

Fabrication

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:	
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 Management Systems & Legal Compliance	<ul style="list-style-type: none"> Absence of a documented WHS management system aligned with WHS Act 2011 and WHS Regulations Unclear allocation of WHS responsibilities for fabrication activities (PCBU, officers, supervisors, workers) Inadequate consultation mechanisms with fabricators, welders and fitters on WHS issues Lack of documented WHS objectives, KPIs and review processes for fabrication operations Failure to keep and review WHS records (training, incident reports, risk assessments, inspections) No formal process to review changes in legislation, Australian Standards and manufacturer guidance relevant to fabrication (e.g. welding, lifting, press equipment) Weak or inconsistent enforcement of WHS policies and procedures by supervisors and managers 	4A	<ul style="list-style-type: none"> Establish and maintain a formal WHS management system consistent with WHS Act 2011, WHS Regulations and AS/NZS ISO 45001, specifically referencing fabrication activities Define and document WHS roles, responsibilities and accountabilities for officers, supervisors, health and safety representatives and workers involved in fabrication Implement structured consultation arrangements (e.g. WHS committee, toolbox talks, HSRs) with specific agenda items for fabrication risks and controls Set measurable WHS objectives and KPIs for fabrication (e.g. audit completion rates, close-out of corrective actions, training completion, incident trends) and review quarterly Develop and maintain a WHS legal and standards register covering relevant welding, fabrication, machinery and plant standards, and assign responsibility for periodic review and updates Implement a documented change management procedure for new fabrication processes, new plant (e.g. presses, welders, CNC equipment), and new product lines such as roll cages, trailers, steel spools and unique parts Introduce a formal non-conformance and corrective action system to track WHS issues, assign actions, and verify effectiveness Conduct regular internal WHS audits of fabrication operations and management processes, with findings reported to senior management 	3H
2. Design, Engineering & Verification (Roll Cages, Trailers, Steel Spools, Unique Parts)	<ul style="list-style-type: none"> Inadequate engineering design causing structural failure of fabricated components (e.g. roll cages, trailer frames, steel spools, unique parts) Non-compliance with relevant Australian Standards and design codes for protective structures, trailers and load-bearing components Poor communication between designers and fabricators leading to unsafe or unbuildable designs Insufficient design verification, peer review or certification of high-risk fabricated products Lack of systematic risk assessment during design phase for manufacturability, ergonomic handling, 	4A	<ul style="list-style-type: none"> Implement a formal engineering design control procedure for all fabricated products, including roll cages, trailer components, steel spools and unique parts Ensure designs comply with relevant Australian Standards and codes (e.g. AS/NZS 1554 welding, AS/NZS 1170 loading, applicable vehicle and trailer standards, and motorsport or client-specific roll cage standards) Require that high-risk and safety-critical designs (e.g. roll-over protection, lifting frames, pressure-rated spools) are prepared or approved by a competent engineer with appropriate registration where required Introduce a documented design review and verification process, including peer review, calculation checks and, where applicable, finite element or load analysis Ensure all design outputs (drawings, models, specifications) clearly specify material grades, welding processes, NDT requirements and critical dimensions/tolerances Implement a formal engineering change control process so that any modifications during fabrication are risk assessed, documented and re-approved by an authorised designer/engineer Incorporate WHS considerations into design (Design for Safety) including safe lifting points, jigs and fixtures, access for welding, inspection, maintenance and assembly 	2M

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	<ul style="list-style-type: none"> welding accessibility and inspection access Design changes during fabrication not formally reviewed or re-approved by competent engineering personnel Use of incorrect or incompatible materials due to unclear or incomplete design documentation 		<ul style="list-style-type: none"> Maintain a controlled document system to ensure only current, approved design documents are in use on the workshop floor 	
3. Materials Management & Supply Chain Control	<ul style="list-style-type: none"> Use of incorrect material grades or non-conforming steel sections in structural or safety-critical fabrications Lack of material traceability for critical components (e.g. roll cage tubing, load-bearing trailer members, steel spools used for tensioned cable or hose) Poor storage practices leading to corrosion, contamination or damage of materials before use Unverified supplier quality systems and inconsistent documentation (mill certificates, test reports) Inadequate verification of consumables (welding wire, shielding gas, fasteners) for compatibility with specified procedures Uncontrolled substitution of materials due to stock shortages or cost pressures 	3H	<ul style="list-style-type: none"> Implement a documented material specification and acceptance procedure for all structural and safety-critical fabrications Require mill certificates and equivalent documentation for critical materials (e.g. roll cage tube, high-strength structural members, pressure-rated spool components) and verify against design requirements Establish a material traceability system for high-risk products, including heat numbers, batch tracking and linkage to fabrication records Pre-qualify suppliers based on quality and WHS performance, and conduct periodic supplier performance reviews and audits where appropriate Provide secure, labelled and protected storage areas for steel and consumables to prevent corrosion, mix-ups and mechanical damage Introduce a formal material substitution approval process requiring engineering sign-off and updated documentation Implement incoming goods inspection criteria and checklists for critical materials and consumables Train storepersons and supervisors in identification of material markings, certificates and segregation of non-conforming materials 	2M
4. Plant, Equipment & Maintenance Systems	<ul style="list-style-type: none"> Lack of systematic inspection and maintenance of fabrication plant (welders, grinders, presses, cutting equipment, cranes, hoists, forklifts) Use of defective or unguarded machinery leading to entanglement, crushing or amputation Failure of lifting equipment and accessories when handling heavy fabrications (trailers, spools, roll cages, frames) Inadequate pre-start checks and fault reporting for critical plant 	4A	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	2M

