

Roadworks Kerbing and Ground Stabilization

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:	

SAMPLE

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:	
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.
3H	Review and approve additional controls before task starts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in place and effective. 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 Consultation	<ul style="list-style-type: none"> Lack of clearly defined WHS responsibilities for client, principal contractor, subcontractors and designers on roadworks and ground stabilisation projects Inadequate WHS consultation arrangements with workers, subcontractors and traffic controllers Failure to establish and maintain a WHS management plan for the roadworks site as required under WHS Regulations for construction projects Poor integration of WHS requirements into contracts, scopes of work and procurement documentation Insufficient monitoring of contractor compliance with WHS Act 2011 and WHS Regulation 2011 Ineffective incident reporting and notifiable incident escalation processes Failure to provide for worker participation in risk assessments and change management Inadequate oversight of geotechnical specialist activities (soil nailing, embankment stabilisation) from a WHS governance perspective 	4A	<ul style="list-style-type: none"> Establish a documented WHS Management System aligned with WHS Act 2011, WHS Regulation 2011 and applicable Codes of Practice (e.g. Construction Work, Excavation Work, Traffic Management) Define and document WHS roles, responsibilities and accountabilities for officers, project managers, supervisors, engineers and contractors in project-specific WHS management plans Include WHS performance requirements, reporting obligations and right-of-entry for audits within all contracts and subcontractor agreements Implement formal WHS consultation mechanisms including toolbox talks, WHS committees or health and safety representatives where applicable, with records kept Develop and implement a documented process for WHS risk assessments for kerbing, gutter construction, soil stabilisation and land reclamation activities, with periodic review Establish a notifiable incident and serious near miss escalation procedure consistent with WHS legislation including notification to the regulator where required Undertake periodic leadership WHS walks and documented inspections by officers to demonstrate due diligence obligations have been met Require geotechnical consultants and specialist stabilisation contractors to provide project-specific WHS documentation and evidence of competency, and integrate these into the overarching WHS management plan 	3H
2. Design, Engineering and Constructability Management	<ul style="list-style-type: none"> Designs for kerb, gutter and embankment stabilisation not taking into account constructability, leading to unsafe methods being used on site Inadequate geotechnical investigation data informing design of soil nailing and ground improvement techniques Lack of coordination between civil, structural and geotechnical designers resulting in unstable temporary conditions during construction Failure to design out or minimise work at height, work in confined or restricted 	4A	<ul style="list-style-type: none"> Implement a formal design risk management procedure requiring designers to identify, eliminate or minimise WHS risks through design for all roadworks, kerbing and ground stabilisation elements Require geotechnical investigations to be completed and documented to an appropriate standard (e.g. AS 1726) before finalising designs involving soil nailing, embankments and ground improvement Conduct multidisciplinary design reviews (civil, geotechnical, structural and WHS) focusing on constructability and temporary works requirements Include in design documentation clear specifications for soil nails, anchors, shotcrete, ground stabilisers, embankment batters and drainage requirements, including tolerances and testing regimes Develop standard drawings and typical details that minimise manual handling, reduce work at height and avoid unnecessary work within live traffic corridors Specify engineered temporary works designs for cut faces, shoring, access platforms and stabilised slopes where required, with nominated competent design sign-off 	2M

