Explosive Power Tools Gas Pneumatic and Powder Actuated

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:

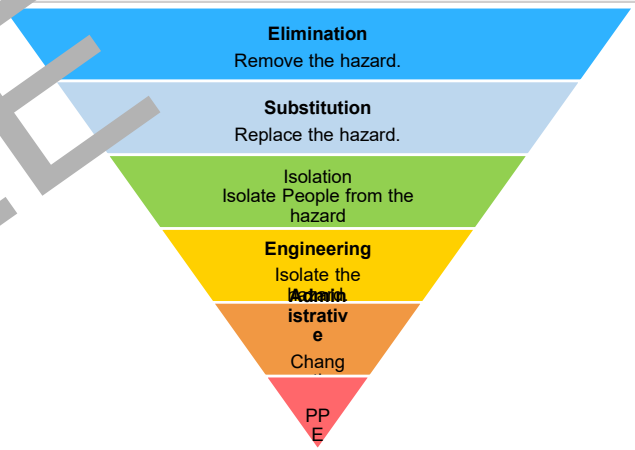
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

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. Governance, WHS Duties and Legislative Compliance	• Lack of clear WHS governance framework for explosive power tools, leading to ad hoc decisions and non-compliance with WHS Act 2011 and WHS Regulations • Directors, officers and PCBUs unaware of due diligence obligations relating to cartridge-operated, gas and powder actuated tools • Inadequate understanding of regulatory requirements for high-risk plant, explosives and licensing obligations (where applicable) • Failure to consult, cooperate and coordinate with other duty holders (host PCBU, principal contractor, labour hire providers) on explosive power tool risks • No systematic review of WHS policies in light of updated standards, codes of practice and manufacturer instructions for explosive tools • Inadequate allocation of resources (time, budget, competent personnel) to manage explosive power tool risks at a system level	4A	• Establish and document a WHS governance framework that specifically addresses explosive power tools (cartridge operated, gas and pneumatic/powder actuated), aligned with WHS Act 2011 and WHS Regulations • Assign clear roles, responsibilities and authority for explosive power tool risk management within the WHS management system, including officer due diligence responsibilities • Develop a legislative compliance register covering explosive power tools, including applicable WHS Regulations, Australian Standards (e.g. AS/NZS 1873 series, AS/NZS 4836 where relevant), codes of practice and manufacturer requirements • Implement a scheduled compliance review process (e.g. annually) to verify ongoing alignment with legislation, standards and regulator guidance • Integrate consultation, cooperation and coordination requirements into project start-up and contractor management procedures for any work involving explosive power tools • Ensure WHS objectives and key performance indicators include specific targets for safe management of cartridge-operated and powder actuated tools • Provide officers with periodic due diligence briefings on the specific hazards, controls and legal obligations associated with explosive power tools • Maintain documented evidence of governance activities (meeting minutes, audit reports, action registers) related to explosive power tool risk management	3H
2. Procurement, Design Selection and Specification of Tools	• Procurement of unsuitable or non-compliant explosive power tools not designed for Australian conditions or standards • Selection of tools without safety features such as automatic piston return, interlocks, guards or misfire controls • Inconsistent purchasing practices leading to multiple tool types and brands without standardised safety and training requirements • Failure to consider ergonomic design, vibration, noise level and recoil forces during procurement, increasing risk of chronic injury • Use of second-hand, modified or non-genuine tools and cartridges without	4A	• Implement a formal procurement procedure that requires WHS and engineering review of all explosive power tools prior to purchase or hire • Specify compliance with relevant Australian Standards and manufacturer requirements as mandatory criteria in all tool procurement and hire contracts • Standardise on a limited range of approved tool models and cartridge types to simplify training, maintenance, storage and control of ammunition • Include safety features (e.g. contact pressure interlocks, automatic return systems, misfire locks, anti-double firing mechanisms, vibration reduction) as non-negotiable procurement requirements • Require written confirmation from suppliers that tools and cartridges are suitable for the intended base materials and applications (e.g. concrete, steel, masonry) • Prohibit purchase or use of non-genuine or incompatible cartridges, fasteners and accessories through documented procurement controls • Include ergonomic, vibration and noise criteria in technical specifications, with preference for low-vibration, low-noise models where reasonably practicable	2M

