Concrete Pumping

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:

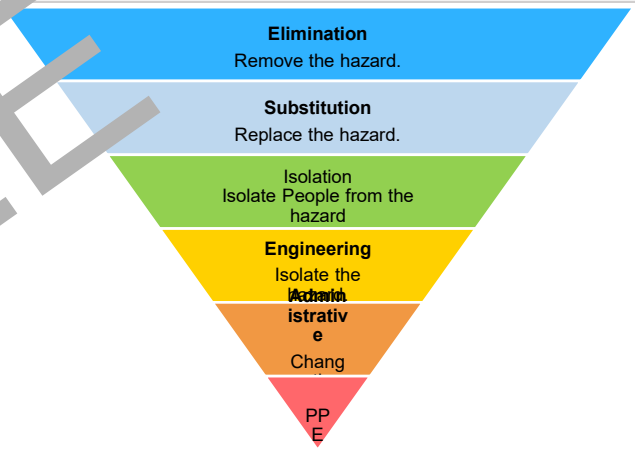
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

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, Roles and Due Diligence	• Lack of clear WHS governance structure for concrete pumping operations leading to gaps in accountability • Officers and senior managers not exercising due diligence as required under WHS Act 2011 (e.g. limited understanding of concrete pumping specific risks) • Inadequate consultation mechanisms with workers, subcontractors and principal contractors on high-risk concrete pumping activities • No formal process to ensure that persons conducting a business or undertaking (PCBUs) with overlapping duties (builder, pump operator, concrete supplier) coordinate WHS responsibilities • Failure to monitor and review WHS performance data specific to concrete pumping (near misses, defects, incidents) • Inadequate allocation of resources (time, budget, competent personnel) to manage concrete pump trucks and line pump risks	High	• Establish and document a WHS governance framework that specifically references concrete pumping as a high-risk construction activity under WHS legislation • Define and document WHS roles, responsibilities and authorities for officers, managers, supervisors, leading hands, plant operators and maintenance personnel involved with the concrete pump truck and line pump • Implement an officer due diligence program (briefings, training, regular reports) so officers can demonstrate they acquire and keep up-to-date knowledge of concrete pumping hazards, risk controls and applicable standards (e.g. AS 2550.15, safe concrete pumping codes of practice) • Implement formal consultation arrangements (HSC, HSRs, toolbox talks, pre-start meetings) that include concrete pumping specific agenda items (e.g. set-up locations, boom exclusion zones, and line routing • Develop written procedures for managing overlapping duties between PCBUs, including how responsibilities for planning pump locations, traffic interface, exclusion zones and emergency response are agreed and recorded • Establish WHS objectives and key performance indicators (KPIs) specific to concrete pumping (e.g. % pre-start completed, number of line blockages, near-miss reports, structural stability issues) • Require documented WHS management plans for projects where concrete pumping is used, including integration with principal contractor's construction WHS management plan • Schedule periodic management reviews of WHS performance focused on concrete pumping operations, using incident trends, audit findings and worker feedback to drive improvement • Ensure adequate resourcing (competent supervisors, spotters, planners, WHS personnel and maintenance capacity) is budgeted and planned for all projects using concrete pump trucks with line pumps	Medium
2. Plant Procurement, Design and Commissioning	• Purchase or hire of concrete pump trucks and line pumps that are not designed, verified or configured to meet Australian standards and WHS Act 2011 obligations • Lack of engineering verification for structural stability, boom integrity (if fitted) and line pressure ratings under proposed operating configurations • Absence of documented plant risk assessment prior to commissioning and first use on Australian construction sites • Inadequate specification of safety-critical features such as emergency stop systems, interlocks, guarding, load and pressure monitoring,	High	• Implement a formal plant procurement procedure that requires WHS and engineering review of all concrete pump trucks and line pump systems before purchase or hire • Specify compliance with relevant Australian Standards, codes of practice and regulatory requirements in all procurement contracts for pumps, lines, hoses and associated components • Require a documented plant risk assessment (including structural stability and pressure system risks) to be completed, reviewed and approved prior to commissioning and initial use • Ensure that all safety-critical systems (emergency stops, guarding, interlocks, remote controls, hopper grate protection, pressure relief devices, boom limiters where applicable) are specified, tested and documented on delivery • Mandate compatibility assessment and documentation for all pipeline components (pipes, elbows, reducers, clamps, gaskets and flexible hoses), including maximum pressure ratings and restraint requirements	Medium

