

# Corporate Policy and Procedure

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POLICY	Safeguarding of Equipment and Machinery
CATEGORY	Health and Safety
AUTHORITY	All Departments
RELATED POLICIES	Pre-Start Health & Safety Review Policy Job Hazard Analysis Lockout Program
APPROVED BY	Executive Team
EFFECTIVE DATE	September 1, 2019
REVISION DATE	August 31, 2020

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## Policy Statement

Guided by our corporate values, the City of Guelph recognizes and accepts its overall responsibility for the occupational health and safety of its workers. It is committed to ensuring all equipment and machinery used in the workplace is adequately guarded to prevent access to exposed moving parts that could cause injury.

## Scope

This policy applies to all workers performing work for or on behalf of the City of Guelph.

## Purpose

To ensure parameters are laid out to reduce the risk of injury to workers from exposure to moving parts on machinery or equipment, that may endanger the safety of the worker (this policy does not apply to portable hand tools).

## Definitions

Emergency stop control - a function that is intended to avert harm or to reduce existing hazards to persons, machinery, or work in progress.

Emergency stop button - a red mushroom-headed button that, when activated, will immediately start the emergency stop sequence

### Factory

A building or place other than a mine, mining plant or place where homework is carried on, where,

- i. any manufacturing process or assembling in connection with the manufacturing of any goods or products is carried on,
- ii. in preparing, inspecting, manufacturing, finishing, repairing, warehousing, cleaning or adapting for hire or sale any substance, article or thing, energy is,
  - a. used to work any machinery or device, or
  - b. modified in any manner,
- iii. any work is performed by way of trade or for the purposes of gain in or incidental to the making of any goods, substance, article or thing or part thereof,
- iv. any work is performed by way of trade or for the purposes of gain in or incidental to the altering, demolishing, repairing, maintaining, ornamenting, finishing, storing, cleaning, washing or adapting for sale of any goods, substance, article or thing, or
- v. aircraft, locomotives or vehicles used for private or public transport are maintained.

Guard - a part of machinery specifically used to provide protection by means of a physical barrier. Depending on its construction, a guard may be called a casing, screen, door, enclosing guard, etc.

Machinery - an assembly of linked parts or components, at least one of which moves, with the appropriate machine actuators, control and energy circuits, etc. joined together for a specific application, in particular for the processing, treatment, moving, or packaging of a material.

#### Pre-Start Health & Safety Review (PSHSR)

Process to identify any issues related to use of new apparatus, structure or protective element or where a new process is introduced, or where existing apparatus, structure or protective element is modified so that new or modified engineering controls or measures are used.

#### Supervisor

A person who has charge of a workplace or authority over a worker

#### Worker

Means any of the following, but does not include an inmate of a correctional institution or like institution or facility who participates inside the institution or facility in a work project or rehabilitation program:

1. A person who performs work or supplies services for monetary compensation.
2. A secondary school student who performs work or supplies services for no monetary compensation under a work experience program authorized by the school board that operates the school in which the student is enrolled.
3. A person who performs work or supplies services for no monetary compensation under a program approved by a college of applied arts and

technology, university, private career college or other post-secondary institution.

4. Such other persons as may be prescribed who perform work or supply services to an employer for no monetary compensation;

## Workplace

Any land premises, location or thing at, upon, in or near which a worker works

## Responsibilities

### Executive Team

- Ensure that service area leaders are aware of the content of this policy, and support the successful implementation of the requirements as laid down.

