Asphalt Milling Machine

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:

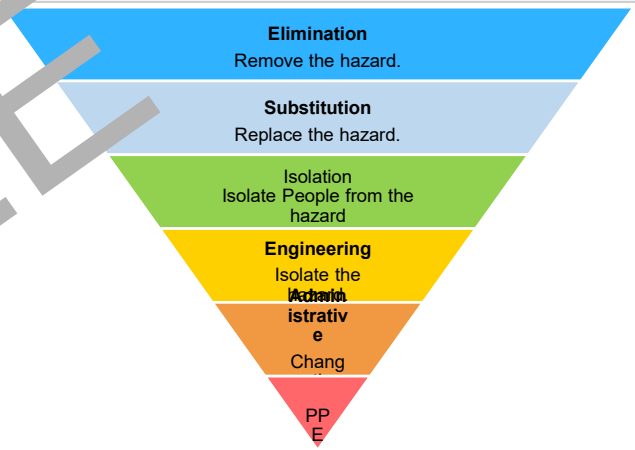
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

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. Procurement and Design Selection	• Purchase of asphalt milling machines that are not designed in accordance with relevant Australian Standards or manufacturer specifications for local conditions • Inadequate verification that plant meets WHS Act 2011 and WHS Regulation plant requirements (e.g. guarding, emergency stops, warning devices) • Lack of consideration of whole-of-life safety features (e.g. dust suppression systems, noise attenuation, vibration controls, ergonomic controls) • Failure to specify safe access/egress points, platforms, handrails and tie-off points for inspection and maintenance • Imported plant supplied without compliant documentation, manuals, or evidence of conformity • Selection of machinery with poor visibility for the operator, increasing risk of collision with people, traffic or other plant • Insufficient capacity or capability of plant for intended tasks leading to overloading, instability or misuse	High	• Establish a formal plant procurement procedure aligned with the WHS Act 2011 and WHS Regulation requirements for plant, ensuring consultation with HSRs, operators and maintenance personnel prior to purchase • Specify compliance with relevant Australian and International Standards for mobile road construction machinery, guarding, noise, vibration, ROPS/FOPS and braking systems in all purchase contracts • Require suppliers to provide documented evidence of compliance (e.g. declarations of conformity, test reports, guarding assessments, noise and vibration data, braking performance data) • Include mandatory safety features in procurement criteria such as operator presence controls, emergency stop devices accessible from operator and ground level, lockable isolation points, reversing cameras, proximity warning systems and adequate work lighting • Specify engineering controls for dust (e.g. integrated water spray systems, dust extraction or shrouding) and noise (e.g. acoustic treatment, engine enclosures) at the design and procurement stage • Ensure all new or hired milling machines are supplied with complete, English language operation and maintenance manuals, load charts, and safety instructions • Undertake a pre-acceptance inspection against a standardised commissioning checklist before plant is placed in service, documenting any non-conformances and corrective actions • Standardise the fleet where reasonably practicable to reduce operator variability and simplify training, maintenance and risk controls • Include lifecycle cost and safety performance metrics (e.g. incident history, reliability, availability of parts) in procurement decisions, not only purchase price	Medium
2. Organisational Governance and WHS Management System	• Lack of clear organisational accountability for managing risks associated with asphalt milling machines • No integrated WHS management system for plant, leading to ad hoc and inconsistent risk control implementation • Insufficient resources (time, budget, competent people) allocated to manage plant-related risks and maintenance • Poor consultation arrangements with workers and HSRs on changes to milling operations, technology or procedures • Inadequate contractor management processes when subcontractors supply or operate milling machines	High	• Define and document specific WHS responsibilities for PCBUs, officers, managers, supervisors and plant operators in relation to asphalt milling operations in line with the WHS Act 2011 due diligence obligations • Implement a certified or structured WHS management system (e.g. ISO 45001 aligned) that specifically covers plant and mobile equipment risk management processes • Establish a plant safety committee or working group to oversee risk management for milling machines, including representation from operators, maintenance, HSRs and management • Develop and enforce corporate policies for plant selection, operation, modification, hire, decommissioning and disposal, ensuring alignment with legislative requirements • Integrate milling machine risk controls into the organisation's traffic management plans, fatigue management plans, drug and alcohol policies and emergency management procedures • Implement a formal contractor management system requiring verification of contractor competence, safe systems of work, insurances and equipment compliance before engagement	Medium