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	verification of compliance or service history • Inadequate assessment of compatibility between tools, cartridges, fasteners and base materials		• Maintain a central register of approved tool types, accessories and compatible cartridge classes, accessible to supervisors, stores and procurement personnel	
3. Tool Registration, Asset Management and Traceability	• Lack of centralised register for explosive power tools resulting in poor visibility of location, condition and maintenance status • Tools in service beyond manufacturer-recommended life or inspection interval due to inadequate asset tracking • Inability to trace incident history or recurring faults with specific tools or models • Uncontrolled movement of tools between projects or subcontractors without verification of condition and documentation • Loss or theft of explosive power tools increasing risk of unauthorised use or tampering • Inadequate labelling identification of tools, cartridges and power levels	3H	• Establish and maintain an asset register for all explosive power tools and key accessories, recording unique ID, model, serial number, age, service history and current allocation • Implement a formal issue and return system (e.g. sign-out log, electronic asset management software) for tools and cartridges each shift • Apply durable unique identification labels or tags to each tool, linked to its asset record and service schedule • Introduce transfer of custody procedures for tools moving between sites or PCBUs, requiring verification of condition, maintenance status and documentation • Monitor tool utilisation and age to plan timely replacement before end-of-life or when safety-critical components are no longer supported by the manufacturer • Implement periodic inventory checks and reconciliation for tools and cartridges to detect loss, theft or unauthorised items • Record all incidents, near misses and defects against specific tool IDs to allow analysis of recurring or systemic issues • Restrict possession of explosive power tools to authorised persons only, with storage and access controls integrated into the asset management system	2M
4. Competency, Licensing and Authorisation of Operators	• Use of explosive power tools by untrained or inexperienced workers who do not understand recoil, penetration, misfires and ricochet hazards • Inconsistent competency standards between contractors and sites, leading to varying levels of risk control • No formal verification of training currency, licences or manufacturer-specific competency • Inadequate supervision of new or young workers tasked with using powder actuated or cartridge-operated tools • Failure to account for literacy, language and cognitive limitations when delivering training, resulting in critical misunderstandings	4A	[redacted]	2M

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	• Competency not refreshed after introduction of new equipment, cartridges or methods		[redacted]	
5. Training, Information, Instruction and Competency for Supervisors	• Supervisors lacking specific knowledge of explosive power tool hazards, resulting in poor oversight and enforcement of controls • Inadequate understanding of control hierarchy and system-based risk management, leading to reliance on PPE and behavioural controls only • Supervisors unaware of mandatory exclusion zones, line-of-fire risks and structural suitability for fixing • Failure to recognise early warning signs of unsafe practices, fatigue, rushing or production pressure influencing use of explosive tools • Poor communication of safety expectations and permit requirements to subcontractors	3H	[redacted]	2M
6. Planning, Job Design and Integration with SWMS and Permits	• Explosive power tool use not identified or planned at tender or design stage, resulting in reactive, high-risk practices on site • No requirement to incorporate explosive power tool risks into SWMS, JSEA or safe work instructions for high-risk construction work • Work sequencing and access arrangements forcing operators into awkward positions, overhead work or confined spaces while using explosive tools • Inadequate assessment of alternative fastening methods (e.g. mechanical	4A	[redacted]	2M

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	anchors, adhesive fixings, pre-drilling) that may present lower overall risk • Permit to work systems failing to capture explosive power tool activities in restricted areas (e.g. live services, hazardous atmospheres, occupied buildings) • Production pressure driving shortcuts such as bypassing controls or using higher power cartridges than planned		[redacted]	
7. Maintenance, Inspection, Calibration and Repair Systems	• Inadequate preventive maintenance program resulting in tool failure, misfires, double firing, jamming or uncontrolled discharge • Lack of formal pre-use inspection processes, leading to operation of damaged or contaminated tools • Use of unapproved or improvised repairs, including non-genuine parts, affecting containment of explosive forc • Failure to identify wear and fatigue in critical components su as arrels, pistons, firing pins d safety interlocks • Poor record keep g of ins service actions and ectificatio • Contamination of internal mechani ns with oil, dust, moisture or debris increasing risk of malfunc		[redacted]	2M
8. Cartridges, Fasteners and Consumables Management	• Use of incorrect cartridge power level for the substrate, leading to over-penetration, ricochet or structural damage • Mixing of incompatible cartridges, fasteners and accessories between tool types or brands • Degradation of cartridges due to poor storage (heat, moisture, physical damage) increasing misfire and partial discharge risks	4A	[redacted]	2M

