Inadequate response to worker complaints about odours, irritant fumes or respiratory symptoms • Calibration and maintenance of gas detection equipment (e.g. carbon monoxide monitors) not carried out	4A	[redacted]	2M

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	according to manufacturer's recommendations • Filters, ducting and hoods obstructed, damaged or modified, reducing effectiveness in controlling airborne contaminants		[redacted]	
7. Respiratory Protective Equipment (RPE) Program Management	• Over-reliance on RPE instead of higher-order controls for dust, fumes and vapours • No formal RPE program to ensure correct selection, fit, use, cleaning and replacement • Workers issued with respirators that are unsuitable for the specific inhalation hazards (e.g. wrong filter type for toxic fumes or dusts) • Lack of quantitative or qualitative fit testing, leading to ineffective protection in fume-intensive environments or when working in polluted environments • Inadequate supervision and enforcement of RPE use during fume exposure risk tasks and lead abatement procedures • Failure to manage facial hair, medical contraindications and fitness to wear tight-fitting respirators • RPE not stored, cleaned or maintained correctly, increasing contamination and reducing performance		[redacted]	2M
8. Competency, Training and Awareness	• Supervisors and workers lacking understanding of inhalation hazards, exposure pathways and health effects (acute and chronic) • No training on recognising early signs of over-exposure to fumes, respiratory irritants or carbon monoxide	3H	[redacted]	2M

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SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Inadequate competency for tasks such as chemical application, welding, cutting harmful materials or lead abatement • Failure to instruct workers on use and limitations of ventilation systems and local exhaust ventilation • Poor understanding of safe work procedures for coping with harmful dust exposure and dealing with airborne contaminants • Temporary workers, contractors and labour hire not properly inducted into site-specific dust and fume controls • Language, literacy or cultural barriers resulting in critical information about respiratory hazards not being understood		[redacted]	
9. Planning, Scheduling and Work Organisation	• High-fume or high-dust tasks scheduled concurrently with other activities, increasing the number of people exposed • Inadequate planning of hot work, burn-off, cutting or welding tasks in relation to ventilation, weather and occupancy • Work in fume-intensive environments or polluted environments carried out without considering duration, frequency and recovery times • Poor coordination of diesel-powered plant movements in semi-enclosed or underground areas, leading to diesel fume build-up • No restrictions on working times or job rotation for tasks with significant inhalation hazards • Failure to plan for ventilation requirements during chemical	3H	[redacted]	2M

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	application in confined or poorly ventilated areas • Unmanaged overlapping of processes such as painting, solvent cleaning and welding in the same space		[redacted]	
10. Contractor, Supplier and Labour Hire Management	• Contractors performing high-risk fume and dust tasks without equivalent WHS systems to control airborne contaminants • Suppliers introducing new chemicals, materials or equipment that increase inhalation hazards without adequate consultation • Labour hire workers not adequately trained or inducted into site-specific respiratory hazard controls • Inconsistent standards for welding fume control, diesel fume management and fibreglass handling between principal contractor and subcontractor • Inadequate verification of contractor risk assessments and procedures for toxic fume exposure m[redacted]ent • Subcontractors b[redacted]assing site ventilation, extract[redacted]n and RPE requirements to sav[redacted]cost	3H	[redacted]	2M
11. Health Surveillance, Incident Reporting and Occupational Hygiene Support	• Chronic respiratory conditions (e.g. asthma, COPD, occupational lu[redacted] disease) not detected ea[redacted] due to lack of health surveillance • Under-reporting of symptoms such as coughing, shortness of breath, headaches, eye or throat irritation related to fume and dust exposure • No formal link between air monitoring results, health surveillance findings and review of controls • Inadequate investigation of incidents, near misses or complaints involving inhalation of toxic emissions from machinery or chemical fumes	3H	[redacted]	2M

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	• Limited access to occupational hygiene expertise to interpret monitoring data and advise on controls • Workers not informed of personal exposure results or health implications		[redacted]	
12. Emergency Preparedness and Incident Response for Fume and Dust Events	• Lack of preparedness for acute fume releases, dust clouds or carbon monoxide build-up events • Workers and supervisors unsure how to respond to alarm activations, visible dust clouds or strong irritant fumes • No clear criteria for area evacuation, work stoppage or escalation when ventilation systems fail or monitoring alarms activate • Inadequate arrangements with emergency services for incidents involving toxic fume exp[redacted] chemica[redacted] spills or uncontrolled [redacted]n-on • Failure to captur[redacted]essons learnt from dust and fume-rela[redacted]d incid[redacted] prevent recurrence	3H	[redacted]	2M
13. Housekeeping, Contamination Control and Waste Management	• Accumulation of settled dust on surfaces that can become airborne with movement or cleaning activities • Use of dry sweeping or compressed air that re-suspends harmful dusts and fibres, including lead-contaminated or fibreglass dust • Inadequate segregation of clean and dirty zones, leading to spread of airborne contaminants to offices, lunchrooms and change rooms	3H	[redacted]	2M

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	• Contaminated PPE and clothing transporting dusts and fibres off site or into vehicles and homes • Poorly managed waste from processes that generate hazardous dusts or fume residues		[redacted]	
14. Performance Monitoring, Review and Continuous Improvement	• WHS management system performance for respiratory hazards not measured or reviewed, leading to stagnation and drift from standards • No defined leading and lagging indicators for dust and fume control performance • Failure to act on air monitoring results, health surveillance findings or incident trends related to inhalation hazards • Infrequent review of risk assessments and control strategies as processes an legislation change • Limited involvement of workers and HSRs in reviewing effecti ss of control measures for borne contaminants	3H	[redacted]	1L

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 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

New South Wales
Work Health and Safety Act 2011
Work Health and Safety Regulations 2025
Legislation NSW: https://www.safework.nsw.gov.au/legal-obligations/legislation
Codes of Practice NSW: https://www.safework.nsw.gov.au/resource-library/list-of-codes-of-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/forms-and-resources/codes-of-practice

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.

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

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

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