

## Submerged Arc Welding Risk Assessment

Business Name:	ABN:	
Business Address:		
Contact Person:	Phone:	Email:

### THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON 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	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>	
<b>Risk Rating &amp; Required Action:</b>								<b>Notes on Hierarchy of Controls:</b>	
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.						Remember to apply controls in the preferred order shown by the coloured pyramid:	
3H		Review and approve additional controls before task starts. Senior supervisor sign-off needed.						1. <b>Eliminate</b>	
2M		Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions.						2. Substitute	
1L		Proceed, following standard operating procedures. Monitor and keep records.						3. Isolate	
								4. Engineering	
								5. Administrative	
								6. PPE	
<b>Consequence Scale:</b>								Always document <b>why</b> a lower-order control is accepted if elimination or substitution is not reasonably practicable.	
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				
								<i>aligned with Safe Work Australia's Managing the risk of fatigue at work (2023) and ISO 45001:2018 clauses 6–8.</i>	

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	slips, falls	3H	<ul style="list-style-type: none"> <li>- Inspect work area for spills or obstacles</li> <li>- Ensure adequate lighting</li> <li>- Use slip-resistant footwear</li> <li>- Mark wet areas with caution signs</li> <li>- Confirm working orders of PPE</li> <li>- Secure loose cables</li> <li>- Train workers in hazard recognition</li> <li>- Conduct a job-specific induction</li> <li>- Plan safe access and egress points</li> <li>- Check health and fitness of workers</li> </ul>	2M
2. Setting Up Equipment	electric shock, equipment malfunction	4H	<ul style="list-style-type: none"> <li>- Inspect equipment for damage before use</li> <li>- Follow manufacturer instructions</li> <li>- Ensure electrical connections are secure</li> <li>- Use equipment only by trained operators</li> <li>- Implement lockout/tagout procedures</li> <li>- Periodically test and tag electrical tools</li> <li>- Verify the earthing system</li> <li>- Provide adequate ventilation</li> <li>- Have an emergency shut-off procedure</li> <li>- Keep unqualified personnel away</li> </ul>	2M
3. Material Handling	manual handling injuries, cuts	3H	<ul style="list-style-type: none"> <li>- Utilise proper lifting techniques</li> <li>- Provide mechanical aids</li> <li>- Ensure materials are transported via safe routes</li> <li>- Train in manual handling practices</li> <li>- Use PPE such as gloves and aprons</li> <li>- Conduct routine inspections for sharp edges</li> <li>- Secure loads to prevent movement</li> <li>- Label hazardous materials clearly</li> </ul>	2M