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	• Lack of stock control, leading to expired or unknown-age cartridges being used • Uncontrolled access to cartridges and fasteners, allowing unauthorised removal, tampering or off-site misuse • No systematic process for disposal of misfired cartridges, spent shells and damaged consumables		[redacted]	
9. Work Environment, Site Conditions and Exclusion Zones	• Use of explosive power tools in congested or occupied areas without appropriate exclusion zones or barriers • Line-of-fire exposure to other workers, building occupants or members of the public from projectiles, ricochet or flying debris • Inadequate assessment of base material (e.g. brittle concrete, hollow block, unknown steel thickness) leadi to blow-through or shattering • Uncontrolled use of tools on ladders, scaffolds or elevated work platforms, increasing fall and recoil risks • Use in explosive / flammable atmospheres (e.g. near installations, fuel stores, hazardous areas) without appropriate controls • Adverse environmental conditions (low light, wet surfaces, extreme temperatures, high wind) impacting control and visibility	4A	[redacted]	2M
10. Interface with Other Trades, Contractors and Public Safety	• Poor coordination with other trades leading to workers entering exclusion zones during firing operations • Subcontractors using their own explosive power tools without alignment to principal contractor procedures and standards • Lack of communication about timing and location of high-noise, high-energy	3H	[redacted]	2M

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	activities impacting nearby tenants or public areas • Inconsistent control of access routes and barricades, resulting in inadvertent exposure of bystanders • Contractor management systems not capturing competencies, maintenance records or risk controls for subcontractor-owned tools		[redacted]	
11. Health Monitoring, Ergonomics and Fatigue Management	• Cumulative exposure to hand-arm vibration and tool recoil contributing to musculoskeletal disorders and longer-term health effects • Repetitive firing and awkward postures (overhead, kneeling, reaching) leading to soft tissue injuries • Prolonged high-noise exposure witho system-level controls increasing risk of noise-induced hearing loss • Fatigue and reduced concentration during extended use, increasing likelihood of misjudging line-of-fire or power level selection • Inadequate consideration of individual fitness for task, pre-existing injuries or health limitations	3	[redacted]	2M
12. Emergency Preparedness, Misfire and Incident Response	• Lack of clear procedures for dealing with misfires, partial discharges or jammed cartridges leading to ad hoc and unsafe responses • Delayed or ineffective response to injuries from projectiles, ricochet or structural failures • Poor incident reporting and investigation practices resulting in repeated systemic failures	3H	[redacted]	2M

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	• Inadequate first aid resources or emergency equipment suitable for penetrating or crush injuries • Unclear communication protocols during emergencies on multi-contractor sites		[redacted]	
13. Documentation, Records Management and Information Control	• Critical information such as manuals, safety data, procedures and training records not readily available to workers and supervisors • Outdated versions of procedures or manufacturer instructions being used on site • Incomplete or inaccurate records of training, maintenance, inspections, permits and incidents • Inability to demonstrate compliance to regulators or clients due to poor documentation control • Loss of knowledge when experienced staff leave, due to undocumented practices and reliance on informal know how	3H	[redacted]	1L
14. Consultation, Worker Engagement and Safety Culture	• Workers hesitant to raise concerns about explosive power tool risks due to fear of reprisal or pressure • Lack of structured consultation with health and safety representatives (HSRs) and workers in developing procedures and selecting equipment • Normalisation of risk-taking behaviours, such as firing close to edges, working without adequate exclusion zones or bypassing interlocks • Inadequate feedback loops for workers to report defects, near misses and improvement suggestions • Cultural or language barriers that inhibit effective engagement on safety issues	3H	[redacted]	2M

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15. Auditing, Performance Monitoring and Continuous Improvement	• Lack of systematic monitoring of explosive power tool risk controls leading to drift from documented procedures • No performance indicators for explosive power tool safety (e.g. misfire rates, defect trends, training completion) • Failure to identify recurrent non-conformances or trends in incidents and near misses • Infrequent or superficial audits that do not test effectiveness of system controls in the field • Complacency over time as incident rates remain low, resulting in gradual erosion of controls	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 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