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	<ul style="list-style-type: none"> areas, and working adjacent to live traffic • Insufficient specification of load capacities, anchor layouts and tolerances for soil nails, retaining structures and stabilised slopes • Absence of clear hold points and inspection requirements in design documentation for critical ground stabilisation works • Inadequate drainage design leading to water ingress, erosion or slope instability during and after construction 		<ul style="list-style-type: none"> • Incorporate drainage, erosion and sediment control measures into design so that ground remains stable during staged reclamation and kerb-channel construction • Implement a design change management process requiring WHS and engineering review of any proposed field variations that may alter ground stability or traffic interface risks 	
3. Project Planning, Programming and Sequencing	<ul style="list-style-type: none"> • Inadequate planning of construction stages leading to concurrent high-risk activities in confined road corridors • Poor sequencing of land reclamation, ground stabilisation and kerbing leading to unstable work platforms and embankments • Failure to consider weather, seasonal groundwater variations and flooding in programming of soil stabilisation works • Insufficient allowance for curing times, compaction and verification testing before placing loads on newly stabilised ground • Compressed timeframes increasing pressure to bypass controls, skip inspections or work excessive hours • Lack of contingency planning for geotechnical non-conformance or unexpected ground conditions 	4A	<ul style="list-style-type: none"> • Develop a detailed construction program that stages land reclamation, ground improvement, embankment stabilisation and kerb-gutter construction so that stable working platforms are established before subsequent activities • Include weather and seasonal risk considerations in planning, such as wet season restrictions for major earthwork, soil nailing and slope stabilisation activities • Define hold points in the program for geotechnical verification, compaction testing, nail pull-out tests and concrete strength results prior to loading or traffic access • Integrate WHS risk review into program development, identifying periods of peak risk and implementing additional supervision and monitoring during these periods • Build realistic durations for quality testing, curing, inspections and regulatory approvals into the baseline program to avoid compressed scheduling • Prepare contingency methodologies and design options for managing unsuitable material, unexpected groundwater, soft spots or slope failures • Coordinate the program with traffic management staging plans to minimise worker exposure to live traffic and maintain safe access/egress routes • Review the program regularly with supervisors, engineers and HSRs and update risk assessments when major sequencing changes occur 	2M
4. Contractor, Subcontractor and Supplier Management	<ul style="list-style-type: none"> • Engagement of contractors or specialist soil stabilisation providers without adequate WHS capability or experience • Inconsistent WHS standards across multiple subcontractors working within the same road corridor 	4A	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	2M

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	<ul style="list-style-type: none"> Poor coordination between traffic control providers, civil crews and geotechnical drilling/soil nailing teams Failure to verify licences, competencies and high-risk work authorisations for plant operators and drilling crews Inadequate review of subcontractor SWMS, geotechnical method statements and quality plans Commercial arrangements that incentivise unsafe shortcuts, such as unrealistic production targets or penalty-heavy contracts 		[REDACTED]	
5. Competency, Training and Supervision Systems	<ul style="list-style-type: none"> Inadequate competency of supervisors and workers undertaking kerb-gutter formwork, concrete placement and finishing within road reserves Insufficient training in geotechnical ground stabilisation techniques such as soil nailing, use of soil stabiliser plant and embankment protection systems Lack of understanding of management plans and work zones among field crews Inadequate supervision of new young workers on busy roadwork sites No system for verifying current high-risk work licences and plant operator tickets Limited awareness of WHS duties, right to cease unsafe work and incident reporting obligations 	4A	[REDACTED]	2M
6. Geotechnical Risk and Ground Stability Management	<ul style="list-style-type: none"> Unidentified or poorly characterised ground conditions leading to slope failure or subsidence under work platforms 	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> Inadequate design or control of soil nailing, shotcrete, rock bolts and other ground stabilisation systems Failure of embankments or batters during land reclamation and road widening works Insufficient control of groundwater, seepage, erosion or scour undermining kerb lines and stabilised areas Inadequate monitoring of ground movement or settlement in areas of ground improvement or deep fill Lack of emergency response planning for geotechnical failures impacting public roads or adjacent properties 		[REDACTED]	
7. Traffic Interface and Road Corridor Management	<ul style="list-style-type: none"> Workers exposed to live traffic during kerb, gutter and channel construction on existing roadways Inadequate planning or traffic control leading to confusion for motorists and unsafe work zones Interface risks between construction vehicles, soil stabilisers, dump trucks and public traffic Poorly designed or implemented detours and lane closures causing rear-end collisions or vehicle incursions into work areas Lack of integration between traffic management plans and construction sequencing or emergency access requirements 	4A	[REDACTED]	2M

