Abrasive Blasting and Coating

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:

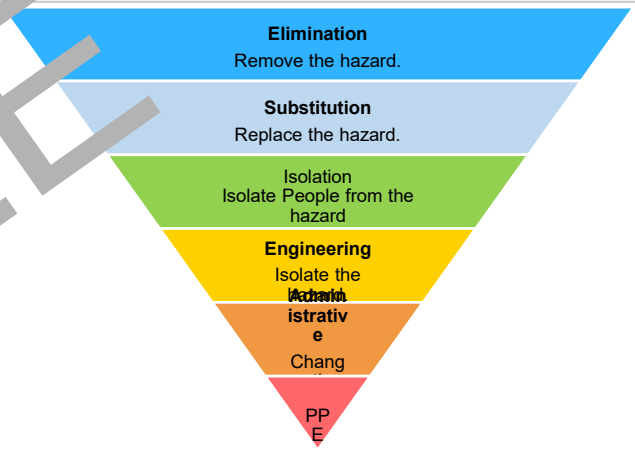
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

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, Responsibilities and Consultation	• Lack of clearly defined WHS roles, responsibilities and accountabilities for abrasive blasting and coating activities, leading to gaps in oversight and decision-making • Insufficient officer due diligence under WHS Act 2011 (failure to acquire and keep up-to-date knowledge of abrasive blasting and coating risks and controls) • Inadequate consultation mechanisms with workers and health and safety representatives (HSRs), resulting in unmanaged health and safety concerns • No structured process for involving subcontractors and labour-hire workers in WHS consultation and issue resolution • Poor communication of WHS expectations to supervisors, leading to inconsistent enforcement of procedure on site	High	• Establish and document a WHS governance framework specific to abrasive blasting and coating, clearly allocating duties and authorities in accordance with WHS Act 2011 and WHS Regulation 2011 • Define and document officer due diligence activities (e.g. scheduled WHS briefings on blasting and coating risks, review of audit reports, verification of implementation of critical controls) • Implement a formal WHS consultation procedure that requires regular toolbox talks, WHS meetings and involvement of HSRs specifically addressing abrasive blasting and coating hazards (respirable dust, noise, confined spaces, coatings toxicity etc.) • Integrate contractor and labour-hire personnel into the PCBU's WHS consultation framework through contractual requirements, induction, and shared WHS meetings • Communicate WHS responsibilities to all levels (board, management, supervisors, workers) via position descriptions, KPI frameworks, and documented authority to stop unsafe work • Maintain a WHS responsibilities matrix for abrasive blasting and coating, and review it at least annually or following organisational or legislative change • Ensure an issue resolution procedure is documented, communicated and used to manage WHS disputes or emerging risks related to blasting and coating operations	Medium
2. Legislative Compliance, Standards and Codes of Practice	• Failure to identify and comply with relevant WHS legislation, regulations and codes of practice applicable to abrasive blasting and coating, including hazardous chemicals and airborne contaminants • Non-compliance with exposure standards for respirable crystalline silica, dusts, metals, isocyanates and other hazardous substances used in blasting media and coatings • Inadequate management of pressure equipment, plant and structures associated with blasting pots, compressors and spray systems • Failure to comply with environmental regulations relating to overspray, waste, noise and emissions, creating secondary health and safety issues • Outdated procedures that do not reflect current Australian Standards, Safe Work	High	• Develop and maintain a legal and other requirements register referencing WHS Act 2011, WHS Regulation 2011, relevant Australian Standards (e.g. AS/NZS 1715/1716 for respiratory protection, AS 4114 for spray painting), and abrasive blasting specific guidance and codes of practice • Appoint a competent person responsible for monitoring regulatory changes and updating the abrasive blasting and coating WHS management system accordingly • Undertake periodic legal compliance audits of abrasive blasting and coating operations, with documented action plans and close-out tracking • Document and implement procedures to ensure airborne contaminants are controlled to below current Workplace Exposure Standards, supported by air monitoring where indicated by risk assessment • Ensure all pressure equipment, blasting vessels, compressors and associated plant comply with design, registration, inspection and maintenance requirements under WHS Regulation 2011 • Incorporate environmental compliance (waste disposal, contaminated grit, overspray control, noise) into the WHS risk assessment and management system to prevent cross-regulation breaches • Provide compliance training for managers and supervisors so they understand key legislative duties and standards relevant to abrasive blasting and coating	Medium

