

Computer Numerical Control (Cnc) Operation 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 | | | 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. Preparation | Slips, trips and falls, Ergonomic hazards | 3H | <ul style="list-style-type: none"> - Ensure the work area is clean and free from obstructions - Use anti-slip mats where necessary - Arrange desks and chairs to promote ergonomic posture - Conduct a pre-operation check of the area - Provide adequate lighting to avoid falls and slips - Inspect tools and equipment for safe use - Train staff on ergonomic practices - Ensure all cables and cords are properly secured - Use proper foot wear - Engage in proper stretching exercises before work | 2M |
| 2. Machine Setup | Mechanical malfunctions, Electrical hazards | 4H | <ul style="list-style-type: none"> - Conduct thorough inspections of the CNC machine before use - Ensure machine guards are in place and functional - Secure connections and check for loose wires - Use lockout/tagout procedures during setup - Follow manufacturer's guidelines for setup - Test emergency stop functions before operation - Provide training in electrical safety - Wear appropriate personal protective equipment (PPE) - Check voltage and current ratings are appropriate - Keep flammable materials away from the machine | 3H |
| 3. Loading Material | Manual handling injuries, Pinch points | 3H | <ul style="list-style-type: none"> - Use mechanical aids for heavy materials loading - Train workers in proper lifting techniques - Designate areas that need team lifting - Use proper gloves to avoid pinch injuries - Mark known pinch points on equipment - Provide clear instructions and guidelines for loading procedures - Ensure proper alignment of materials - Create a clean working area around the machine | 2M |

| Category | Sub-category | Value |
|--------------------|--------------|-------|
| Electrical hazards | 3H | 100% |
| | | 95% |
| | | 90% |
| | | 85% |
| | | 80% |
| | | 75% |
| | | 70% |
| | | 65% |
| | | 60% |
| | | 55% |
| Noise hazards | 4A | 100% |
| | | 95% |
| | | 90% |
| | | 85% |
| | | 80% |
| | | 75% |
| | | 70% |
| | | 65% |

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|----------------------------|--|--------------|--|---------------|
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| | | | | |
| 7. Adjustments | Unstable machine adjustments, Pinch points | 3H | | 2M |
| 8. Completion of Operation | Residual heat, Sharp edges | 3H | | 1L |
| 9. Maintenance | Mechanical failure, Chemical exposure | 4A | | 3H |

Machine operation,
aid response

4A

Trip hazards

3H

| JOB STEP | POTENTIAL HAZARDS | IR | CONTROL MEASURES | RR |
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| | | | | |
| 13. Training and Refreshment | Skill decay, Knowledge gaps | 3H | | 1L |
| 14. Inspection and Audit | Compliance failure, Miscommunication | 3H | | 2M |
| 15. Review Procedures | Outdated procedures, Inconsistent updates | 3H | | 1L |

| JOB STEP | POTENTIAL HAZARDS | IR | CONTROL MEASURES | RR |
|---------------------|------------------------|--------------|---|---------------|
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| | | | <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.