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	<ul style="list-style-type: none"> Uncontrolled modifications to plant, jigs and fixtures without engineering review Non-compliance with statutory inspection requirements for lifting gear, pressure equipment and electrical plant Use of homemade lifting devices or support stands without design verification 		[REDACTED]	
5. Welding, Cutting & Hot Work Management	<ul style="list-style-type: none"> Systemic exposure to welding fumes, gases and particulates due to inadequate fume control Fire and explosion risk from poorly controlled hot work on trailers, spools and unique parts, particularly where flammable residues may be present Inconsistent application of welding procedures leading to defective welds in safety-critical structures such as roll cages and trailer drawbars Inadequate segregation of hot work areas from combustible materials and general traffic routes Lack of hot work permits and fire watch arrangements in non-designated areas Inadequate qualification, competency verification, or welders for specific processes and materials Poor housekeeping of gas cylinders, hoses and regulators leading to mechanical damage and leaks 	4A	[REDACTED]	2M
6. Workshop Layout, Traffic Management & Material Handling	<ul style="list-style-type: none"> Congested workshop layout causing collision risks between pedestrians, forklifts and mobile plant Poorly designed material flow causing unnecessary manual handling of heavy steel sections, trailers, spools and fabricated assemblies Inadequate segregation of fabrication bays from vehicle access and load-out areas 	3H	[REDACTED]	2M

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	<ul style="list-style-type: none"> • Uncontrolled loading and unloading of trailers, steel spools and large fabrications in shared traffic zones • Lack of designated storage for completed roll cages, trailer components and unique parts leading to trip hazards and unstable stacking • Inadequate planning of lifting operations for large or awkward fabrications 		[REDACTED]	
7. Manual Handling, Ergonomics & Work Organisation	<ul style="list-style-type: none"> • Repetitive and forceful manual handling of steel plate, sections, roll cage components and trailer parts • Awkward postures during welding, grinding and fitting of underbody and overhead components on trailers and spools • Poor job design leading to extended static postures and fatigue • Inadequate planning of work sequencing resulting in unnecessary rework, repositioning and double-handling • Lack of guidance on safe manual handling limits and team lifting of heavier components 	3H	[REDACTED]	2M
8. Hazardous Substances, Fumes & Noise Exposure	<ul style="list-style-type: none"> • Chronic exposure to welding fumes, cutting fumes and grinding dust without adequate controls • Inhalation of vapours and mists from paints, solvents, anti-spatter, cutting fluids and adhesives • Excessive noise from grinding, cutting, hammering and plant operations leading to hearing loss 	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> Inadequate storage, labelling and segregation of hazardous chemicals Lack of systematic health monitoring for workers exposed to welding fumes and noise Insufficient information and training on safety data sheets (SDS) and correct use of respiratory and hearing protection 		[REDACTED]	
9. Electrical Safety, Energy Isolation & Lock-out/Tag-out	<ul style="list-style-type: none"> Uncontrolled energisation of plant during maintenance or adjustment Use of damaged or non-compliant electrical leads, portable tools and welding cables Inadequate isolation procedures for multi-energy systems (electrical, hydraulic, pneumatic, stored mechanical energy) Overloading of power boards and unsafe use of power boards and extension leads in fabrication bays Lack of competency authorisation controls for persons performing electrical work or isolation 		[REDACTED]	1L
10. Competency, Training & Supervision	<ul style="list-style-type: none"> Workers performing welding, cutting, rigging and fabrication tasks without verified competency Supervisors not adequately trained in WHS duties, risk management and safe work supervision Inconsistent induction processes for new workers, apprentices and labour hire personnel Limited understanding of specific risks associated with roll cage manufacture, trailer construction, spool fabrication and unique part prototyping 	3H	[REDACTED]	2M

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	<ul style="list-style-type: none"> Failure to provide refresher training when processes, equipment or standards change 		[REDACTED]	
11. Quality Assurance, Inspection & Testing of Fabrications	<ul style="list-style-type: none"> Latent defects in welds, materials or assembly of roll cages, trailers, steel spools and unique parts not detected prior to delivery Inconsistent inspection standards and acceptance criteria across different product lines and shifts Inadequate documentation of inspections, non-destructive testing (NDT) and final sign-off Pressure to meet production deadlines leading to bypassing or shortening of inspection and testing regimes 	3H	[REDACTED]	2M
12. Contractor, Client & Visitor Management	<ul style="list-style-type: none"> Contractors performing high-risk activities (e.g. electrical, crane servicing, shot blasting, coating) without alignment to site WHS systems Visitors and clients entering fabrication and testing areas without adequate induction or supervision Interface risks where client-supplied designs, materials or equipment do not meet WHS or quality requirements Confusion regarding responsibility for WHS controls when multiple PCBUs share the fabrication workplace 	3H	[REDACTED]	2M

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			[REDACTED]	
13. Emergency Preparedness & Incident Management	<ul style="list-style-type: none"> • Delayed or ineffective response to fires, serious injuries or structural collapse in fabrication areas • Inadequate emergency equipment placement and maintenance (fire extinguishers, first aid kits, spill kits) • Poor communication and coordination during emergencies involving multiple work groups and contractors • Under-reporting of near misses and minor incidents that could indicate systemic failures 	3H	[REDACTED]	1L
14. Fatigue, Work Scheduling & Psychosocial Risk Management	<ul style="list-style-type: none"> • Extended hours, shift work or compressed schedules leading to fatigue and reduced attention to detail in fabrication tasks • Production pressure causing rush or rule-breaking and reduced focus on safety and quality • Poor communication, role conflict or inadequate support for apprentices and new workers • Inadequate management of psychosocial hazards such as bullying, harassment or unreasonable work demands in high-pressure fabrication environments 	3H	[REDACTED]	2M

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.