##

**GRINDER / LINISHER***Pedestal or Bench*

## 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: **Grinder/Linisher combo** |
| 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 only the linishing belt is being used
* When sanding to a straight line on comfortably sized pieces of wood, plastics and other suitable materials – sides >80mm
* When the work piece can be securely held without endangering the hands or fingers.
* When sanding materials that are uniform in size and shape while free of knots and other irregularities.
* When sanding materials that are non-flammable or have hazardous properties.
* When the supervisor can monitor and make any operational alignment adjustments to the linishing belt.
 | * Manage through regular planning processes
 |
|  | **Medium** | * When straight grinding back of simple welds on external rectangular surfaces, never internal joins.
* When “rounding over” sharp external corners on medium to thick mild steel – where such projects sit flat on the tool rest.
* When the material can be easily held by both hands clear of the grinding rest.
 | * Document controls in planning documents and/or complete this *Plant Risk Assessment*
 |
| 🗹 | **High** | * When grinding any complex shapes in thinner sections of steel (never sheet metal).
* When smaller objects are held with vice locks pliers and they sit on the grinding rest during the entire grinding operation.
* When grinding round metal stock of < 6mm diameter and < 100mm in length.
* When sharpening tools including plane blades,chisels and high speed tool steels.
* When using a retro-fitted wire brush wheel for polishing metal, removing rust, scale or paint.
 | * A Plant Risk Assessment is required to be completed.
* Supervisor approval prior to conducting this activity is required.
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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.*  |
| --- |
|  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/equipmentX 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/equipmentX 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 induction training** |
|  X Will meber be operating this plant/equipment?If yes, state how student use of this plant/equipment will be managed (e.g. Workshop Safety Induction)Give details:  **Under a supervised and controlled environment** |
|  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  |
|  X 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:  |

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)* |
| --- | --- | --- | --- | --- |
|  **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? * **Crushing and**

**Pinching**Could anyone be crushed or pinched due to falling uncontrolled movement of plant or its load tipping or rolling over, or contact with moving parts during testing, inspection or maintenance?* **Shearing**

Can body parts be cut off between two parts of the plant, or between a part of the plant and the work piece or structure?* **Cutting, Stabbing and**

**Puncturing**Can anyone be cut, stabbed or punctured by coming into contact with moving plant or parts, or objects such as ejected work piece or waste? | 1. Where possible, potentially hazardous plant, machinery and processes, including pedestal grinders, are substituted or replaced with less hazardous alternatives.
 | X | [ ]  | **Supervisor to consider the requirements and alternates**  |
| 1. All necessary pedestal grinder guards and safety devices are in place protecting workers from all moving parts.
 | X | [ ]  | **As per manufacturers standards and general pre-flight checks and procedures** |
| 1. “Lock Out” or warning “Danger” tags are affixed to all pedestal grinders under repair or maintenance preventing workers from using the equipment.
 | X | [ ]  | **Standard LOTO Procedures** |
| 1. Staff and member training is provided to minimise exposure to these hazards.
 | X | [ ]  | **Safety induction** |
| 1. Safe operating procedures (SOPs) for all pedestal grinders are available and clearly displayed.
 | X | [ ]  | **With equipment and in SOP folder** |
| 1. “Safe Working Zones” around all pedestal grinders are clearly defined by yellow safety lines (or similar).
 | X | [ ]  | **Supervisor to assess requirements** |
| 1. Emphasis is placed on the requirement for plant operators to remove all jewellery, tuck in loose clothing and tie back long hair.
 | X | [ ]  | **As per SOP requirements** |
| 1. All appropriate and 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. 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 the pedestal grinder.
 | 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?* **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?* **Temperature**

