Steel Fixing Rebar and Mesh Installation

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:

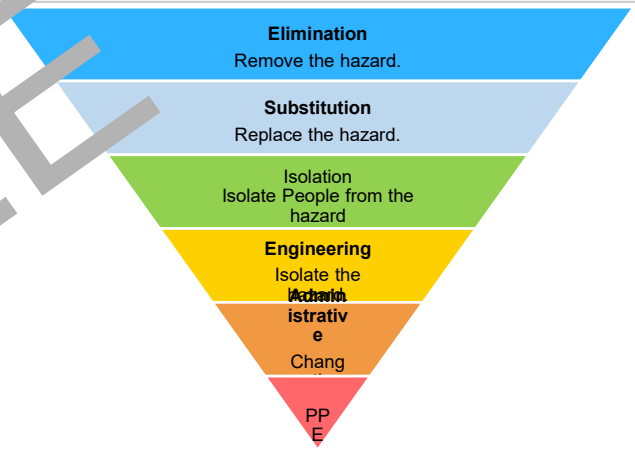
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

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 Consultation	• Ambiguous WHS responsibilities between principal contractor, steel fixing subcontractor and labour hire providers • Lack of formal WHS governance structure for steel fixing activities (no HSE plan specific to reinforcement works) • Inadequate worker consultation mechanisms, leading to unreported hazards and near misses • Failure to integrate steel fixing WHS requirements into project management plans and contracts • Insufficient leadership commitment to safe production over program and cost pressures	4A	• Develop and implement a project-specific WHS management plan that explicitly addresses steel fixing, rebar installation and reinforcement activities in line with WHS Act 2011 and WHS Regulations • Define and document clear WHS roles, responsibilities and authorities for principal contractor, steel fixing subcontractors, engineers, supervisors and HSRs • Establish a structured WHS consultation process including toolbox talks specific to reinforcement works, use of health and safety representatives, and regular safety committee meetings • Embed WHS performance expectations and reporting requirements for steel fixing into contracts and subcontractor prequalification documentation • Implement leading indicators (e.g. inspections, close call reporting, action closure rates) for reinforcement works and review them at management meetings • Require senior management participation in site safety walks focused periodically on reinforcement fixing and formwork interfaces • Ensure change management procedures are in place for design changes, construction sequence changes and methodology variations affecting steel fixing	3H
2. Design, Engineering and Constructability for Reinforcement Works	• Reinforcement designs that are difficult to build safely (congested rebar cages, awkward bar shapes, poor access for tying and welding) • Lack of buildability reviews resulting in need for on-site rework, cutting and bending in unsafe positions • Insufficient consideration of temporary stability of rebar cages, starter plates and embedded items prior to concrete pour • Design omissions leading to unplanned hot works (cutting/welding rebar and plates) in constrained areas • Inadequate detailing of couplers, lap lengths and starter bars creating trip hazards and impalement risk • No clear specification for rebar welding procedures, consumables and qualification of welders	4A	• Implement a formal design review and constructability process for reinforcement detailing, involving engineers, experienced steel fixers and site WHS representatives • Ensure design documentation includes safe access and working space requirements around reinforcement, mesh and steel plates • Specify prefabricated rebar cages and reinforcement modules where reasonably practicable to minimise in-situ tying at height and in confined spaces • Include temporary works engineering for stability of large rebar assemblies, starter cages and embedded steel plates, with certified calculations and erection procedures • Standardise reinforcement detailing (bar marks, couplers, laps, bent bars) to reduce on-site cutting, bending and welding • Develop and enforce welding and hot work specifications for rebar and plate connections, including approved procedures, heat input limits and material compatibility • Require formal design change control (RFI, design change notice) to manage any field modifications to reinforcement layout or bar sizes • Ensure drawings clearly identify areas of heightened impalement risk and specify capping or guarding requirements for protruding bars	2M
3. Contractor Selection, Competency and Resourcing	• Engagement of steel fixing subcontractors without adequate WHS systems or experience in complex reinforcement works	3H	• Implement a structured subcontractor prequalification process that assesses WHS systems, past performance and specific experience in steel fixing and reinforcement installation • Specify minimum competency requirements for leading hands, forepersons and supervisors overseeing rebar and mesh works	2M

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
	• Insufficient numbers of competent supervisors for multiple concurrent rebar crews and work fronts • Use of unqualified workers for specialist activities such as rebar welding, stressing or coupler installation • Inadequate verification of high risk work licences, white cards and trade qualifications • Under-resourcing leading to excessive overtime, fatigue and short-cutting of safety procedures		• Require documented competency verification for key tasks such as rebar welding, operating rebar bending/cutting equipment, rigging and use of powered access equipment • Maintain a competency and licence register for all steel fixing personnel and ensure it is regularly audited • Include minimum staffing and supervision levels in contracts, aligned with project complexity and shift patterns • Ensure procurement processes factor in adequate time and budget for safe reinforcement installation (avoiding unrealistic programs that drive unsafe behaviours) • Implement a fatigue management procedure that governs maximum shift lengths, overtime approvals and night work for reinforcement activities	
4. Planning, Scheduling and Work Interface Management	• Rebar installation scheduled concurrently with incompatible high-risk activities (crane lifts overhead, concrete pumping, excavation, formwork stripping) • Poor coordination between reinforcement, formwork, concreting and structural steel trades leading to congestion, access conflicts and rushed work • Inadequate planning for delivery, storage and sequencing of heavy rebar bundles and mesh sheets • Last-minute design or program changes resulting in unplanned after hours or weekend reinforcement works with limited supervision • Insufficient allowances for curing times, load limits and temporary supports before loading reinforcement with additional trades or equipment	4A	[redacted]	2M
5. Procurement of Materials, Plant and Equipment	• Supply of incorrect grade or size of rebar, mesh, couplers or plates leading to rework and unsafe modification on site • Procurement of rebar bending and cutting equipment without appropriate guarding, emergency stops or compliance certification	3H	[redacted]	2M

