##

**ORBITAL SANDER***Random Orbit*

## Scope

This document is intended to estimate potential human health and environmental risks posed by current and potential future conditions at **State Library of Queensland (State Library) Fabrication Lab** Facility. The risk assessment describes the approach to the risk assessment and facilitates appropriate ways to evaluate current and future risks.

Refer to the **Safe Operating Procedures** (**SOP**) for information regarding the safe usage and check list for this equipment.

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| Plant/Equipment Description: **Sander – Random Orbital** |
| Leaders:  **Daniel Flood** |
| Locations:  **Fabrication Lab** |
| Assessment Date:  **02/03/2020** | Review Date:  **02/03/2021** |

*N.B. This assessment can remain active for up to 5 years. However, an annual monitoring and review process should be undertaken and recorded – refer to the last page of this document.*

*Below are the details of the manufacturing or production processes attributed to this item of equipment categorised by their assessed inherent risk levels (refer to the Equipment/Process Risk Matrix). The actions required for approval for each level of inherent risk are mandatory.*

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| **Inherent Risk Level** | **Details of Processes** | **Action Required/Approval** |
| 🗹 | **Low** | * When used for sanding materials on a flat, regular, knot free surface.
* When the work piece can be securely clamped or held in a vice.
* When working at a comfortable height for the operator.
* When the sander can be held firmly with both hands during the operation.
* When using the sander with a dust extraction or filter bag.
 | * Manage through regular planning processes
 |
| 🗹 | **Medium** | * When used for sanding timber on an uneven, irregular or knotted surface or when working in an uncomfortably, non-secured or difficult position.
 | * Document controls in planning documents and/or complete this *Plant Risk Assessment*.
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Minimum standards

| Minimum qualifications and experience *Listed below are the general “minimum” recommendations for the management of this Plant/Equipment.*🗹 *Indicate the minimum management controls.*  |
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|  X State Library staff with experience, ability and competency in the safe use of this plant/equipment  *(indicate one or more of the following):*X Specific knowledge of the safe and correct use of this plant/equipmentX Experience (i.e. previous involvement and familiarity) in the safe use of this plant/equipmentX Demonstrated expertise, ability and competency with this plant/equipment[ ]  Documented qualifications relating to the use of this plant/equipment (e.g. in a staff profile) **OR** X A Contractor, other than a State Library staff member, with:X Expertise in the safe and correct use of this plant/equipment[ ]  Documented qualifications that demonstrate experience, ability and competency in the safe use of this plant/equipment. |
|  X Will any staff require initial and/or ongoing training for the safe use of this plant/equipment?If yes, give details:  **Initial safety training for new staff** |
|  X Will members be operating this plant/equipment?If yes, state how members use of this plant/equipment will be managed (e.g. Workshop Safety Induction)Give details:  **Safety Induction and under general supervision** |
|  Further information if required:  |
|  |
|  Minimum control requirements  |
|  Supporting documentation available in the school on this plant/equipment includes: X Operators ManualX Safe Operating Procedures (SOP)X Equipment Maintenance Records (EMR)X A process for recording student safety induction e.g. Student induction register X A process for recording staff training and experience, e.g. ITD Staff induction register |
|  X All guards are in place and in good working order for this plant/equipment  |
|  [ ]  Safe Working Zones are defined for this plant/equipment (e.g. yellow lines and/or appropriate signage)  |
|  X Suitable personal protective equipment (PPE) is available to be used by all operators |
|  X This plant/equipment complies with relevant safety standards |
|  Further information if required:  **Supervisor to assess and define all Safe Working Zones** |

Hazards and control measures

*Listed below are indicative hazards/risks and suggested control measures. These are by no means exhaustive lists. Add details of any other hazards/risks or additional controls you intend to implement.*

🗹 *Indicate the control measures adopted. Detail their implementation and any additional controls required.*

| **Hazards/Risks** | **Hierarchy of Recommended** **Control Measures** | **Yes** | **No** | **Details of how this will be implemented***(and any additional controls)* |
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| **Exposure to Rotating****or Moving Parts:*** **Entanglement and**

**Entrapment**Could hair, clothing, ties, jewellery or other materials become entangled with moving parts of plant or materials in motion?* **Striking**