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
			<ul style="list-style-type: none"> <li>- Set weight limits for manual lifting</li> <li>- Establish spill response procedures</li> </ul>	
4. Welding Preparation	inhalation of fumes, burn injuries	3H	<ul style="list-style-type: none"> <li>- Wear appropriate PPE (respirator, gloves, eye protection)</li> <li>- Ensure adequate ventilation</li> <li>- Use proper welding techniques</li> <li>- Keep work area clean and free of clutter</li> <li>- Use fire-resistant blankets to protect surrounding areas</li> <li>- Have fire extinguishers readily available</li> <li>- Establish a safe distance from the work area</li> <li>- Use proper handling techniques for materials</li> <li>- Follow manufacturer's instructions for equipment</li> <li>- Conduct regular safety checks</li> <li>- Provide training on safe work practices</li> <li>- Implement a permit-to-work system</li> <li>- Use barriers to restrict access to the work area</li> <li>- Post warning signs</li> <li>- Use proper lifting techniques</li> <li>- Avoid overexertion</li> <li>- Take regular breaks</li> <li>- Stay hydrated</li> <li>- Use proper posture</li> <li>- Avoid repetitive motions</li> <li>- Use ergonomic tools and equipment</li> <li>- Rotate tasks to avoid fatigue</li> <li>- Monitor for signs of stress or fatigue</li> <li>- Encourage a safety culture</li> <li>- Conduct regular safety meetings</li> <li>- Encourage workers to report hazards</li> <li>- Implement a near-miss reporting system</li> <li>- Conduct safety audits</li> <li>- Review and update safety procedures</li> <li>- Provide ongoing safety training</li> <li>- Encourage workers to take ownership of safety</li> <li>- Establish a safety committee</li> <li>- Conduct safety drills</li> <li>- Use safety checklists</li> <li>- Implement a stop-work authority</li> <li>- Encourage workers to look out for each other</li> <li>- Establish a safety incentive program</li> <li>- Conduct safety observations</li> <li>- Use safety data to improve performance</li> <li>- Encourage workers to participate in safety decisions</li> <li>- Establish a safety feedback loop</li> <li>- Conduct safety investigations</li> <li>- Implement corrective actions</li> <li>- Encourage workers to learn from incidents</li> <li>- Establish a safety culture of continuous improvement</li> </ul>	1L
5. Alignment of Components	finger entrapment, musculoskeletal stress	3H	<ul style="list-style-type: none"> <li>- Use proper alignment techniques</li> <li>- Avoid overexertion</li> <li>- Use proper lifting techniques</li> <li>- Keep work area clean and free of clutter</li> <li>- Use fire-resistant blankets to protect surrounding areas</li> <li>- Have fire extinguishers readily available</li> <li>- Establish a safe distance from the work area</li> <li>- Use proper handling techniques for materials</li> <li>- Follow manufacturer's instructions for equipment</li> <li>- Conduct regular safety checks</li> <li>- Provide training on safe work practices</li> <li>- Implement a permit-to-work system</li> <li>- Use barriers to restrict access to the work area</li> <li>- Post warning signs</li> <li>- Use proper lifting techniques</li> <li>- Avoid overexertion</li> <li>- Take regular breaks</li> <li>- Stay hydrated</li> <li>- Use proper posture</li> <li>- Avoid repetitive motions</li> <li>- Use ergonomic tools and equipment</li> <li>- Rotate tasks to avoid fatigue</li> <li>- Monitor for signs of stress or fatigue</li> <li>- Encourage a safety culture</li> <li>- Conduct regular safety meetings</li> <li>- Encourage workers to report hazards</li> <li>- Implement a near-miss reporting system</li> <li>- Conduct safety audits</li> <li>- Review and update safety procedures</li> <li>- Provide ongoing safety training</li> <li>- Encourage workers to take ownership of safety</li> <li>- Establish a safety committee</li> <li>- Conduct safety drills</li> <li>- Use safety checklists</li> <li>- Implement a stop-work authority</li> <li>- Encourage workers to look out for each other</li> <li>- Establish a safety incentive program</li> <li>- Conduct safety observations</li> <li>- Use safety data to improve performance</li> <li>- Encourage workers to participate in safety decisions</li> <li>- Establish a safety feedback loop</li> <li>- Conduct safety investigations</li> <li>- Implement corrective actions</li> <li>- Encourage workers to learn from incidents</li> <li>- Establish a safety culture of continuous improvement</li> </ul>	2M
6. Start-Up Process	equipment startup failure, unintentional arc flash	4A	<ul style="list-style-type: none"> <li>- Follow manufacturer's instructions for equipment</li> <li>- Conduct regular safety checks</li> <li>- Provide training on safe work practices</li> <li>- Implement a permit-to-work system</li> <li>- Use barriers to restrict access to the work area</li> <li>- Post warning signs</li> <li>- Use proper lifting techniques</li> <li>- Avoid overexertion</li> <li>- Take regular breaks</li> <li>- Stay hydrated</li> <li>- Use proper posture</li> <li>- Avoid repetitive motions</li> <li>- Use ergonomic tools and equipment</li> <li>- Rotate tasks to avoid fatigue</li> <li>- Monitor for signs of stress or fatigue</li> <li>- Encourage a safety culture</li> <li>- Conduct regular safety meetings</li> <li>- Encourage workers to report hazards</li> <li>- Implement a near-miss reporting system</li> <li>- Conduct safety audits</li> <li>- Review and update safety procedures</li> <li>- Provide ongoing safety training</li> <li>- Encourage workers to take ownership of safety</li> <li>- Establish a safety committee</li> <li>- Conduct safety drills</li> <li>- Use safety checklists</li> <li>- Implement a stop-work authority</li> <li>- Encourage workers to look out for each other</li> <li>- Establish a safety incentive program</li> <li>- Conduct safety observations</li> <li>- Use safety data to improve performance</li> <li>- Encourage workers to participate in safety decisions</li> <li>- Establish a safety feedback loop</li> <li>- Conduct safety investigations</li> <li>- Implement corrective actions</li> <li>- Encourage workers to learn from incidents</li> <li>- Establish a safety culture of continuous improvement</li> </ul>	2M

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7. Welding Operation	burns, arc eye	4A		2M
8. Movement of Equipment	collisions, overturning	3H		1L
9. Quality Inspection	exposure to fumes, sharp edges	2M		1L

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			<div></div> <div></div> <div></div> <div></div>	
10. Cleaning and Maintenance	chemical exposure, slips	3H	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	1L
11. Shutdown Procedure	unexpected equipment restart, thermal burns	3H	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	1L
12. Storage of Equipment	falling objects, dust inhalation	2M	<div></div> <div></div> <div></div> <div></div> <div></div>	1L

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13. Inventory Management	material shortages, overstocking leading to clutter	3H		2M
14. Record Keeping	data loss, inaccurate documentation	2M		1L
15. Auditing and Review	overlooked safety issues, ineffective procedures	3H		2M

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			<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></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 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.