Tilt Up Concrete Panels			
Business Name:		ABN:	
Business Address:			
Contact Person:	Phone:	Email:	

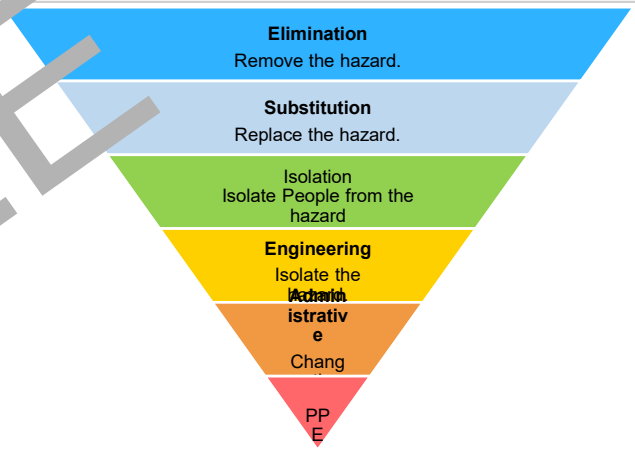
THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT		
Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.		
Full Name:		
Signature:	Title:	Date:

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, Legal Compliance and WHS Management System	• Inadequate understanding by senior management of WHS Act 2011 and WHS Regulations as they relate to tilt-up and precast concrete work • Absence of a documented WHS management system specifically addressing tilt-up concrete panel and brace use, including design, temporary works and erection phases • Failure to clearly allocate PCBU duties and interfaces between principal contractor, tilt-up contractor, engineer, crane provider and brace supplier • Lack of documented consultation, cooperation and coordination arrangements between PCBUs involved in the project • Insufficient integration of Safe Work Australia Codes of Practice (Construction Work, Managing the Risk of Falls, Managing the Risk of Plant in the Workplace) and industry guidance for tilt-up construction • No systematic review of lessons learned or incident data from previous tilt-up projects to improve	High	• Establish, document and maintain a WHS management system that explicitly covers tilt-up concrete works and brace systems, aligned with WHS Act 2011, WHS Regulations and relevant Codes of Practice • Define and document PCBU roles, responsibilities and interfaces for tilt-up panels and braces in contracts, project WHS plans and coordination agreements • Require that a competent WHS advisor and a competent structural engineer are involved in planning, review and approval of all tilt-up and bracing arrangements • Implement a documented legal and standards register covering WHS Act 2011, WHS Regulations, Australian Standards (e.g. AS 3850 series for prefabricated concrete elements, AS 4100, AS 3610 as relevant) and ensure periodic review • Formalise consultation arrangements (e.g. coordination meetings, design reviews, toolbox talks) with all PCBUs to address shared risks relating to panel lifting, propping, bracing and temporary stability • Include tilt-up and brace-specific risk management requirements in project WHS plans, including criteria for temporary works design, inspection, change control and sign-off • Implement a governance process requiring senior management review of critical lift and bracing strategies on high-risk projects, including sign-off of key risk controls • Establish a process to capture, analyse and share lessons learned, incidents, near misses and audit findings related to tilt-up and temporary bracing, and incorporate these into system improvements	Medium
2. Design, Engineering and Temporary Works (Panels and Braces)	• Inadequate structural design of panels, lifting inserts and brace systems for site-specific conditions, including wind loads and construction stages • Use of generic design details or supplier data sheets without competent engineering verification for the actual project configuration • No engineer-certified temporary works design covering bracing layout, brace capacities, anchorages, panel sequence and construction load cases • Insufficient consideration of interaction between braces, foundations, slabs, cast-in ferrules and adjacent structures	High	• Require all tilt-up panels, lifting systems and temporary bracing (including anchors and fixings) to be designed, checked and certified by a suitably qualified and experienced structural engineer • Mandate project-specific temporary works design documentation that includes design calculations, panel and brace layout drawings, brace sizing, anchor capacities, slab capacity checks, wind design assumptions and construction staging • Ensure that brace manufacturer's data (capacity charts, installation requirements, limitations) is formally reviewed by the project engineer and incorporated into the certified design • Implement a design management procedure requiring independent design review for critical elements such as tall slender panels, heavily loaded braces or panels exposed to high wind loads • Develop and issue a clear design basis statement summarising key assumptions, including minimum concrete strengths, maximum allowable wind speed during erection, brace pre-set angles, minimum fixings and any restrictions on back-propping or removal of braces • Introduce a formal temporary works change control procedure, requiring written engineering approval for any changes to brace numbers, locations, fixings, panel lifting points or slab thickening details	Medium

