

The Fabrication Lab

**Plastic Recycling**

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| **SAFE WORK INSTRUCTION** |
| **Plastic Recycling Activities with The Edge** |
| Activity Authorisation / Supervision | Use of The Edge’s Plastic Recycling equipment is only permitted under supervision by expressly authorized staff members and or contractors.  |
| Description of the Activity | The Edge delivers a range of entry-level Plastic Recycling activities to participants. These include practical, hands-on instruction in:* Using a shredder, injection moulder and extruder purpose built for recycling small quantities of plastic waste
* Preparing plastic waste for recycling, including sorting, cleaning, cutting and storage
* Operation of a 2kW 24V shredder
* Design, manufacture and use of moulds for use with a manual, single shot injection moulding machine
* Operation of manual injection moulder
* Design, manufacture and use of dies for 2kW extrusion machine
* Operation of extruder
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| Tools, Equipment, Materials and Consumables  | 1. Cutting tools, including knives, scissors and saws used for the preparation of plastic for recycling
2. Shredder, Injection Moulder and Extruder built in-house using designs made available through [Precious Plastics](https://preciousplastic.com/) website
3. Private laptop, tablet or mobile device for design of products, moulds and dies. The use of private laptops and mobile devises is subject to the *Bring Your Own Device guidelines*.
4. Plastic materials to be shredded, and shredded plastic used in the injection moulder and extruder.
5. Files, sanders, Dremel, knives and other hand tools used to clean up products made with recycled plastic
6. Adhesives and hardware used in the assembly of projects.
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| Interim Safety Assessment (ISA) | An Interim Safety Assessment (ISA) must be completed and approved by a Program Coordinator before commencement of an activity when:1. The activity will not be facilitated by an SLQ staff member or inducted contractor.
2. The activity will not be conducted in and around The Edge or on SLQ premises *(see SWI for Activities to be Conducted Off-site or in a Public Space).*
3. The activity requires the use of tools, equipment, materials or processes not detailed in Section 2 or 3.
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| Hazards associated with equipment /machinery/technique /process | Most activities in this skill area occupy a low risk profile with the majority of activities taking place in controlled environment of The Edge’s Basement Fabrication Lab. The general risks associated with these standard activities include:1. Trip, slip and falls
2. Electric shock
3. Ergonomic & screen-based work
4. Personal safety and
5. Communicable disease
6. Exposure to environmental hazards

Workers and participants are also exposed to other risks as a greater range of specific tools, processes and materials that are employed in Plastic Recycling Activities. Risk of injury from the wider range of tools, processes and materials listed in Section 3 include:1. The range of hazards associated with feeding materials into the cutting blades of the shredder
2. The range of hazards associated with heating, melting and extrusion of plastics
3. Exposure to hazardous materials released in the finishing and assembly of projects
4. Cuts, abrasions and small crushing injuries from knives, pliers, cutters, sanders, screwdrivers and/or Dremel used in the finishing and assembly of projects.
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| Before Starting  | 1. Check workspace for general tidiness.
2. Ensure all required equipment and materials are in the workspace and ready for use in the session, and batteries are fully charged before use..
3. Where possible re-route cables trailing across walkways. Use cable trays or gaff were unavoidable.
4. Consumption of food and drink in activity spaces is to be avoided where possible. Clear any spills immediately.
5. Encourage ergonomic work practices and encourage regular breaks.
6. Encourage good manual handling practices and provide appropriate equipment (trolleys, truck & straps for securing loads) to assist with larger loads.
7. Address interpersonal difficulties according the *Patron Responsible Behavior Policy* and seek assistance from VSOs or SLQ staff member on duty.
8. *VSO Daily Procedures* and the *Fabrication Lab Daily Procedures* include regular wiping down of all tables, keyboards, mice and computer screens with antibacterial wipes. However if you have particular concerns do not hesitate to collect wipes from reception and rewipe these surfaces.
9. **Ensure all powered (240v+ corded) tools/ devices to be used in a workshop have a current tag test sticker.**
10. **Ensure safety / fire fighting equipment is in place and ready for use.**
11. **Conduct preflight checks of recycling machine being used**
	1. **Conduct a visual inspection of the cleanliness of the machine and consult machine log to ensure maintenance is up to date***.*
	2. **Ensure Hot work Permit is in place**

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| Personal protective equipment (PPE) to be used | 1. Appropriate clothing and foot-ware should be worn at all times during this activity.
2. Hearing and Eye protection will be required for the use of some tools and materials listed in Section 3. (Dremel)
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| Emergency procedures | 1. If the machine begins making unusual noises or malfunctions pause the job, notify the nearest SLQ staff member on duty and await instruction.
2. In the event that debris, stock material or the machine catches fire, abort job using the emergency cut-off switch and notify the nearest SLQ staff member on duty and await instruction.
3. First aid kits are located at Reception, the entrance to the basement Machine Shop, SLQ Reception and the Cultural Centre Security Office.
4. The Cultural Centre Security office phone number is 07 3840 7216.
5. All incidents, **including near misses**, are to be reported to VSO or staff member on duty.
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| Step by step procedures for task  | 1. Keep hands clear of cutting blades when feeding plastic waste into the shredder. Use a push stick to engage material with the cutting blades if necessary.
2. Avoid contact with rotating shafts, keeping loose clothing and hair away to prevent becoming entangled. If tangles occur, activate the emergency stop.
3. If a jam occurs, stop the shredder before reversing the blades to clear the jam, and then re-start the machine.
4. Fill the hopper on the injection moulder before activating the heating bands, and avoid contact with the heated barrel.
5. Only use tools for the job they have been designed for. (Eg using a screwdriver as a leaver, chisel or awl can cause injury.)
6. Cutting tools (scissors, knives, Dremel etc) will be pointed away from the body when in use and pointed down when being transported around the space.
7. Where possible ensure work is secured positively to the workbench before applying any force in the use of any of the following tools - screwdrivers, pliers, knives, Dremel.
8. Staff and Participants are not to introduce electrical/ electronic equipment or devices to an activity space that has not been deemed safe prior to the commencement of the activity.
9. **Members of the public (participants) may use the recycling machines after successfully completing an Induction and under the supervision SLQ staff and or contractors expressly authorized to supervise Participants.**
10. **The machine is to be monitored at all times whilst in operation.**
11. **The machine is to be checked regularly for debris and cleanliness throughout a session as some materials require more frequent cleaning than others.**
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| Clean-up procedures  | 1. Participant benches and works areas will be cleaned down of any offcuts and all tools are to be returned to their place in the workshop.
2. Debris is to be brushed out and the machine cleaned at the end of each session.
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| Waste disposal procedures  | Plastic and other waste can be disposed of in the general waste bins provided in the work area.  |
| Record keeping |  |
| Prepared by: Date: | Peter Musk, Program Officer, Applied Creativity10 May 2010 |
| Approved by, Date: |   |
| Due for review |  |
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