Could anyone be struck by moving objects such as the work piece being ejected, or by the unexpected or uncontrolled movement of the plant or work piece?  | 1. Where possible, potentially hazardous portable power tools, including all sanders, are substituted or replaced with less hazardous alternatives.
 | X | [ ]  | **Supervisor to consider the requirements and alternates** |
| 1. All necessary machinery guards and safety devices are in place protecting workers from all moving parts and abrasive surfaces.
 | X | [ ]  | **As per the manufacturer’s standards** |
| 1. Staff and student training is provided to minimise exposure to these hazards and risks.
 | X | [ ]  | **Safety induction** |
| 1. Safe operating procedures (SOPs) are available and clearly displayed.
 | X | [ ]  | **Located with equipment and in SOP folder** |
| 1. Warning “Danger” tags (or similar) are affixed to all potable power tools under repair or maintenance preventing workers from using the equipment.
 | X | [ ]  | **Standard LOTO Procedures** |
| 1. “Safe Working Zones” are clearly defined. Where practical, sanding operations are isolated away from other work activities.
 | X | [ ]  | **Supervisor or JSA to address requirements** |
| 1. Operators are required to remove all jewellery, tuck in loose clothing and tie back long hair.
 | X | [ ]  | **As per SOP requirements**  |
| 1. All approved personal protective equipment (PPE) is used where required.
 | X | [ ]  | **All PPE is provided as per SOP requirements**  |
| **Slips, Trips, Falls** **and Abrasions:**Can anyone using the plant or in the vicinity of the plant, slip, trip or fall due to the working environment or other factors?e.g. Poor housekeeping, dust on floors, slippery or uneven work surfaces, power cables across work areas causing injuries and abrasions? | 1. Slip resistant flooring is encouraged in workspaces. Regular checks are made for unsafe wear and damage. Inspections are made for any power leads, etc.
 | X | [ ]  | **Anti-slip mats available if required** |
| 1. Procedures are in place for the disposal of all waste materials around all workspaces where any orbital sanding activities are to be performed.
 | X | [ ]  | **Storage & waste disposal procedures** |
| 1. Staff training is provided to minimise exposure to these hazards.
 | X | [ ]  | **Safety induction** |
| **Environmental:*** **Noise**

Is it likely that the normal operation of this plant will produce excessive noise levels?* **Dust, Fumes and**

**Vapours**Is it likely there will be airborne dust particles, toxic fumes or volatile vapours produced and therefore be present in the workspace?* **Vibration**

Is the normal operation of this plant likely to create severe or excess vibration that could be transferable to the operator?* **Lighting**

Is there insufficient lighting to operate this plant in a safe manner? Is there a possible strobe lighting effect caused by faulty fluorescent tubes in the workspace? | 1. Portable cordless power tools are regularly maintained to help minimise the risk of exposures to these hazards.
 | X | [ ]  | **Routine checks and maintenance**  |
| 1. All portable cordless power tool maintenance is documented in a register.
 | X | [ ]  | **Service records** |
| 1. Exposure to noisy ITD workshop environments is monitored and evaluated regularly for all workers.
 | X | [ ]  | **Monitoring of excess noise during operations by supervisor** |
| 1. Engineering controls (or physical changes) such as mandatory machinery guarding or any protective safety screens and enclosures are in place in all workspaces and all in good working condition.
 | X | [ ]  | **As per manufacturers standards** |
| 1. All ducted fume extraction systems are fully maintained, cleaned and emptied, connected and operational.
 | X | [ ]  | **Use a portable dust extraction** |
| 1. Staff and member training is provided to minimise exposure to these hazards.
 | X | [ ]  |  **General induction training and housekeeping procedures** |
| 1. Good lighting is provided to all workspaces and this is maintained on a regular basis. Fluorescent tubes are checked and replaced as required.
2. All approved personal protective equipment (PPE) is used where required.
 | X X | [ ]  | **As per workspace risk assessment and housekeeping procedures****All PPE is provided. As per SOP requirements** |
| **Electrical:**Can the operator be injured by electrical shock due to working near or contacting with damaged or poorly maintained live electrical conductors such as power outlets, extension leads, safety switches, starters and isolators or casual water on the floor near plant and machinery?  | 1. Visually checks are made of all cordless portable power tools, their electrical switches, plugs, leads and battery charges.
 | X | [ ]  | **Routine checks and maintenance**  |
| 1. Electrical safety inspections, testing and tagging etc. are completed regularly as per guidelines for all cordless portable power tool battery chargers.
 | X | [ ]  | **Annually. As per QLD WHS requirements**  |
| 1. Warning “Danger” tags (or similar) are affixed to all portable cordless power tools or their battery chargers when under repair or maintenance preventing workers from using them.
 | X | [ ]  | **Standard LOTO procedures**  |
| 1. Electrical maintenance on all portable cordless power tools & chargers is documented.
 | X | [ ]  | **Electrical register**  |
| 1. Visually checks are made of all cordless portable power tools, their electrical switches, plugs, leads and battery charges.
 | X | [ ]  | **Routine checks and maintenance**  |
| **Exposure:*** **Friction**