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	Australia guidance or regulator requirements			
3. Hazard Identification, Risk Assessment and Change Management	• Lack of systematic hazard identification for abrasive blasting and coating, resulting in unrecognised exposure to silica, lead, isocyanates, noise, vibration, confined spaces and working at height • Risk assessments performed as task lists rather than system-level reviews, leading to critical management failures not being addressed • No documented management of change process for new blasting media, coatings, equipment, processes or work locations • Failure to review risk assessments after incidents, near misses or introduction of new technology • Inadequate consideration of combined or cumulative exposures (e.g. noise a ototoxic chemicals, multiple hazardous chemicals, manual handling with vibration)	High	• Implement a formal hazard identification a sk assessment procedure requiring structured WHS risk assessments for abrasive blasting and coa systems cluding health monitoring and long-term chronic exposures • Ensure risk assessments are conducted by co tent perso consultation with workers, and specifically address airborne taminants, noise, nt, co ed spaces, hazardous chemicals, ignition sources and environmental co ons • Introduce a doc nte anage nt of change process that mandates WHS review and approval before introdu g new blas g me coatin oducts, plant, PPE or changes to work methods or locations • Req period evie of risk assessments (e.g. annually) and after any incident, significant near-miss, or reg y upda ated to blasting or coating • Includ as sment combined exposures and interaction of hazards (e.g. noise plus solvents, heat stress w ile w ring P work inside tanks with coatings containing isocyanates) • aintai a cen register of abrasive blasting and coating risk assessments with version control and clea sp nsibility for maintenance and review • Ensure findings from risk assessments are translated into documented procedures, engineering design re irements and training content	Medium
4. Procurement and Specification of Plant, Equipment and Materials	• Procurement of ab ve blasting and coating equipment at does not meet Australian Standa or is un for the intended enviro g. explo ve atmospheres, confined spaces) • Purchase of blasting media and coating products with hig ty (e.g. high free silica content, lead-based paints, high isocyanate content) without proper risk evaluation and controls • Insufficient information from suppliers (SDS, operating manuals, design registrations) leading to incorrect use and inadequate control of risks • Inconsistent quality and maintenance history for hired or subcontractor-supplied equipment • Cost-driven purchasing decisions that ignore life-cycle safety and maintenance requirements	High	[redacted]	Medium

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			[redacted]	
5. Plant, Equipment and Facility Design	• Inadequate design of blast rooms, booths, spray bays and ventilation systems leading to accumulation of airborne contaminants and poor visibility • Insufficient segregation of blasting and coating areas from other workplace activities, exposing non-involved workers to dust, noise, fumes and overspray • Poor ergonomics in equipment layout causing awkward postures, excessive manual handling and repetitive strain injuries • Lack of engineered controls for noise and vibration from compressors, pumps and blasting equipment • Inadequate design for containment a collection of spent abrasive, overspray and contaminated waste, leading to uncontrolled slip, trip, en ental an health hazards	High	[redacted]	Medium
6. Contractor and Subcontractor Management	• Inconsistent WHS tand tw n principal contractor a ubcontracto undertaking blasting and coating, resulting in gaps in critical control • Inadequate pre-qualification of specialist blasting and coating contractors with respect to high-risk work (confined spaces, hazardous chemicals, working at height) • Poor coordination of multiple PCBUs leading to conflicting procedures, unclear emergency arrangements and exposure to unmanaged risks • Subcontractor workers not inducted into site-specific blasting and coating hazards, controls and permit systems	High	[redacted]	Medium

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	• Lack of monitoring and enforcement of contractor compliance with agreed WHS requirements		[redacted]	
7. Training, Competency and Supervision	• Workers performing abrasive blasting and coating without demonstrable competency in handling hazardous chemicals, respirators, confined spaces and complex plant • Supervisors lacking competence in WHS risk management, exposure standards and critical control verification for blasting and coating • Insufficient training on interpreting SDS, ventilation design limits, and fit-testing and maintenance of respiratory protective equipment • No formal verification of competency for high-risk supporting activities (e.g. working at height, forklift operation, operation of elevated work platforms, confined space entry • Inadequate supervision of new, young or inexperienced workers assigned abrasive blasting and coating activities	High	[redacted]	Medium
8. Safe Work Procedures, Permits and Documentation	• Absence of standardised, documented safe work procedures for abrasive blasting and coating activities, leading to inconsistent controls • High-risk activities such as confined space work, hot work near flammable coatings, and work at height occurring without formal permit-to-work systems • Workers relying on informal practices and verbal instructions instead of documented procedures, increasing variability in controls • Procedures not updated to reflect current plant, materials, exposure limits or best practice guidance	High	[redacted]	Medium

