

Plastic 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 Governance, Duty of Care and Consultation	<ul style="list-style-type: none"> Inadequate understanding of PCBU primary duty of care under WHS Act 2011 Lack of clear WHS roles, responsibilities and delegations across plastic fabrication operations Insufficient worker consultation and failure to establish a health and safety committee Poor integration of WHS duties into business planning and commercial decision-making Inadequate processes to identify, assess and review risks for emerging plastic fabrication technologies Failure to monitor and ensure compliance of contractors and labour-hire workers Lack of clear escalation pathways for WHS issues and notifiable incidents 	4A	<ul style="list-style-type: none"> Develop and implement a WHS governance framework that clearly allocates PCBU, officer and worker duties in accordance with the WHS Act 2011 and WHS Regulation Issue a WHS policy endorsed by senior management that specifically references high-risk plastic fabrication activities such as thermoforming, extrusion and rotational moulding Establish a formal WHS committee and worker representation (HSRs) with documented consultation procedures and regular meeting schedules Embed WHS impact assessments into all major business decisions (e.g. procurement of new thermoforming or extrusion lines, layout changes, shift changes) Implement a structured risk management procedure (identify, assess, control, review) with scheduled review processes such as heat bending, vacuum forming and pressure forming Formalise contractor and labour-hire WHS requirements in contracts, including obligations to comply with site rules, induction, supervision and reporting Develop a tiered WHS issue-resolution and escalation process, including clear criteria for when to notify Safe Work and how to preserve incident scenes 	3H
2. WHS Planning, Risk Management and Change Management	<ul style="list-style-type: none"> Absence of a systematic risk assessment program for new or modified plastic fabrication plant and processes Unmanaged change when introducing new thermoforming machines, vacuum formers or extruders Failure to consider cumulative risk from multiple processes operating simultaneously (e.g. extrusion, on-line saw, bellling table) Inadequate planning for scale-up of production volumes leading to congestion, higher exposures and reduced supervision Poor integration of design-stage safety for new assembly lines or rotational moulding equipment 	4A	<ul style="list-style-type: none"> Implement a documented WHS risk management procedure requiring formal risk assessments for all plastic fabrication processes, with periodic review and sign-off by competent persons Introduce a management of change (MOC) procedure for any modifications to plant, process, materials, layout, staffing levels or operating hours Require pre-commissioning HAZID or HAZOP style reviews for new thermoforming machines, plastic extruders, rotational moulders and vacuum formers Mandate safe design reviews for new or significantly modified plant to ensure compliance with Australian Standards and WHS Regulation plant requirements Ensure project planning for capacity increase includes traffic flow analysis, material handling risk assessments and supervision/resource reviews Maintain a central risk register for plastic fabrication operations with ownership, actions, target dates and periodic management review 	2M

