

Silica Dust Exposure Prevention Risk Assessment

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

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THIS 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: | | | | | | | | Notes on Hierarchy of Controls: | |
| 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. | | | | | | | | Remember to apply controls in the preferred order shown by the coloured pyramid: | |
| 3H Review and approve additional controls before task starts. Senior supervisor sign-off needed. | | | | | | | | 1. Eliminate | |
| 2M Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions. | | | | | | | | 2. Substitute | |
| 1L Proceed, following standard operating procedures. Monitor and keep records. | | | | | | | | 3. Isolate | |
| | | | | | | | | 4. Engineering | |
| | | | | | | | | 5. Administrative | |
| | | | | | | | | 6. PPE | |
| Consequence Scale: | | | | | | | | Always document why a lower-order control is accepted if elimination or substitution is not reasonably practicable. | |
| 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 | | | | |
| | | | | | | | | <i>aligned with Safe Work Australia's Managing the risk of fatigue at work (2023) and ISO 45001:2018 clauses 6–8.</i> | |

| 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. Site Preparation | dispersal of silica dust due to movement, uncontrolled entry to the site | 3H | <ul style="list-style-type: none"> - Conduct air monitoring to identify silica dust levels - Establish exclusion zones for non-essential personnel - Use water suppression systems during ground disturbance - Set up dust-monitoring equipment at site boundary - Implement access control measures for site entry - Train personnel on site-specific WHS requirements - Use signage to warn about potential silica dust exposure - Erect physical barriers to restrict non-authorized access - Engage an occupational hygienist for risk assessment - Provide detailed site map outlining restricted areas | 2M |
| 2. Equipment Inspection | wear or damage to equipment leading to dust release, inadequate safety features on equipment | 2H | <ul style="list-style-type: none"> - Conduct pre-operation inspections on all equipment - Ensure equipment fitted with dust suppression systems - Keep maintenance logs to track equipment condition - Train operators in identifying equipment faults - Use only equipment compliant with Australian standards - Regularly service all machinery based on manufacturer guidelines - Equip machinery with enclosed cabins fitted with air filtration - Ensure operators use appropriate PPE - Provide immediate repair or replacement for faulty equipment - Conduct refresher training sessions for equipment operators | 1L |
| 3. Handling Materials | manual handling injuries, silica dust release from damaged bags | 3H | <ul style="list-style-type: none"> - Use mechanical aids for lifting heavy materials - Train staff in safe manual handling techniques - Store materials in appropriately labelled containers - Ensure all bags are undamaged and properly sealed - Use dedicated material handling equipment - Regularly update handling procedures based on risk assessments - Provide PPE such as gloves, masks, and protective clothing - Maintain clean storage areas to reduce dust accumulation | 2M |

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| | | | <div>- Implement a review system for handling practices</div> <div>- Segregate high-risk materials in storage</div> | |
| 4. Cleaning and Housekeeping | accumulation of silica dust, unorganised workspaces | 2M | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><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| 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 |
| | | | | |
| 7. Monitoring and Health Surveillance | failure to detect increased silica levels, health impacts on workers over time | 3H | | 2M |
| 8. Emergency Response | slow response to silica-related incidents, confusion during emergencies | 3H | | 2M |
| 9. Communication | miscommunication on safety measures, inadequate reporting of silica hazards | 2M | | 1L |

| JOB STEP | POTENTIAL HAZARDS | IR | CONTROL MEASURES | RR |
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| | | | | |
| 10. Work Environment Design | inadequate ventilation leading to dust build-up, poorly designed workspaces increasing risk | 3H | | 2M |
| 11. Material Transport | spillages causing dust release, unsafe transport methods | 2M | | 1L |
| 12. Weather Conditions | increased dust due to dry or windy conditions, reduced visibility due to dust storm | 4A | | 2M |

| JOB STEP | POTENTIAL HAZARDS | IR | CONTROL MEASURES | RR |
|---------------------------------------|---|--------------|--|---------------|
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| | | | | |
| 13. Waste Management | improper disposal of silica-contaminated waste, cross-contamination with non-hazardous waste | 3H | | 2M |
| 14. Contractor Management | poor understanding of silica risks by contractors, lack of alignment with site safety procedures | 3H | | 2M |
| 15. Review and Continuous Improvement | ineffectiveness of control measures leading to risk, non-compliance with updated safety standards | 3H | | 2M |

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SAMPLE

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.