

Glass Processing Factory Cutting and Polishing

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 Governance, Leadership and Legal Compliance	<ul style="list-style-type: none"> Inadequate understanding or application of WHS Act 2011 and WHS Regulations by senior management Absence of a documented WHS management system tailored to glass processing operations Poor safety leadership culture leading to normalisation of deviance and risk-taking behaviours Lack of documented safety objectives, KPIs and accountability for WHS performance Inadequate consultation mechanisms with workers and Health and Safety Representatives (HSRs) Failure to regularly review WHS policies in line with legislative or operational changes Insufficient allocation of resources (people, time, budget) to implement and maintain risk controls 	4A	<ul style="list-style-type: none"> Develop and implement a documented WHS Management System aligned with WHS Act 2011, WHS Regulations and relevant Australian Standards (e.g. AS/NZS 4801 or ISO 45001 guidance) Define and communicate a WHS policy endorsed and visibly supported by senior management, including explicit commitment to eliminating or minimising risks in glass cutting and polishing activities Establish clear WHS roles, responsibilities and authorities for officers, managers, supervisors and workers, with these embedded in position descriptions and performance reviews Implement formal consultation arrangements, including election and training of HSRs, regular WHS committee meetings and toolbox talks covering glass processing risks Set measurable WHS objectives and targets (e.g. completion of inspections, close-out of actions, training compliance) and review at management review meetings at least annually Conduct regular internal compliance audits to verify adherence to WHS Act 2011, WHS Regulations, codes of practice and applicable standards relating to plant, hazardous chemicals, noise and manual handling Ensure officers meet due diligence requirements by receiving periodic WHS briefings and training specific to glass manufacturing and processing hazards Implement a documented change management procedure for new processes such as laminated glass creating, hot bending glass and insulating glass unit construction 	3H
2. Plant Procurement, Design and Guarding	<ul style="list-style-type: none"> Procurement of glass cutting and polishing machines without adequate safety specifications or guarding Inadequate integration of safety features for glass cutters (vertical) glass arissers, grinders, drills and assisted glass cutting systems Unprotected nip points, rotating components and cutting edges on glass processing equipment Poor design of hot bending glass and laminated glass machinery leading to uncontrolled exposure to hot surfaces and pinch points Lack of interlocks, emergency stop devices and fail-safe controls on glass sheet washing machines, glass washers and polishers 	4A	<ul style="list-style-type: none"> Develop a plant procurement standard requiring compliance with WHS Regulations Part 5 (Plant and Structures) and relevant Australian Standards (e.g. AS 4024 series for machinery safety) Specify in purchase contracts that all glass processing plant (cutters, polishers, arissers, grinders, washers, drills, hot bending, laminating and insulating glass unit lines) must include engineered guarding, interlocks and emergency stops suited to the hazards Require original equipment manufacturer (OEM) safety documentation, risk assessments and test certificates as part of commissioning for all new and refurbished plant Implement a formal pre-purchase risk assessment process involving WHS, maintenance, operators and supervisors to consider hierarchy of control at design stage Standardise guarding requirements (fixed, interlocked and adjustable guards) and ensure guarding design prevents reach-in, climb-over or bypass, in line with AS 4024 principles Ensure all conveyors, rollers, vertical cutting machines and glass arissers have adequately guarded nip points and moving parts, with routine verification during inspections Introduce management of change procedures for modifications to plant and guarding so that any change triggers a documented risk review and re-commissioning check Maintain an up-to-date plant register with design risk assessments, OEM manuals, inspection records and verification of compliance for each machine 	2M