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	<ul style="list-style-type: none"> Lack of formal pre-start and commissioning reviews when installing or significantly altering plant 			
3. Plant Procurement, Design and Guarding Systems	<ul style="list-style-type: none"> Purchase of plastic fabrication equipment that does not comply with Australian Standards or WHS plant requirements Inadequate fixed guarding and interlocks on moving parts of vacuum forming machines, plastics extruders, haul-off units, on-line saws and belling tables Poor guarding and control of rotational moulding arms, indexing tables and drive mechanisms Inadequate two-hand controls, emergency stop systems and light curtains on pressure formers and thermoforming machines Lack of documented plant risk assessments for legacy or imported equipment Bypassing or defeating interlocks due to poor design or production pressures Inadequate safety maintenance to high-temperature zones, cutters, heaters and rotating assemblies 	4A	<ul style="list-style-type: none"> Establish a plant procurement standard requiring suppliers demonstrate compliance with relevant Australian Standards (e.g. AS 4024 series for machine safety) and WHS Regulation Require comprehensive plant risk assessments and safety documentation (manuals, maintenance schedules, verification of controls) from all equipment suppliers Specify minimum guarding requirements for all extrusion lines, haul-off units, on-line saws, belling tables, pressure formers, thermoforming machines and rotational moulders, including fixed guards, interlocks and emergency stops Implement an engineering review process for legacy or imported plant to retrofit compliant guarding, interlocking and emergency stop systems Introduce a change-control process for any modification to guarding or interlocks, including verification by a competent person and update of documentation Prohibit and monitor against overriding of safety devices via a combination of engineering controls (tamper-resistant designs), supervision and disciplinary procedures Ensure safe access platforms, walkways and isolation points are built into plant layouts to separate workers from moving parts and hot areas during maintenance and clearing 	2M
4. Hazardous Chemicals, Adhesives and Fumes Management	<ul style="list-style-type: none"> Exposure to solvents, plasticisers and adhesives used for gluing polycarbonate panels and assembling acrylics Generation of hazardous fumes, vapours and decomposition products during heat bending, thermoforming, vacuum forming, extrusion and rotational moulding of plastics Inadequate storage, labelling and segregation of hazardous chemicals and resins Absence of current Safety Data Sheets (SDS) and inadequate communication of chemical hazards to workers 	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"> Inadequate local exhaust ventilation for glue stations, thermoforming machines, pressure formers and extruder vents Lack of atmospheric monitoring where fumes or vapours may accumulate, particularly in enclosed or poorly ventilated areas Incompatible chemical waste handling and disposal leading to environmental and health risks 		[REDACTED]	
5. Heat, Thermal Processes and Burn Management	<ul style="list-style-type: none"> Exposure to high-temperature surfaces and radiant heat from heat bending equipment, thermoforming machines, pressure formers and vacuum formers Contact with hot moulds, platens, extruder barrels, dies, bellows tables and rotational moulding ovens Thermal degradation of plastics creating additional inhalation and fire hazards Inadequate control of warm-up, soak and cool-down procedures for ovens, heaters and extruders Failure of temperature control systems leading to overheating or unexpected hot surfaces Poorly managed maintenance on hot equipment and inadequate isolation and cooling regimes 	4A	[REDACTED]	2M
6. Machine Operation, Automation and Interlocks	<ul style="list-style-type: none"> Unintended start-up of vacuum forming machines, thermoformers, pressure formers, extrusion lines and rotational moulders during cleaning or adjustments Inadequate safeguarding of automatic and semi-automatic sequences leading to entanglement, crushing or drawing-in Improper use or defeat of light curtains, presence-sensing devices, guards and two-hand controls Complex interactions between conveyor systems, haul-off units, on-line 	4A	[REDACTED]	2M