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	• Poor document control leading to use of outdated safe work instructions, SDS and manuals		[redacted]	
9. Hazardous Chemicals, SDS Management and Health Monitoring	• Inadequate identification and register of hazardous chemicals used in blasting media and coatings (including silica, metals, solvents, isocyanates, flammable liquids) • Missing or outdated Safety Data Sheets, preventing informed risk control and emergency response • Lack of systems to ensure decanting, labelling and storage of chemicals comply with WHS Regulation 2011 and prevent incompatible mixing, leaks or fire • Absence of health monitoring progra for workers exposed to substances requiring surveillance (e yanates, lead, silica as per W Regulation) • Failure to condu exposure an atmospheric monit ndic d, resulting in unrecogni exceedanc of exposure standards	High	[redacted]	Medium
10. Personal Protective Equipment (PPE) and Respiratory Protection Program	• Over-reliance on PPE to control blasting and coating hazards without robust higher-level controls (substitution, isolation, engineering) • Inadequate selection and management of respiratory protective equipment (RPE) for high dust and fume environments • Lack of fit-testing, maintenance, cleaning and replacement schedules for RPE and other PPE, compromising protection	High	[redacted]	Medium

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	• Workers not trained in correct use, limitations and storage of PPE and RPE • No formal program to evaluate PPE compatibility with other equipment (hearing protection, eye protection, communication systems)		[redacted]	
11. Maintenance, Inspection and Calibration Systems	• Failure of critical safety systems (ventilation, dust extraction, emergency stops, pressure relief devices) due to inadequate maintenance regimes • Unplanned breakdowns of blasting and coating plant leading to unsafe improvisation, bypassing of guards or controls, and increased manual handling • Inaccurate gauges, flow meters and monitoring devices resulting from lack of calibration, leading to operation outside safe limits • No formal schedule for inspection of hoses, couplings, nozzles and pressure vessels, increasing risk of hose whiplash, bursts or uncontrolled release • Maintenance conducted without proper isolation or permit processes, exposing workers to stored energy, airborne contaminants or unexpected plant movement	High	[redacted]	Medium
12. Environmental Controls, Housekeeping and Waste Management	• Accumulation of spent abrasive, dust, overspray and offcuts leading to slips, trips, fire load and secondary exposure through re-suspension • Inadequate containment of blasting media and coatings, resulting in contamination of surrounding areas and neighbouring workplaces • Improper management of hazardous waste (e.g. lead-contaminated grit, solvent waste, used filters) causing exposure, environmental breaches and unsafe manual handling	Medium	[redacted]	Low

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	• Poor housekeeping practices that obstruct emergency access routes, fire equipment and ventilation systems • Uncontrolled water run-off or effluent from wet blasting or cleaning operations carrying hazardous residues		[redacted]	
13. Health Surveillance, Fatigue and Wellbeing Management	• Chronic health impacts from long-term exposure to dusts, fumes, noise and chemicals associated with abrasive blasting and coating not being identified or managed • Fatigue resulting from extended shifts, high physical workload, heat stress and work in uncomfortable PPE ensembles leading to errors and incidents • Psychosocial hazards such as work pressure, remote or isolated work locations, and conflict between production and safety expectations • Insufficient integration of health monitoring outcomes into risk management, resulting in continued exposure to harmful conditions • Workers under-reporting symptoms due to fear of losing work or misunderstanding of health risks	High	[redacted]	Medium
14. Emergency Preparedness and Response	• Inadequate planning for emergencies specific to blasting and coating, such as toxic fume release, dust explosions, fires involving flammable coatings and confined space incidents • Emergency response plans not reflecting actual facility layout, equipment and hazardous substance inventory	High	[redacted]	Medium

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	• Insufficient emergency equipment (e.g. eye wash stations, spill kits, fire extinguishers, rescue equipment) or poor maintenance and accessibility • Workers and contractors not trained or drilled in emergency procedures relevant to blasting and coating areas • Lack of coordination with external emergency services regarding site-specific risks and access routes		[redacted]	
15. Incident Reporting, Investigation and Continuous Improvement	• Under-reporting of incidents, near misses and health symptoms associated with abrasive blasting and coating, leading to missed learning opportunities • Superficial or biased investigations that do not identify root causes, particularly system and management failures • Failure to track corrective actions to completion, allowing recurrence of similar incidents • Limited communication of incident learnings to workers, supervisors and contractors involved in blasting and coating • No systematic review of WHS performance indicators to identify trends and emerging risks	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