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	<ul style="list-style-type: none"> Insufficient risk assessment during design and installation of new or modified plant Use of non-compliant or incompatible guarding leading to bypassing or removal by operators 			
3. Plant Maintenance, Inspection and Isolation Systems	<ul style="list-style-type: none"> Inadequate planned maintenance program for glass cutting, grinding, polishing, washing, drilling and power assisted cutting equipment Failure of emergency stops, interlocks or guarding due to lack of inspection and testing Uncontrolled energisation or movement of plant during maintenance, cleaning or jam clearing Degraded components (belts, bearings, suction cups, clamps) leading to sudden glass movement or breakage Unreliable operation of hot bending and laminated glass ovens or kilns causing temperature excursions and thermal shock Absence of standardised lock-out tag-out (LOTO) procedures across all equipment Reliance on reactive breakdown maintenance increasing likelihood catastrophic plant failure 	4A	<ul style="list-style-type: none"> Implement a computerised maintenance management system (CMMS) scheduling preventive maintenance, calibration and statutory inspections for all plant in accordance with OEM recommendations and legislation Develop standard maintenance procedures including inspection checklists for key safety features (guards, interlocks, emergency stops, limit switches and overload protection) on all glass processing machinery Establish and enforce a site-wide lock-out tag-out procedure for maintenance, cleaning and fault-finding, supported by training, authorised personnel lists and regular supervision Introduce pre-start inspection systems for operators (paper or electronic) to confirm condition of guards, emergency stops, vacuum lifting cups and clamping devices before use Require documented commissioning and re-commissioning tests after any major repair or software update to verify safety functions and machine stopping performance Schedule routine inspections and thermal profiling of hot bending glass and laminated glass equipment to maintain safe operating temperatures and prevent overheating or thermal shock risk Maintain maintenance records, defect reports and trend analysis to identify recurring failures and trigger engineering improvements rather than repeated temporary fixes Include verification of maintenance and LOTO compliance in internal WHS audits and supervisor safety walks 	2M
4. Hazardous Chemicals, Coolants and Cleaning Agents Management	<ul style="list-style-type: none"> Inadequate identification and management of hazardous chemicals used in glass grinding, polishing, laminated glass interlayers, insulating glass sealants and cleaning agents Lack of Safety Data Sheets (SDS) or outdated SDS for coolants, cutting fluids, adhesives and solvents Improper storage, labelling or segregation of flammable or corrosive substances near hot bending glass equipment 	3H	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	2M

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	<ul style="list-style-type: none"> • Insufficient ventilation and extraction leading to inhalation of fumes, mists or vapours during glass processing and washing operations • Inadequate chemical spill response capability and emergency planning • Lack of formal risk assessments for hazardous chemical tasks, including mixing, transfer and waste disposal • Inappropriate substitution or decanting of chemicals into unlabelled containers 		[REDACTED]	
5. Dust, Particulate and Noise Exposure Management	<ul style="list-style-type: none"> • Generation of glass dust, fine particulates and slurry from glass grinders, arissers and polishers • Aerosolisation of contaminants from glass sheet washing machines and glass washers • Excessive noise levels from multiple glass cutting, drilling, grinding and washing machines operating concurrently • Inadequate monitoring of airborne contaminants and noise leading to unrecognised long term health risks • Insufficient maintenance of extraction systems and acoustic controls reducing their effectiveness • Lack of formalised hearing conservation and respiratory protection programs 		[REDACTED]	2M
6. Manual Handling, Ergonomics and Glass Handling Systems	<ul style="list-style-type: none"> • Systemic reliance on manual lifting, carrying and positioning of large glass sheets and units • Poor workstation design around glass cutters (vertical and horizontal), grinders, polishers and washing lines causing awkward postures and repetitive movements 	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> Inadequate provision or maintenance of mechanical aids such as vacuum lifters, manipulators and trolleys Improper storage systems leading to over-reaching and unsafe retrieval of glass sheets Lack of formal manual handling risk assessments for fusing, hot bending and laminated glass processes involving heavy or awkward glass assemblies 		[REDACTED]	
7. Machine Operation Systems and Safe Work Procedures	<ul style="list-style-type: none"> Absence of formally documented safe operating procedures for glass arissers, vertical glass cutters, grinders, drills, sheet washing machines and polishers Inconsistent operating practices between shifts leading to elevated risk of glass breakage and injury Unclear boundaries between operational tasks and maintenance tasks, resulting in operators performing maintenance without authorisation Failure to integrate safety interlock and emergency stop checks into machine start-up and shut-down procedures Insufficient controls for power assisted glass cutting and use of handheld cutting tools leading to uncontrolled breakage and flying fragments 	3H	[REDACTED]	2M
8. Competency, Training and Supervision	<ul style="list-style-type: none"> Lack of verified competency for operators of specialised equipment such as glass arissers, hot bending lines, laminated glass presses and insulating glass unit construction lines Inadequate induction for new workers and contractors regarding site-specific 	3H	[REDACTED]	2M