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	• Poor design communication resulting in site crews not understanding limitations, exclusions and design assumptions (e.g. maximum wind speed, not to remove braces before certain strength is reached) • Uncontrolled design changes or field modifications to brace locations, panel geometry or anchor points without engineering review and approval		• Ensure that certified drawings and design limitations are incorporated into the project WHS plan, lift studies and erection procedures, and made readily available to site supervision and crane crews • Schedule design review workshops (PCBU coordination meetings) prior to commencement of erection to confirm buildability, brace access, crane reach, exclusion zones and stability requirements	
3. Procurement, Supply Chain and Equipment Selection (Panels, Braces and Anchors)	• Procurement of tilt-up braces, cast-in ferrules, lifting inserts and anchors without verifying conformity to relevant Australian Standards and engineering requirements • Use of non-genuine, incompatible or untested brace components (pins, turnbuckles, base plates, screws, anchors) that do not meet design capacity • Inadequate quality assurance for precast or tilt-up panels (e.g. incorrect reinforcement, poor concrete strength, mis-located inserts) affecting brace and lifting performance • Lack of traceability of critical components, making it impossible to confirm ratings, batch testing or certification • Procurement decisions driven primarily by cost and availability rather than engineering design and WHS requirements • Failure to ensure suppliers provide complete technical documentation, including installation instructions, capacity charts and maintenance requirements for braces	High	• Establish procurement procedures requiring verification that braces, lifting systems and anchor components comply with relevant Australian Standards and are compatible with the engineer's design • Pre-qualify brace and hardware suppliers based on demonstrated technical competence, product certification, quality management systems and previous performance on tilt-up projects • Include explicit WHS and engineering requirements in purchase orders and supply contracts, such as required capacities, material specifications, documentation, test certificates and warranties • Implement a materials receipt and inspection procedure for braces, anchors and lifting gear, including verification against approved specifications, tags and engineer's schedules • Require panel manufacturers to operate under a documented quality assurance system with inspection and test plans, concrete strength verification and positional checks for inserts and ferrules • Maintain a register of all braces and critical components, including identification numbers, ratings, manufacturer, test results and inspection history • Prohibit substitution of any brace or anchor products without prior written approval from the project engineer and WHS coordinator • Ensure suppliers provide up-to-date product manuals, design data and limitations, and integrate these documents into the project WHS and engineering files	Medium
4. Planning, Risk Management and Engineering Controls Integration	• Inadequate pre-construction planning that fails to identify high-risk scenarios such as tall or slender panels, complex brace arrangements or constrained sites • Risk assessments focused only on physical tasks rather than underlying	High	[redacted]	Medium