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	remote control systems and line anchoring points • Poor integration between pump, pipelines, hoses, couplings and reducers from different manufacturers creating compatibility and failure risks • Procurement decisions driven solely by cost or output capacity without systematic consideration of WHS performance and maintainability • Failure to obtain and retain manufacturer's instructions, compliance statements, test certificates and maintenance manuals in English		• Include maintainability, access for inspection, parts availability and OEM support as evaluation criteria in procurement decisions • Require all plant to be supplied with current operating and maintenance manuals, test certificates, logbooks and declarations of conformity, and store these in an accessible plant file (physical and/or digital) • Develop a commissioning checklist for concrete pump trucks and line pumps covering safety functions, signage, emergency systems, line configuration, grounding and controls, and require sign-off by a competent person prior to operational deployment	
3. Contractor Management and Competency	• Use of external concrete pumping contractors without adequate prequalification or verification of their WHS systems and licences • Pump operators and line hands lacking competency, evidence of training or high-risk work licences where required • Inconsistent understanding of roles between principal contractor, pump contractor and concrete supplier leading to gaps in supervision and control • No formal process to verify competency for new or unfamiliar site complex line setups or high-rise / long-line pumping • Subcontractors using informal or undocumented work practices that bypass site WHS requirements • Language, literacy or cultural barriers affecting contractors' understanding of safe systems of work and emergency arrangements	High	• Implement a contractor prequalification process that assesses concrete pumping contractors' WHS management systems, incident history, plant maintenance records and compliance with WHS Act 2011 duties • Require documented evidence of competency for pump operators and line hands (e.g. VOCs, manufacturer or RTO training, logbooks, high-risk work licences if applicable, supervision arrangements for less experienced workers) • Develop written agreements or scopes of work that clearly define WHS responsibilities between principal contractor, pump contractor and concrete supplier, including planning, supervision, exclusion zones, and emergency response • Implement a verification of competency (VOC) process for operators new to the site or to particular equipment configurations, including assessment of their understanding of site-specific hazards and controls • Require subcontractors to work under the principal contractor's WHS management plan and specific safe work procedures for concrete pumping, and integrate them into all site inductions and toolbox talks • Provide translated key safety information and use visual aids where language or literacy barriers are identified, and confirm understanding via interactive briefings rather than relying solely on written documents • Include contractor performance (incident rates, adherence to procedures, reporting quality) in regular WHS reviews and re-prequalification processes	Medium
4. Site Planning, Coordination and Interface Management	• Inadequate planning of pump truck location, line routing and traffic interface resulting in vehicle collisions, struck-by incidents or instability • Insufficient coordination with crane operations, mobile plant, delivery trucks	High	[redacted]	Medium

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	and other trades working near the pump and lines • Concrete lines routed through congested or poorly controlled areas, creating trip hazards and exposure to pressurised line failures • Failure to plan for overhead electrical risks, underground services, ground conditions and structural capacity for supporting the pump truck and line supports • Poor interface management between builder, pump contractor and concrete supplier regarding pour sequence, pump pressures, line lengths and potential for blockages • No structured pre-pour planning meeting or documentation for complex pours (multi-storey, long runs, elevation changes)		[redacted]	
5. Safe Systems of Work and Procedures	• Absence of formalised safe work procedures for concrete pumping and line pumps, leading to inconsistent practices and reliance on operator knowledge • Procedures not covering system-level risks such as concrete supply variations, communication protocols, isolation, and coordination with other high-risk construction activities • Inadequate consideration of abnormal conditions (blockages, change in mix design, line relocation, emergency shutdowns) in procedures • Procedures not reviewed or updated following incidents, new equipment or regulatory changes • Workers unaware of or unable to access current procedures on site	High	[redacted]	Medium