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	<p>glass hazards and emergency procedures</p> <ul style="list-style-type: none"> • Informal on-the-job training without structure, assessment or record-keeping • Insufficient supervision ratios for high-risk activities such as power assisted glass cutting and fusing glass pieces together • No systematic refresher training or re-assessment of competency following incidents or process changes 		[REDACTED]	
9. Glass Breakage, Fragment Control and Housekeeping Systems	<ul style="list-style-type: none"> • Systemic accumulation of glass off-cuts, shards and fines in production and storage areas • Unmanaged glass breakage events resulting in uncontrolled fragments and secondary injuries to nearby workers • Inadequate housekeeping standards around glass cutting, grinding and polishing equipment causing slip, trip or cut hazards • Lack of defined processes for segregation and disposal of broken glass and contaminated waste • Insufficient lighting and demarcation in storage and waste areas leading to unseen glass fragments 	3H	[REDACTED]	2M
10. Layout, Traffic Management and Storage Systems	<ul style="list-style-type: none"> • Poor factory layout causing interaction between pedestrians, forklifts and glass trolleys in cutting and polishing areas • Inadequate segregation of walkways from moving plant and glass stillages • Unstable glass racks, A-frames or storage systems leading to collapse or toppling of sheet glass • Insufficient staging space around vertical glass cutters, washers and finishing lines causing congestion and unsafe stacking 	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> Lack of documented traffic management plan considering loading docks, internal transport and waste removal routes 		[REDACTED]	
11. Hot Work, Thermal Processes and Fire Safety	<ul style="list-style-type: none"> Uncontrolled thermal exposures during hot bending glass procedures, including burns from hot surfaces and heated glass Inadequate fire detection and suppression systems around hot bending, laminated glass ovens and fusing processes Use of combustible materials (packaging, interlayers, sealants) near heat sources without appropriate controls Lack of hot work permitting for maintenance tasks involving welding, grinding or cutting near glass processing lines Failure of temperature controls leading to overheating, thermal shock and increased breakage risk 	4A	[REDACTED]	2M
12. Emergency Preparedness and Incident Management	<ul style="list-style-type: none"> Inadequate planning for emergency scenarios such as severe lacerations, crush injuries, chemical exposures and fire in glass processing areas Poorly communicated or outdated emergency response procedures and evacuation plans Insufficient first aid coverage and kits tailored to high-risk glass processing injuries (deep cuts, eye injuries, burns) Lack of training and drills for emergency roles such as wardens and first aiders 	3H	[REDACTED]	2M

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	<ul style="list-style-type: none"> Inadequate incident reporting, investigation and corrective action systems leading to repeat events 		[REDACTED]	
13. Contractor, Visitor and Supplier Management	<ul style="list-style-type: none"> Contractors performing installation, maintenance or commissioning on glass processing plant without adequate WHS controls Suppliers delivering glass, chemicals or equipment without understanding site traffic and glass handling rules Visitors entering production areas without awareness of glass breakage, plant and traffic hazards Poor coordination of simultaneous operations (e.g. contractors working on machinery while production continues nearby) 	3H	[REDACTED]	2M
14. Fatigue, Shift Work and Workload Management	<ul style="list-style-type: none"> Extended shifts or excessive overtime in response to production demands for glass cutting and polishing Inadequate management of fatigue for night shift or rotating shift workers operating high-risk plant Insufficient breaks and task rotation for workers performing repetitive tasks at cutters, grinders and washers Under-staffing leading to rushed work, short-cuts and reduced adherence to safe systems 	3H	[REDACTED]	2M

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15. Quality Control, Process Integrity and Change Management	<ul style="list-style-type: none"> • Process deviations in power assisted glass cutting, laminated glass creating or insulating glass unit construction leading to unexpected breakage or product failure in service • Uncontrolled changes to machine settings, recipes or process parameters without risk assessment • Inadequate integration between quality management and WHS systems resulting in safety impacts from quality-driven changes • Failure to capture and analyse non-conforming product data that may indicate systemic safety issues in the process 	3H	<div style="background-color: black; height: 15px; width: 100%;"></div>	1L

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.