Load Restraint Heavy Machinery and Oversized Loads

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:

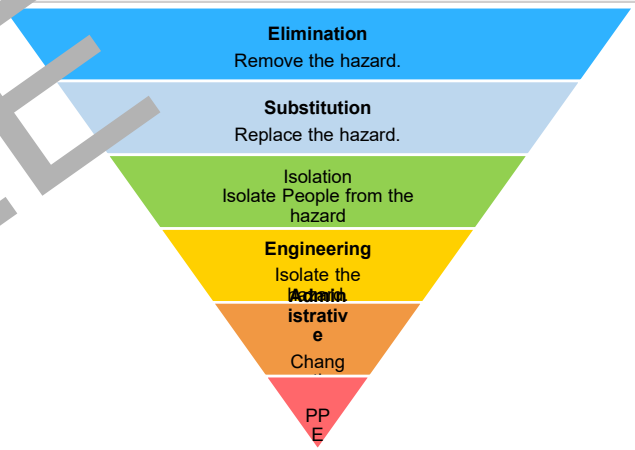
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

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. Governance, WHS Duties and Legal Compliance	• Lack of clear WHS governance structure for heavy machinery load restraint and oversized transport • Failure to understand and implement obligations under WHS Act 2011, Heavy Vehicle National Law (HVNL) and Chain of Responsibility (CoR) • No documented load restraint policy aligned with National Transport Commission (NTC) Load Restraint Guide • Inadequate allocation of resources (budget, people, time) to manage load restraint and oversized load risks • Poor integration of WHS risk management into overall business planning and transport contracts • Lack of due diligence by officers to verify that systems for chain binders, lashing equipment and oversized load handling are implemented and effective	4A	• Develop and endorse a corporate WHS Poli[illegible]and Heavy Vehicle Safety Policy that explicitly covers load restraint of heavy machinery, oversize[illegible]oads, and u[illegible]of chains, tie-downs and lashing equipment • Establish a WHS governance structure with [illegible]fine[illegible]oles, responsibilities and reporting lines for directors, managers, schedulers, drivers, dogm[illegible]ggers and m[illegible]tenance personnel • Implement a documented Le[illegible]l and Other Requi[illegible]ments [illegible]egister covering WHS Act 2011, WHS Regulations, HVNL, Australian [illegible]d Restraint Guide[illegible]NZS 4380 (webbing tie-downs) and AS/NZS 4344 (cargo restrai[illegible]s) • Include Cha[illegible]r Respons[illegible]ity (Co[illegible]and W[illegible]S due diligence obligations in induction and ongoing training for of[illegible]rs and sen[illegible]r manage[illegible] • Emb[illegible]WHS a[illegible]lo[illegible]estraint requirements into contracts, purchase orders and service level agree[illegible]e[illegible]with t[illegible]sport providers, contractors and plant hire suppliers • Unde[illegible]ke[illegible]gular m[illegible]agement reviews (at least annually) of the load restraint and oversized transport system, [illegible]clu[illegible]n audit [illegible]tcomes, incident trends and corrective actions • [illegible]sure [illegible]oard a[illegible]senior management receive quarterly WHS performance reports specific to heavy mach[illegible]y and oversized load transport risks	3H
2. Fleet and Equipment Procurement, Design and Compatibility	• Selection of prime mov[illegible]ilers and floats that are not su[illegible]ble for heavy machinery or overs[illegible]ed loads • Incompatible tie-d[illegible]n p[illegible]t[illegible]between plant and transport v[illegible]icles leading t[illegible]ineffective restraint • Insufficient number or c[illegible]apacity of lashing points on trailers for rated chains and straps • Lack of engineered attachment points for chain binders and lashing equipment on machinery • Failure to consider oversize/overmass requirements (axle loads, ground clearance, deck ratings) at procurement stage • Absence of standardisation in restraint devices (mixed brands, ratings, and configurations) increasing likelihood of misuse	4A	• Implement a formal specification and procurement standard for heavy haulage vehicles, trailers, low loaders and floats that includes requirements for load restraint and oversized load capacity • Require engineering review and certification of load platforms, headboards, deck strength, anchor points and lashing systems for the maximum intended machinery and oversize loads • Standardise the types, ratings and configurations of chains, chain binders, tensioners, webbing straps, edge protectors and corner protectors used across the fleet • Ensure all plant and machinery procured or hired include clearly rated and labelled lifting and tie-down points compatible with standard transport restraints • Include oversize and overmass capability criteria (e.g. extendable decks, widening floats, ramps, winches) in purchase and lease contracts for transport equipment • Maintain an asset register capturing load ratings, restraint point layouts and approved configurations for each trailer and prime mover combination • Require supplier documentation and compliance certificates for restraint equipment to relevant Australian Standards and NTC Load Restraint Guide	2M

