

## TIG Welding Risk Assessment

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			<b>Elimination</b> Remove the hazard.	
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	<b>Substitution</b> 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.	<b>Engineering</b> Isolate the hazard	
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1L LOW	Monitor and keep records.	<b>Administrative</b> Change	
								<b>PPE</b>	

### 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:

- Eliminate**
- Substitute
- Isolate
- Engineering
- Administrative
- 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. Preparation	Improper setup, Electrical hazard	3H	<ul style="list-style-type: none"> <li>- Conduct pre-start safety briefing to ensure all workers understand procedures</li> <li>- Inspect welding equipment for visible damage</li> <li>- Ensure all electrical connections are secure and in good condition</li> <li>- Use Residual Current Devices (RCDs) for electrical safety</li> <li>- Ensure workspace is free from unnecessary flammable materials</li> <li>- Verify ventilation systems are operational</li> <li>- Make sure all personnel wear appropriate personal protective equipment (PPE)</li> <li>- Use safety signage to warn of welding areas</li> <li>- Implement a permit-to-work system for welding tasks</li> <li>- Have fire extinguishers readily accessible in the area</li> </ul>	2M
2. Checking Equipment	Equipment malfunction, Exposure to welding fumes	3H	<ul style="list-style-type: none"> <li>- Perform regular maintenance checks on welding units</li> <li>- Replace worn or damaged components before use</li> <li>- Follow manufacturer's guidelines for equipment inspection</li> <li>- Ensure appropriate filters and ventilation systems are used</li> <li>- Train workers in the operation and troubleshooting of welding equipment</li> <li>- Keep equipment manuals accessible on site</li> <li>- Use local exhaust ventilation</li> <li>- Rotate tasks to limit exposure time</li> <li>- Conduct air monitoring to ensure levels are within safe limits</li> <li>- Perform a fit test for all respiratory protective equipment</li> </ul>	1L
3. Setting Up Workpiece	Lifting injury, Pinching fingers	2M	<ul style="list-style-type: none"> <li>- Use mechanical aids to lift heavy workpieces</li> <li>- Practice safe lifting techniques</li> <li>- Ensure proper hand positioning to avoid pinch points</li> <li>- Use gloves designed for handling metal materials</li> <li>- Secure the workpiece firmly before starting</li> <li>- Keep all personnel clear from lifting area during setup</li> <li>- Provide clear instructions and guidelines for manual handling</li> <li>- Arrange for team lifting if necessary</li> </ul>	1L

<p>Electrical, Burns</p>	<p>3H</p>	<p>- Install safety mats to reduce slip risks</p>
<p>Ultraviolet radiation, Infrared radiation,</p>	<p>4A</p>	

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7. Cleaning Up Area	Slips and trips, Cuts from sharp edges	2M		1L
8. Conducting Equipment Maintenance	Mechanical injury, exposure to chemical cleaners	3H		2M
9. Storing Equipment	Improper storage leading to equipment damage, Clutter	2M		1L

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10. Documentation and Review	Incomplete records, Poor hazard identification	2M		1L
11. Communication with Team	Miscommunication, Lack of understanding safety protocols	3H		1L
12. Managing Changes to Processes	Non-adaptability to new procedures, Increased risk due to unfamiliar tasks	3H		1L

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13. Monitoring Safety Performance	Failure to notice failing controls, Non-compliance with safety measures	3H		2M
14. Emergency Preparedness	Workers unprepared for emergencies, Delay in incident response	4A		2M
15. Conducting Training and Competency Assessments	Inadequate training, Uncertified personnel	3H		2M

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16. Use of Tools and Consumables	Tool breakage, Depletion of resources	2M		1L
17. Evaluating Risk Management Process	Failure to evaluate risks, Ineffective control measures	3H		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 IF 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 2017

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) Regulations 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>

### 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

### 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.