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			[redacted]	
6. Training, Competency and Supervision	• Insufficient training of pump operators, line hands, leading hands and supervisors regarding system-level risks of concrete pumping • No formal competency framework for different roles involved in planning, operating and supervising concrete pumping activities • Supervisors lacking technical understanding to challenge unsafe set-ups or to verify safe working pressures, line routing and support arrangements • Inconsistent induction content resulti in workers being unaware of site-speci concrete pumping controls and emergency procedures • Over-reliance on perienced operators without cumented competency asses ant ces n planning for new personnel • Inadequate supervision levels du g complex or high-risk pou	High	[redacted]	Medium
7. Maintenance, Inspection and Testing Systems	• Lack of systematic inspection and maintenance leading to undetected wear, corrosion or defects in pumps, pipelines, clamps and hoses • No scheduled pressure testing or non-destructive testing (NDT) regime for critical components of the line system • Poor maintenance record-keeping making it difficult to verify plant condition or track recurring faults	High	[redacted]	Medium

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	• Use of incompatible or non-rated replacement parts for clamps, gaskets, reducers and flexible hoses • Failure to remove from service damaged or out-of-date components due to absence of clear criteria and tagging systems • Inadequate inspection of vehicle systems (brakes, stabilisers, outriggers if fitted) impacting stability and safe operation		[redacted]	
8. Engineering Controls, Line Design and Stability Management	• Inadequate engineering design of line layouts, restraints and supports leading to pipe movement, failure or structural overloads • Pump truck instability due to inadequate assessment of load paths, outrigger reactions, ground support and proximity to excavation[redacted]pended slabs • Insufficient anch[redacted]ng and re[redacted]of vertical or inclined l[redacted]sing workers to risk of striking by moving pipes or catastrophic failure • Lack of engineering rev[redacted] non-standard configurations such as long horizontal runs, high-rise pumping or complex changes in direction • Failure to control maximum operating pressures, pressure spikes and water hammer effects through system design and pressure monitoring	High	[redacted]	Medium
9. Traffic, Public Interface and Site Access Management	• Uncontrolled interaction between concrete pump trucks, line pump support vehicles, agitator trucks and general site traffic	High	[redacted]	Medium

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	• Members of the public or non-essential workers entering pump set-up areas or crossing over, under or near pressurised lines • Inadequate planning of access routes for heavy vehicles leading to congestion, reversing risks and blocking of emergency access • Poor visibility and signage around pump locations, particularly on roadways or in shared access areas • Lack of formal arrangements with local councils or road authorities where public roads or footpaths are affected		[redacted]	
10. Communication, Permit and Authorisation Systems	• Breakdown in communication between pump operator, line hands, concrete agitator drivers and site supervisors leading to unexpected start-up, over-pressurisation or uncontrolled line movement • No formal authori[illegible]ation or permit process for high-ri[illegible] configu[illegible]ne relocations, or work[illegible] live serv[illegible]es and public areas • Inadequate standardisation of [illegible]nals, radio protocols and hand [illegible] resulting in confusion during critical operations or emergencies • Failure to communicate changes in pour plan, concrete mix, or site layout to all relevant parties in a timely manner • Lack of documented communication plan for emergency situations involving line rupture, ground failure or structural instability	High	[redacted]	Medium
11. Emergency Preparedness and Incident Management	• Lack of planning for foreseeable emergencies such as line blockages,	High		Medium

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	hose whip, line rupture, pump fire, structural collapse or ground failure • Emergency response plans not specific to concrete pump truck and line pump scenarios • Insufficient first aid, rescue equipment and spill control resources available near pumping locations • Workers unfamiliar with emergency roles, responsibilities and shutdown procedures • Inadequate incident reporting and investigation processes resulting in repeated failures and missed learning opportunities		[redacted]	
12. Health, Fatigue and Psychosocial Risk Management	• Extended or irregular [redacted] hours fo pump operators and [redacted]e hands leading to fatigue and impa[redacted]ed decision-making • High-pressure wo[redacted]ment during large pours increasing stress [redacted]d likelihood of shortcuts or poor communication • Exposure to noise, vibration, diesel exhaust and cementitious materials without adequate system-level health controls • Inadequate management of psychosocial risks such as bullying, aggression from other trades under schedule pressure, or blame culture after incidents • Lack of structured process to manage fitness for work, including alcohol and other drugs	Medium	[redacted]	Low

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13. Documentation, Records and Continuous Improvement	• Inadequate documentation and record-keeping undermining the ability to demonstrate compliance with WHS Act 2011 and associated regulations • Loss or fragmentation of critical records such as plant inspections, training, risk assessments, permits and incident investigations • Failure to systematically review and improve systems following incidents, audits or changes in legislation and standards • Overly complex or inaccessible documentation leading to low utilisation by site personnel	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