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			[REDACTED]	
8. Plant, Equipment and Maintenance Systems	<ul style="list-style-type: none"> • Use of unsuitable or poorly maintained plant such as soil stabilisers, kerb machines, rollers, excavators and drilling rigs • Failure of critical safety systems including rollover protection, brakes, emergency stops and guarding • Inadequate systems for pre-start inspections, defect reporting and plant isolation on roadworks sites • Uncontrolled interaction between large mobile plant and pedestrian workers in narrow corridors • Use of non-compliant lifting equipment anchors or access systems during soil nailing and embankment works 	4A	[REDACTED]	2M
9. Materials, Chemicals and Environmental Conditions Management	<ul style="list-style-type: none"> • Exposure to cementitious soil stabilising agents and dust during concrete kerb works and ground improvement treatments • Inadequate control of silos containing dust from cutting, grinding or stabilising operations in road corridors • Unmanaged interaction of weather (heat, rain, wind) with stabilisation products, embankment surfaces and fresh concrete • Environmental contamination from stabilisation binders, washout water or fuel spills affecting soil and waterways • Degradation of ground stability due to poor control of stormwater, runoff and erosion during land reclamation 	3H	[REDACTED]	2M

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10. Work at Height, Access and Edge Protection Systems	<ul style="list-style-type: none"> Unsafe access to embankment slopes, retaining structures and soil nailing faces Inadequate systems for preventing falls from height or into excavations adjacent to roadways Failure of temporary access systems such as scaffolds, platforms or rope access points during embankment stabilisation Insufficient control of vehicle and plant operating near unprotected edges and culverts 	3H		2M
11. Fatigue, Rostering and Remote/Isolated Work Management	<ul style="list-style-type: none"> Long shifts and extended commuting associated with regional roadworks and ground reclamation projects leading to fatigue-related incidents Inadequate rostering systems failing to manage cumulative fatigue across multiple night and weekend shifts Workers operating plant or driving home after long shifts in remote areas Limited supervision and communication for workers undertaking geotechnical or survey tasks in isolated embankment or cuttings 	3H		2M
12. Health Monitoring, Welfare and Psychosocial Risk Management	<ul style="list-style-type: none"> Prolonged exposure to noise, vibration and physical strain associated with stabilising equipment, compactors and concrete works 	3H		2M

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	<ul style="list-style-type: none"> Insufficient attention to psychosocial hazards such as time pressure, remote work, public aggression near traffic disruptions and conflicts within teams Inadequate amenities, shelter and hydration for field crews working on open road corridors and embankments Lack of systems for managing pre-existing health conditions aggravated by physically demanding roadworks 		[REDACTED]	
13. Emergency Preparedness, Incident Management and Recovery	<ul style="list-style-type: none"> Lack of integrated emergency response planning for incidents such as vehicle strikes, ground collapse, plant rollovers or concrete truck incidents Poorly defined communication protocols between site teams, traffic controllers, emergency services and road authorities Inadequate on-site rescue capability for workers on embankments, in excavations or near water Failure to capture, investigate and learn from near misses and minor incidents related to ground stability or traffic interface 	4M	[REDACTED]	2M
14. Document Control, Record Keeping and Continuous Improvement	<ul style="list-style-type: none"> Outdated SWMS, traffic management plans or geotechnical designs being used on site Inconsistent or incomplete records of inspections, testing and hold points for stabilisation and kerb works Failure to track and close out corrective actions from audits, incidents and regulator interactions 	3H	[REDACTED]	1L

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	<ul style="list-style-type: none"> Lack of systematic review of WHS performance and lessons learned across multiple roadworks projects 		<div style="background-color: black; height: 15px; width: 100%;"></div> <div style="background-color: black; height: 15px; width: 100%;"></div> <div style="background-color: black; height: 15px; width: 100%;"></div>	

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 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>

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 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-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) Regulation 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>

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>

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

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.