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3. Load Restraint Engineering, Standards and Technical Guidelines	• No engineered methodology for calculating required restraint force on heavy machinery and oversized loads • Reliance on informal or outdated rules-of-thumb for chain and strap selection and placement • Failure to account for dynamic forces, road conditions and braking performance when securing loads • Use of non-rated or inadequately rated lashing equipment, tie-downs and chain binders • Inconsistent application of blocking, chocking and friction controls for machinery with tracks or rubber tyres • Lack of standard load plans for recurring machinery and oversized transport tasks	4A	• Adopt the current National Transport Commission L d Restraint Guide as the minimum technical standard and integrate its requirements into com y procedures • Engage a competent engineer or load res t specialist to develop standard load restraint plans for key machinery types and oversized configuratio including mber, type and layout of restraints • Develop engineering calculations and decisio s (e.g. charts apps, calculators) to determine the minimum lashing capacity re ired for various m inery weig and transport conditions • Standardise the method of re int (direct lashing ict al tie-down, blocking, bracing) for machinery categories such as tr d plant, heeled loaders, e vators and mobile cranes • Implement a f al appro l and ision pro s for load restraint diagrams, ensuring they are version controlled an ccessible in abs, de s a oad planning software • Spe minim Wor g Load Limits (WLL) for chains, binders, webbing straps and anchor points, and prohib use o ated or uncertified equipment • Provi al guid and example photos of compliant restraint setups for typical loads and oversized configu tion.	2M
4. Contractor, Driver and Operator Competency Management	• Inadequate training of drivers, plant operators and dogmen in heavy machinery load restraint principles • Contract drivers eng out competency verifica n in securing oversized loads a using lashing equipment • Misuse of chain binders, over-tensioning or under-tensioning lash g equipment due to lack of i truc n • Failure to recognise out-of-gauge dimensions and special permit conditions • Poor understanding of interaction between plant operation (loading/unloading) and vehicle stability • No structured refresher training on evolving standards and lessons from incidents	4A	[redacted]	2M
5. Planning, Scheduling and Journey	• Inadequate pre-trip planning for route constraints, clearances and road conditions for oversized loads	4A		2M

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Management for Oversized Loads	• Time pressure and unrealistic schedules leading to shortcuts in load restraint or pre-departure checks • Failure to identify requirements for pilot vehicles, escort arrangements and police escorts where applicable • Lack of planning for loading/unloading locations, ground conditions and exclusion zones • Insufficient consideration of weather, wind and restricted visibility impacting load stability • Poor management of refuelling and rest stops for oversize combinations		[redacted]	
6. Site and Traffic Management at Loading and Unloading Locations	• Uncontrolled interaction between mobile plant, trucks and pedestrians during loading/unloading of machinery • Inadequate traffic ma[illegible]nt plans for depots, client site[illegible]and roadside loading areas • Poor ground cond[illegible]soil, uneven surfaces, slopes) impacting stability of prime mover and trailer d[illegible]ng plant loading and unloading • Insufficient lighting during early morning or night operations, increasing risk of falls and load shift • Lack of exclusion zones and spotters when operating ramps, winches and lashing equipment • Congested sites leading to short-cuts in correct positioning and securing of machinery	3H	[redacted]	2M
7. Equipment Inspection, Maintenance and Asset Management	• Failure of chains, chain binders, webbing straps or lashing equipment due to wear, damage or incorrect storage	4A	[redacted]	2M