Is the ambient room temperature too extreme and therefore likely to cause the operator discomfort or lack of concentration? | 1. All pedestal grinders are regularly inspected and maintained to help minimise the risk of exposures to these hazards.
 | X | [ ]  | **Routine checks and maintenance** |
| 1. All pedestal grinder maintenance is documented in a register (EMRs).
 | X | [ ]  | **Service records** |
| 1. Exposure to noisy workshop environments is monitored and evaluated regularly for all workers.
 | X | [ ]  | **Active monitoring 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. Staff and member training is provided to minimise exposure to these hazards.
 | X | [ ]  | **Safety induction** |
| 1. All ducted fume extraction systems are fully maintained, cleaned and emptied, connected and operational.
 | X | [ ]  | **As per general 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.
 | X | [ ]  | **As per workspace risk assessment**  |
| 1. All appropriate and approved personal protective equipment (PPE) is used where required.
 | X | [ ]  | **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. All pedestal grinders are fitted with a Direct on Line (DOL) Start/Stop switch (red and green buttons).
 | X | [ ]  | **Centre control switch**  |
| 1. “Lock Out” or warning “Danger” tags are affixed to all pedestal grinders under repair or maintenance preventing workers from using the equipment.
 | X | [ ]  | **Standard LOTO procedures** |
| 1. Visually checks are made of all electrical switches, plugs and power leads, etc.
 | X | [ ]  | **Routine checks and maintenance** |
| 1. Electrical safety inspections, testing and tagging, etc. are completed regularly as per guidelines for all pedestal grinders.
 | X | [ ]  | **Service records****Active supervision and general housekeeping procedures**  |
| 1. Electrical maintenance on all plant and equipment, including pedestal grinders, is documented in EMRs.
 |
| X | [ ]  | **Safety induction**  |
|  **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 volatile vapours and fumes or airborne particulates? | 1. All pedestal grinders are regularly maintained to help minimise the risk of exposures to these hazards.
 | X | [ ]  | **To be assessed by the supervisor before use.** |
| 1. All pedestal grinder maintenance is documented in a register (EMRs)
 | X | [ ]  | **All PPE is provided, as per SOP requirements** |
| 1. Any hazardous waste material or toxic dusts and fumes resulting from this grinding process are monitored and managed.
 | X | [ ]  | **Active supervision and general housekeeping procedures**  |
| 1. Staff and member training is provided to minimise exposure to these hazards.
 | X | [ ]  | **Safety induction**  |
| 1. “Safe Working Zones” around all pedestal grinders are clearly defined by yellow safety lines – (or similar).
 | X | [ ]  | **To be assessed by the supervisor before use.** |
| 1. All appropriate and approved personal protective equipment (PPE) is used where required.
 | X | [ ]  | **All PPE is provided, as per SOP requirements** |
|  **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. All pedestal grinders and adjacent 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 to help ensure unobstructed, safe operation.
 | X | [ ]  | **Supervisor to assess work space requirements** |
| 1. “Safe Working Zones” are clearly defined around all pedestal grinders. Floors are 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 training.** |
|  **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 | [ ]  | **Staff Fire & Evac training.** |
| 1. Exits from buildings and other work areas are defined and access to them kept clear of obstructions.
 | X | [ ]  | **As per Australian building codes** |
| 1. Safety signage is posted clearly denoting the location of all fire safety items and emergency exits.
 | X | [ ]  | **As per Australian building codes** |

| **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:       | Date:       |
| **[ ]**  | Approved as submitted. |
| **[ ]**  | Approved with the following condition(s):      |
| **[ ]**  | Not Approved for the following reason(s):      |
| By:       | Designation:       |
| Signed: | Date:        |

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| ITD staff members involved in the use of this risk assessment & the associated plant & 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 & 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?
* ITD staffing details at this school 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 :  |

|  |  |  |
| --- | --- | --- |
| **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?
* ITD staffing details at this school 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 :  |

|  |  |  |
| --- | --- | --- |
| **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?
* ITD staffing details at this school 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 :  |

|  |  |  |
| --- | --- | --- |
| **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?
* ITD staffing details at this school 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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