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	<p>saws and belling tables not adequately risk assessed</p> <ul style="list-style-type: none"> • Insufficient functional testing of interlocks, emergency stops and safety PLCs • Poor alarm design and lack of clear status indication on control panels, leading to operator confusion 		[REDACTED]	
7. Noise, Vibration and Environmental Conditions	<ul style="list-style-type: none"> • Prolonged exposure to high noise levels from extrusion lines, haul-off units, on-line saws, vacuum systems and rotational moulding operations • Localised vibration from compressors, extruders and forming machines affecting operators and nearby structures • Poorly controlled ambient temperature and humidity in production areas with ovens and heaters, increasing fatigue and heat stress risk • Inadequate acoustic separation between noisy plant (e.g. grinders) and other work areas • Lack of systematic noise and vibration assessments and health monitoring risk • Insufficient control of dust or off-gassing from trimming, sawing or plastics 	3H	[REDACTED]	2M
8. Materials Handling, Storage and Manual Tasks	<ul style="list-style-type: none"> • Unsafe handling of large acrylic sheets and polycarbonate panels during assembly and feeding into forming machines • Inadequate systems for moving moulds, tooling, dies and heavy components for vacuum forming, extrusion and rotational moulding • Poorly designed storage systems for sheet stock, pellets, resins and finished products leading to collapse or falling objects 	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> • Repetitive or awkward manual handling during loading of extruder hoppers, belling tables and pressure formers • Lack of structured traffic management between forklifts, tugs and pedestrian workers within fabrication areas • Inadequate mechanical aids or lifting plans for awkward moulds and tooling changes 		[REDACTED]	
9. Electrical Safety, Energy Isolation and Maintenance Systems	<ul style="list-style-type: none"> • Exposure to live electrical parts during fault-finding or maintenance on extruders, heaters, vacuum systems and control panels • Inadequate lockout/tagout for multiple energy sources (electrical, pneumatic, hydraulic, thermal) on forming and extrusion lines • Uncontrolled energisation of rotational moulding drives, haul-off units or saws during servicing • Ageing or non-compliant electrical installations on legacy plant and temporary equipment • Poorly documented maintenance schedules leading to unexpected equipment failure and secondary safety risks • Lack of verification of isolation and residual energy release before maintenance work commences 	4A	[REDACTED]	2M
10. Fire, Explosion and Emergency Preparedness	<ul style="list-style-type: none"> • Accumulation of combustible plastic dust, offcuts and packaging materials near heat sources and ignition points • Overheating of plastics in extruders, ovens, thermoformers, pressure formers or rotational moulders leading to fire or release of toxic combustion products • Inadequate fire detection, suppression and emergency response arrangements in fabrication and storage areas • Failure to plan for emergency shutdown and evacuation specific to 	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> continuous processes (extrusion lines, rotational moulding cycles) Poorly managed storage of flammable adhesives, solvents and aerosols used in acrylic assembly and polycarbonate gluing Lack of regular emergency drills and training for scenarios such as plant fire, chemical release or power failure 		[REDACTED]	
11. Competency, Training and Supervision	<ul style="list-style-type: none"> Inadequate training of operators on complex plant such as plastics extruders, vacuum forming machines, thermoforming lines and rotational moulders Reliance on informal on-the-job learning without verification of competency Insufficient supervision during high-risk activities including setting, troubleshooting and maintenance interventions Lack of specific training for contractor and temporary workers on specific plastic fabrication hazards Outdated procedures and training materials that do not reflect current plant, controls or legislation Failure to adequately train workers on emergency response, isolation procedures and reporting requirements 	3H	[REDACTED]	2M
12. Fatigue, Rostering and Psychosocial Risk Management	<ul style="list-style-type: none"> Extended shifts and night work to meet production deadlines on continuous extrusion or rotational moulding operations High cognitive load and stress when monitoring multiple machines or complex automated lines simultaneously Production pressure leading to risk-taking, bypassing of safety controls and under-reporting of hazards 	3H	[REDACTED]	2M

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	<ul style="list-style-type: none"> Poor management of breaks, resulting in reduced vigilance and increased error rates on high-consequence tasks Inadequate systems to identify and manage psychosocial risks such as bullying, conflict and unrealistic workload Lack of supportive reporting culture for near misses and safety concerns 		[REDACTED]	
13. Contractor, Visitor and Supply Chain Management	<ul style="list-style-type: none"> Contractors performing installation, maintenance or modification on thermoforming machines, extruders, vacuum systems and rotational moulders without adequate site-specific controls Suppliers delivering materials and collecting finished goods in shared traffic and loading zones without coordination Inconsistent WHS standards between the PCBU and contractors, particularly for high-risk tasks such as electrical work or confined access inside machines Visitors and clients in fabrication areas without awareness of plastic-specific hazards Poor communication of process changes or shutdowns to upstream and downstream supply chain partners impacting safety 	3H	[REDACTED]	2M
14. Inspection, Monitoring, Auditing and Continuous Improvement	<ul style="list-style-type: none"> Degradation of safety systems over time due to lack of inspections and monitoring Failure to detect emerging risks associated with new plastics, additives or processing conditions Incomplete or inaccurate recording of incidents, near misses and non-conformances Lack of follow-through on corrective and preventive actions arising from incidents or audits 	3H	[REDACTED]	1L

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	<ul style="list-style-type: none"> Over-reliance on PPE and behavioural controls due to lack of engineering and system reviews Limited trend analysis of WHS data to identify systemic weaknesses in plastic fabrication operations 		<div style="background-color: black; height: 20px; width: 100%;"></div> <div style="background-color: black; height: 20px; width: 100%;"></div>	

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.