Is the plant likely to generate heat by friction? Could the plant operator accidentally come into contact with moving materials or machinery components resulting in friction burns to the skin, particularly hands?* **Hazardous**

**Substances**Is it likely that the plant operator or others nearby in the workspace could be exposed to hazardous or toxic chemicals such as airborne toxic wood dust particulates? | 1. Portable cordless power tools are regularly maintained to help minimise the risk of exposures to these hazards.
 | X | [ ]  | **Routine maintenance and servicing**  |
| 1. All portable cordless power tools and charger maintenance is documented in a register.
 | X | [ ]  | **Service records** |
| 1. Any potentially hazardous waste materials, toxic dusts and fumes resulting from this metal cutting process are monitored and managed.
 | X | [ ]  | **Air quality monitoring by Supervisor. Dust extraction and air filter used as required** |
| 1. Staff and members training is provided to minimise exposure to these hazards.
 | X | [ ]  | **General induction training and housekeeping procedures** |
| 1. All approved personal protective equipment (PPE) is used where required.
 | X | [ ]  | **All PPE is provided. As per SOP requirements** |
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| **Ergonomics and****Manual Handling:**Can the plant be safely operated, in a suitable location, providing clear and unobstructed access? Poorly designed work stations often necessitate teachers and students performing manual tasks involving heavy lifting and lowering, pushing, pulling or carrying, etc. Such tasks then contribute to a range of musculoskeletal sprains and strains for workers.  | 1. Where possible, practical work benches are planned and adjusted to a comfortable work height thus minimising any unsafe or excessively strenuous manual tasks.
 | X | [ ]  | **Use of standard working bench heights and adjustable stands as required** |
| 1. Sufficient workspace is provided in all practical classrooms to help ensure unobstructed, safe operation.
 | X | [ ]  | **Supervisor to assess workspace requirements** |
| 1. Floors are regularly cleaned and free of excessive wood dust, waste materials and other extraneous objects.
 | X | [ ]  | **As per standard housekeeping procedures** |
| 1. Staff training is provided with regard to manual handling techniques and procedures to minimise exposure to these hazards.
 | X | [ ]  | **Staff safety and manual handling inductions.** |
| **Explosion and Fire:**As a consequence of using this particular item of plant and equipment, could anyone be injured by the release of stored energy triggered by volatile, explosive substances such as stored gasses, vapours or liquids?  | 1. Fire extinguishers of the correct type are readily available in all workspaces and positioned near exit doorways.
 | X | [ ]  | **As per Australian Standards** |
| 1. Staff training is provided regarding procedures for the correct and appropriate use of fire safety equipment.
 | X | [ ]  | **Annual safety training** |
| 1. Exits from buildings and other work areas are defined and access to them kept clear of obstructions.
 | X | [ ]  | **As per Australian building code**  |
| 1. Safety signage is posted clearly denoting the location of all fire safety items and emergency exits.
 | X | [ ]  | **As per Australian building code** |

| **Other Hazards/Risks** | **Additional Control Measures***These would relate to the specific student needs, locations and conditions in which you are conducting your activity.* |
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| **Approval** |
| Submitted by: Simon McKellar | Date: 02/03/2020 |
| **[ ]**  | Approved as submitted. |
| **[ ]**  | Approved with the following condition(s):      |
| **[ ]**  | Not Approved for the following reason(s):      |
| By:       | Designation:       |
| Signed: | Date:        |

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| Staff members involved in the use of this risk assessment and the associated plant and equipment: |
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 | *Signature:*  ……………………………….. *Date:**Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:*  |

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| **Monitoring and Review***This Plant and Equipment Risk Assessment is to be monitored and reviewed annually for a further four (4) years.* |

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| **Review 1:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* Staffing details have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

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| **Review 2:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* Staffing details have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

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| **Review 3:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* Staffing details have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

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| **Review 4:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* Staffing details have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

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