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
	• Inadequate supply of proprietary supports (chairs, spacers, bar runners), leading to unsafe improvisation • Lack of engineered lifting points or frames for prefabricated cages and heavy reinforcing elements • Use of poor quality or non-compliant bar caps, mesh clips and tying wire leading to failure in service		[redacted]	
6. Site Access, Layout, Storage and Housekeeping for Reinforcement	• Cluttered work areas with rebar offcuts, tie wire and mesh creating slip, trip and puncture hazards • Unstable stacking of rebar bundles and mesh sheets leading to collapse or uncontrolled movement • Poorly defined access paths through reinforcement work zones, increasing risk of falls and impalement on protruding bars • Inadequate lighting of reinforcement areas, particularly inside[redacted]ork, cores and during ea[redacted]morning or night works • No system for co[redacted]disp[redacted] of tie wire offcuts, broken bar caps a[redacted] scrap steel	3H	[redacted]	1L
7. Working at Height, Edge Protection and Impalement Risk Management	• Systemic lack of engineered edge protection and fall prevention where reinforcement is installed near open edges, penetrations and decks • Uncontrolled risk of impalement from uncapped or unguarded vertical and protruding rebar and starter bars • Inadequate access systems (improvised platforms, standing on rebar cages or mesh) for tying steel at height or within deep forms • Insufficient planning for safe access to walls, columns, cores and elevated	4A	[redacted]	2M

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
	reinforcement resulting in falls through or from reinforcement • Poorly managed rescue and emergency response arrangements for falls within rebar cages or congested areas		[redacted]	
8. Manual Handling, Ergonomics and Musculoskeletal Risk Management	• Systemic reliance on manual lifting and carrying of heavy rebar bundles, mesh sheets and steel plates • Repetitive bending, twisting and overhead reaching when tying reinforcement in congested or low-clearance areas • Inadequate mechanical aids (cranes, hoists, trolleys) leading to overexertion and long-term musculoskeletal disorders • Poor planning of rebar cutting and bending operations resulting in awkward postures and extended manual handling distances • Insufficient training and supervision o team lifting techniques, load limits and use of aids	3H	[redacted]	2M
9. Mechanical Plant, Tools and Equipment Management	• Deficient inspecti and maintenance systems for rebar nders, sh guillotines and port g tools • Use of unsuitable or unguarded po er tools for cutting rebar and mesh, ding to ejection of offcuts and with blades • Inadequate separation of workers from operating plant such as cranes, telehandlers and forklifts moving reinforcement • Lack of lockout–tagout procedures during maintenance or clearing jams in reinforcement-processing equipment • Improper selection or poor maintenance of welding machines, leads and electrodes for rebar welding and attachment of plates	4A	[redacted]	2M

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
10. Welding, Hot Work and Fire Risk Management for Reinforcement	• Uncontrolled hot work on rebar and steel plates leading to fire in formwork, falsework, scaffolding or combustible materials • Inadequate hot work permitting and supervision, especially within enclosed spaces or near flammable substances • Exposure of workers to welding fumes, gases and UV radiation due to poor ventilation and lack of systemic controls • Lack of standardised welding procedures for rebar, resulting in structural defects and rework • Ineffective control of grinding, oxy-cutting and gouging on reinforcement with sparks travelling to adjacent work areas	4A	[redacted]	2M
11. Environmental Conditions, Fatigue and Psychosocial Risks	• Exposure to extreme heat, cold, wind or rain while handling steel, increasing risk of heat stress, reduced grip and slips • Work programmes that promote long shifts and insufficient rest, leading to fatigue and impaired decision-making • Production and schedule pressures resulting in risk tolerance, shortcuts and under-reporting of hazards • Psychosocial stress from high physical demand, noisy environments and crowded workfaces • Inadequate systems for acclimatisation and monitoring of new or young workers in demanding reinforcement roles	3H	[redacted]	2M
12. Training, Induction and Information for Steel Fixing Activities	• Generic site inductions that do not adequately address specific risks of steel fixing, mesh handling and impalement • Inconsistent understanding among workers of reinforcement drawings, bar	3H	[redacted]	1L

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
	schedules and specifications leading to rework and unsafe improvisation • Limited training on safe tying techniques, ergonomic practices and use of mechanical aids • Lack of awareness of statutory obligations under the WHS Act 2011 among supervisors and workers • Inadequate communication of changes to reinforcement designs, methods or sequencing		[redacted]	
13. Incident Reporting, Monitoring and Continuous Improvement	• Under-reporting of near misses, minor injuries and reinforcement-related equipment failures • Lack of systematic analysis of incidents involving rebar, mesh and plates, leading to repeat events • Poor tracking and close-out of corrective and preventive actions from inspections and investigations • Inadequate sharing of lessons learned between projects or between principal contractor and subcontractors • Failure to monitor leading indicators specific to steel fixing (e.g., cap compliance, housekeeping scores, hot work permit quality)	2H	[redacted]	1L
14. Emergency Preparedness and Response for Reinforcement Works	• Emergency plans that do not reflect the specific challenges of rescuing injured workers from within rebar cages, cores or elevated decks • Inadequate access for emergency services to reinforcement work zones due to poor site layout or congestion • Lack of first aid resources and trained first aiders during high-risk reinforcement activities and shifts • Insufficient planning for impalement injuries, crush injuries from collapsing	3H	[redacted]	2M

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
	rebar bundles, or burns from welding activities • Poor communication systems for summoning assistance from remote or noisy reinforcing areas		[redacted]	

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