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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
	• Absence of systematic monitoring and review of milling-related incidents, near misses and non-conformances • Failure to integrate milling machine risks into broader traffic management, fatigue, environmental and quality systems		• Establish a process for reporting, investigating and analysing incidents and near misses involving milling machines, using findings to update risk assessments and procedures • Schedule periodic management reviews of plant s[illegible]y performance KPIs (e.g. incidents, defects, unplanned downtime, audit findings) and allocat[illegible]esources based on identified trends • Ensure consultation mechanisms (toolbo[illegible]ks, pre-start [illegible]eetings, HSR forums) explicitly cover milling-related risks when changes to equipment, w[illegible] metho[illegible]or environments occur	
3. Risk Management, Documentation and Change Control	• No formal, documented risk assessment for asphalt milling machines at a system and management level • Risk assessments not reviewed following incidents, near misses, equipment modifications or process changes • Inadequate management of change (MOC) processes when introducing new models, technologies or control systems • Outdated or conflicting procedures and work instructions for milling operations • Poor version control of documents leading to multiple uncontrolled copies the field • Failure to adequatel[illegible]onsider interaction risks wit[illegible]djacent traffic, other plant, utilities[illegible]nd the public in risk assessments • Insufficient assessment of cumulati[illegible] exposure to noise, vibration, silica-containing dust and fume[illegible]illed asphalt	High	• Develop, imple[illegible]t and [illegible]aintai[illegible]cumented WHS risk assessments specific to asphalt milling machines tha[illegible]ddress eng[illegible]eering, [illegible]ministr[illegible]e and PPE controls and interaction with other systems • Ensure risk a[illegible]ssment[illegible]re comple[illegible]n consultation with competent operators, supervisors, maint[illegible]nce pe[illegible]nn[illegible]nd HSRs, and are readily accessible at depots and worksites • Imple[illegible]e a form[illegible] management of change procedure that must be followed whenever new milling plant is intro[illegible]ce[illegible] existing[illegible]ant is modified, or operating environments significantly change • Establi[illegible] a c[illegible]rolled document management system for all plant-related procedures, manuals, permits a[illegible]chec[illegible]ists, w[illegible] unique identifiers, revision numbers and approved sign-offs • Sche[illegible]periodic review of milling-related risk assessments (e.g. annually or after significant events) [illegible]d document outcomes and required updates • In[illegible]grate exposure assessments for noise, vibration and respirable crystalline silica into the risk [illegible]anagement process, engaging occupational hygienists where required • Ensure interaction risks are addressed through documented interface agreements between different PCBUs sharing the work area (e.g. head contractors, traffic controllers, utility providers) • Audit field activities for alignment with documented risk controls and capture gaps or good practices to inform continuous improvement of the risk management documentation	Medium
4. Training, Competency and Authorisation	• Operators and supervisors using asphalt milling machines without verified competency or relevant high-risk licences (where applicable) • Inadequate understanding of machine control systems, emergency procedures and limitations of plant • No structured induction or ongoing refresher training specific to milling machines and associated traffic management	High	[redacted]	Medium

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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
	• Supervisors unable to recognise unsafe practices or early signs of fatigue, impairment or skill gaps • Inconsistent competency standards between in-house staff and contractors • Failure to provide training on health hazards such as respirable crystalline silica, noise and whole-body vibration associated with milling • Insufficient training for spotters, ground personnel and traffic controllers working around milling machines		[redacted]	
5. Plant Registration, Commissioning and Pre-Operational Systems	• Milling machines placed into service without formal commissioning checks or verification of safety systems • Failure to register or notify relevant plant as required under WHS Regulat • Lack of standardised pre-operational inspection systems leading to undetected critical defe • Inadequate testin of emergency stops, braking sys ms and is controls before ope se • Absence of clear records demonstrating that plant has bee inspected and is safe for • Uncontrolled introduction of hired or subcontractor-owned milling plant into works without verification	High	[redacted]	Medium
6. Maintenance, Inspection and Repair Management	• Inadequate preventative maintenance programs leading to mechanical failure, loss of control or release of energy • Failure to follow manufacturer maintenance schedules for critical components such as brakes, steering, hydraulics, conveyors and cutting drums	High	[redacted]	Medium