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	• Inadequate inspection and maintenance regime for prime movers, low loaders, ramps and winches • Defective anchor points, headboards or decks not detected before use • Use of incompatible or modified restraint components without reassessment of capacity • No system for tracking service life and retirement of restraint equipment • Poor record keeping on maintenance of ramps, hydraulic systems and braking systems		[redacted]	
8. Load Planning, Configuration and Mass Management	• Incorrect assessment of machinery mass, centre of gravity and load distribution • Overloading of axles or exceeding deck or ramp ratings when loading heavy plant • Improper placement of machinery on trailer leading to instabi[redacted]duced braking effectiveness • Failure to consid[redacted]the impact [redacted] attachments (buck[redacted] counterweights) on mass and dimensions • Inadequate consideratio[redacted]ltiple smaller items loaded with heavy machinery (tooling, attachments, fuel tanks) • No formal system for verifying compliance with mass, dimension and permit limits	4A	[redacted]	2M
9. Safe Systems for Loading, Unloading and Plant Interface	• Instability of plant when driving on or off ramps and floats • Uncontrolled movement of machinery due to inadequate chocking, blocking or brake application during loading/unloading	3H	[redacted]	2M

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	• Crush and pinch hazards when positioning machinery and applying restraints • Inadequate communication between plant operators, drivers and spotters • Failure to isolate plant (park brakes, attachments lowered, engines off) before final securing • Reliance on ad hoc methods for difficult loads rather than documented systems		[redacted]	
10. Operational Control of Tie-Downs, Chains, Binders and Lashing Equipment	• Incorrect selection of chains, binders or straps with inadequate Working Load Limit for heavy machinery • Poor positioning of lashing equipment leading to ineffective r[illegible]or damage to machinery and e[illegible]pment • Over-reliance on [illegible]ction with adequate direct res[illegible]blocking or tracked or wheeled plant • Inconsistent torque or tension a[illegible]ed to chain binders and ratc[illegible]tems • No system for verifying that the required number of lashings and patterns are used for each load type • Use of inappropriate lashing angles reducing effective load restraint capacity	4A	[redacted]	2M
11. Fatigue, Supervision, and Safe Behaviour Management	• Driver and loader fatigue leading to errors in load restraint setup or inspection • Supervisors prioritising schedule or cost over safe load restraint practices	3H	[redacted]	2M

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	• Normalisation of deviance where unsafe shortcuts become accepted practice • Insufficient monitoring of remote or after-hours load restraint activities • Poor reporting culture resulting in unreported near misses and minor load shifts • Lack of behavioural expectations regarding working under suspended loads or within risk zones		[redacted]	
12. Communications, Documentation and Information Management	• Outdated or inaccessible procedures, load plans and restraint diagrams • Inconsistent communication of permit conditions, route restrictions and special instructions to drivers • Reliance on verbal instructions leadin to misunderstandings about load securing requirements • Lack of records t emonstrate compliance with W S and CoP obligations • Information silos between planning workshop, drivers and site perso el • Failure to communicate equipment limitations, defects or temporary restrictions	3H	[redacted]	1L
13. Emergency Preparedness, Incident Response and Recovery	• Lack of procedures for managing load shift, restraint failure or machinery movement during transit • Unclear responsibilities for emergency response when oversized loads are involved in road incidents • Inadequate training in the safe use of recovery equipment for heavy machinery	3H	[redacted]	2M

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	• Poor coordination with emergency services regarding specific risks of heavy plant and abnormal loads • Failure to capture and analyse incident data to prevent recurrence • No contingency plan for breakdowns or unplanned stops with oversized combinations		[redacted]	
14. Audit, Verification and Continuous Improvement	• Assumption that policies and procedures are effective without field verification • Non-compliance with load restraint requirements going undetected over long periods • Failure to incorporate regulatory updates and industry best practice into systems • Inadequate follow up of corrective actions from incidents and audits • Lack of performance indicators specific to load restraint and oversized load safety • Learning from external incidents and alerts not systematically captured		[redacted]	1L

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