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	system and management controls for panel stability and brace reliability • Insufficient integration of crane lift studies, brace design and panel erection sequence, leading to unplanned loading on braces or partially braced panels • No documented criteria for when work must cease due to adverse conditions (e.g. high winds affecting brace stability) • Failure to identify and plan for risks arising from concurrent works around braced panels (e.g. earthworks, traffic, demolition) • Absence of structured pre-start planning processes to verify that system requirements (design approvals, inspections, certifications) are in place before erection		[redacted]	
5. Contractor Management and PCBU Interface	• Unclear division of responsibilities between principal contractor, tilt-up subcontractor, crane provider, brace supplier and engineer for panel stability and brace integrity • Subcontractors implementing their own ad-hoc methods for bracing and panel support without alignment to the overarching project WHS plan • Inadequate review of subcontractor competencies, systems and procedures specifically relating to tilt-up and temporary bracing • Failure to communicate design changes, risk controls or incidents between PCBUs in a timely and structured manner • Commercial pressures on subcontractors leading to shortcuts in brace installation, inspection or sign-off processes	High	[redacted]	Medium

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			[redacted]	
6. Competency, Training and Supervision (Tilt-Up and Braces)	• Supervisors and workers lacking specific competency in tilt-up construction, temporary works and brace systems • No formal training on manufacturer requirements for brace installation, adjustment, inspection and limitations • Insufficient understanding of the structural behaviour of braced panels, including how wind and construction loads affect stability • Inadequate supervision of critical stages such as initial bracing, tensioning, adjustment and release of braces • Over-reliance on informal on-the-job training without verificati competency for high isk roles • Limited awarene of early wa ing signs of brace or p Lin ity (e cracking, movement, anchor pull-out and the appropriate escalation proc s	High	[redacted]	Medium
7. Inspection, Testing, Maintenance and Verification of Braces and Fixings	• Braces, pins, turnbuckl plates and anchors being used without prior inspection or with hidden defects such as bending, corrosion or thread damage • Absence of scheduled inspection and maintenance program for braces and associated hardware • Failure to verify that cast-in anchors or drilled fixings achieve required embedment, capacity and torque before relying on them for panel stability • Inadequate documentation and traceability of inspections, leading to	High	[redacted]	Medium

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	braces being missed or double-counted in checks • No systematic process to quarantine and remove from service damaged, non-compliant or unidentified brace components • Inspections focused only on visual appearance rather than alignment with certified engineering designs		[redacted]	
8. Site Layout, Stability and Interaction with Other Works	• Inadequate planning of site layout resulting in braces projecting into trafficable areas, vehicle routes or areas of concurrent work • Uncontrolled interaction between mobile plant, delivery vehicles and braced panels, increasing the risk of impact or vibration affecting stability • Soil conditions, slab edges or foundations not adequately assessed support brace loads, leading to settlement or failure at brace footings o anchors • Lack of control ov ground conditions beneath brace fee nd anchors including water sat tion emmi g or compaction from other works • Scaffolding, access platforms or material storage placed i hat interfere with brace angles or loading paths • No system in place to manage changes to site layout that could compromise brace effectiveness or access for inspection	[illegible]	[redacted]	Medium
9. Environmental and Weather Management (Including Wind Effects on Braced Panels)	• Braced panels exposed to wind loads beyond design assumptions, leading to overstressing of braces, anchors and panels • Lack of reliable site weather monitoring and forecasting to inform decisions about panel erection and brace integrity	High	[redacted]	Medium

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	• No defined triggers for ceasing work or evacuating areas when wind speeds or storm conditions threaten stability of temporarily braced panels • Environmental conditions such as heavy rain or flooding undermining brace footings, slabs or surrounding soil support • Heat, dust or poor visibility conditions leading to misjudgement of panel movement or brace condition during inspections		[redacted]	
10. Documentation, Records, Change Management and Communication	• Incomplete or inconsistent documentation of engineering designs, approvals, inspections and sign-offs for braces and panels • Changes to brace layouts, panel geometry or construction sequence not properly documented or communicated to all affected parties • Workers relying on outdated drawings or superseded procedures leading to installation of braces inconsistent with current design • Lack of centralised control over critical records, resulting in missing evidence of compliance or inability to verify decisions after incidents • Informal communication channels leading to misunderstandings about brace removal timing, limit states or restrictions on adjacent work	High	[redacted]	Low

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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