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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
	• Poor record-keeping of inspections, repairs and part replacements hindering identification of recurring faults • Repairs undertaken by unqualified personnel or using non-approved parts and modifications • Lack of formal lockout/tagout procedures for isolation during maintenance and clearing blockages • Deferred maintenance due to production pressure, increasing likelihood of breakdowns and incidents • No systematic inspection for structural fatigue, cracks, corrosion or wear on guards and access systems		[redacted]	
7. Controls for Interaction with Traffic, Public and Other Plant	• Inadequate integration of milling operations with road traffic manageme plans and controls • Poor separation between milling machines, other mobile p workers on foot and the publi • Lack of clearly d ed and enforced exclusion zones a d mi machines, particular ng reversi loading or drum engagement • Ineffective communicati pr ols between operators, ground crews, truck drivers and traffic controllers • Insufficient lighting and visibility during night works or low-light conditions • Failure to consider adjacent utilities, structures, pedestrians, cyclists and public access points in planning • Inconsistent traffic management standards between principal contractors and subcontractors	High	[redacted]	Medium
8. Health Exposure Management (Dust,	• Chronic exposure of workers to respirable crystalline silica and other fine	High		Medium

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Silica, Noise, Vibration and Fumes)	particulates generated during asphalt milling • Excessive noise exposure from engines, cutting drums and associated plant exceeding exposure standards • Whole-body vibration and hand–arm vibration exposure leading to long-term musculoskeletal and circulatory disorders • Exposure to bitumen fumes, exhaust emissions and other airborne contaminants in poorly ventilated work environments • Lack of formal health monitoring and baseline assessments for workers with high exposure potential • Inadequate implementation of respiratory protection programs, including fit-testing and selection of appropriate RPE		[redacted]	
9. Fatigue, Scheduling and Environmental Conditions	• Worker fatigue d[illegible] ex[illegible]s, night work, rotating r[illegible] and high physical/mental workload • Scheduling milling work[illegible] temperatures or adverse weather without adequate controls • Inadequate planning for rest breaks, hydration and rotation between high-demand tasks • Pressure to complete works within tight road closure windows leading to rushed decision-making and shortcuts • Insufficient consideration of commuting times, remote locations and cumulative fatigue from consecutive shifts • Lack of a structured process for identifying and managing fitness for	High	[redacted]	Medium

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	work issues (fatigue, illness, drugs and alcohol)		[redacted]	
10. Emergency Preparedness and Incident Response	• Lack of clear emergency procedures specific to milling machine incidents such as entanglement, fire, roll-over or collision • Inadequate training of workers in emergency stop use, evacuation and first aid response • Insufficient emergency equipment (e.g. fire extinguishers, spill kits, trauma first aid kits) on or near milling machines • Poor coordination with emergency services and road authorities during serious incidents on live roads • Failure to test and review emergency procedures leading to confusion during real events • Incomplete or delayed incident reporting and investigation resulting in missed opportunities for learning	High	[redacted]	Medium
11. Contractor, Supplier and Interface Management	• Contractors operating milling machines under different or lower WHS standards than the principal organisation • Unclear allocation of WHS responsibilities between PCBUs sharing the workplace under the WHS Act 2011 • Inconsistent supervision and monitoring of contractor compliance with safety procedures and plant standards • Suppliers providing plant without adequate familiarisation training, documentation or ongoing support • Poor coordination of multiple contractors and suppliers in constrained roadwork areas • Inadequate pre-qualification of contractors with respect to plant safety performance and systems	High	[redacted]	Medium

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			[redacted]	
12. Monitoring, Audit and Continuous Improvement	• Failure to detect deterioration in safety performance related to milling machine operations over time • Lack of systematic verification that documented controls are being implemented effectively in the field • Inadequate use of leading indicators (e.g. near misses, hazard reports, inspection findings) to prevent incidents • Limited worker engagement in identifying improvements to systems and controls for milling operations • No structured process to incorporate technological advances or industry good practice into existing systems	Medium	[redacted]	Low

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 FOR 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