### Managers/Supervisors

- Assess all equipment using [Appendix B – Machine Guarding Checklist](#), to determine if protective devices are required or if currently installed protective devices are adequate. This may be done as part of the [Job Hazard Analysis \(JHA\)](#) process.
- Ensure protective devices are provided for all pieces of equipment that an assessment has determined a guard needs to be provided or upgraded
- Ensure provided protective devices are maintained in good condition
- Approve temporary alternative measures where a protective device is removed, disabled or made ineffective prior to any protective device being removed, disabled or made ineffective, and only for the purposes of repair, maintenance or other measures as prescribed. Any temporary alternative measures must provide at least the same level of protection
- Ensure provided protective devices are used as prescribed by all workers, and are not removed, disabled or made ineffective in any way, unless approved temporary alternative measures are implemented
- Ensure provided protective devices are put back into place when temporary alternative measures are removed
- Ensure appropriate signage is affixed to equipment identifying potential hazards from improper use
- Follow the [Pre-Start Health & Safety Review \(PSHSR\)](#) process as required for installations of new equipment or process or modifications are made to existing equipment or process.
- Ensure all records related to the equipment, including installation, decommissioning and inspection, are maintained for as long as the equipment is owned by the corporation.

### Workers

- Use the protective devices provided
- Report promptly the absence of, or any defect in, the provided protective device
- Do not remove, disable or make ineffective any protective device required by the employer, without permission from a Manager/Supervisor, and then only when an adequate temporary alternative measure, that provides at least the same level of protection, has been identified, approved and implemented.

## Corporate Health & Safety

- Provide assistance to Managers/Supervisors in identifying adequate protective devices
- Update this corporate policy as needed.

## Procedure

1. Where a machine or prime mover or transmission equipment has an exposed moving part that may endanger the safety of any worker, the machine or prime mover or transmission equipment shall be equipped with and guarded by a guard or other device that prevents access to the moving part.
2. Any in-running nip hazard or any part of a machine, device or thing that may endanger the safety of any worker shall be equipped with and guarded by a guard or other device that prevents access to the pinch point.
3. All machinery used to transport materials shall be shielded or guarded so that the product, material being processed or waste stock will not endanger the safety of any worker.
4. An emergency stop control, such as, but not limited to, an emergency stop button, on a power-driven machine shall,
  - (a) be conspicuously identified; and
  - (b) be located within easy reach of the operator.
5. An operating control that acts as a guard for a machine not otherwise guarded shall,
  - (a) be in a location where the safety of the operator is not endangered by moving machinery;
  - (b) be arranged so that it cannot be operated accidentally; and
  - (c) not be made ineffective by a tie-down device or other means.
6. A grinding wheel shall be,
  - (a) inspected on a monthly basis using the [Appendix A – Bench Grinder Monthly Inspection Checklist](#)
  - (b) marked with the maximum speed at which it may be used;
  - (c) checked for defects before mounting;
  - (d) mounted in accordance with the manufacturer’s specifications;**
  - (e) operated at a speed which does not exceed the manufacturer’s recommendations;**
  - (f) provided with protective hoods that enclose the wheel as closely as the work will permit;

- (g) operated only by workers protected by eye protection; and
  - (h) stored where it will not be subjected to,
    - (i) extreme heat or cold, or
    - (ii) damage from impact
7. A work rest for a grinding wheel shall,
- (a) have a maximum clearance of three millimetres from the grinding wheel;
  - (b) be in a position above the centre line of the grinding wheel; and
  - (c) not be adjusted while the grinding wheel is in motion.
8. Portions of conveyors or other moving machinery that are not visible from the control station, and where starting up may endanger any worker, shall be equipped with automatic start-up warning devices.
9. Guards shall be provided beneath conveyors,
- (a) that pass over any worker; or
  - (b) from which falling material, including broken conveyor parts, may be a hazard to any worker.
10. Overhead protection shall be provided where falling material may endanger any worker.
11. A hand-held nailing gun or similar tool shall be,
- (a) capable of being operated only when in contact with the work surface; and
  - (b) operated only,
    - (i) by a competent person, and
    - (ii) when the operator is wearing eye protection.
12. A chain saw shall,
- (a) have,
    - (i) a chain that minimizes the possibility of a kickback, and
    - (ii) a device which will effectively stop the chain in the event of a kickback;
  - (b) be in safe operating condition;
  - (c) when being started, be held firmly;
  - (d) when being used, be held firmly by both hands; and
  - (e) have the chain stopped when not actually cutting.

13. The entrance to a room or similar enclosure containing exposed live electrical parts shall have a conspicuous sign, warning of the danger, and forbidding entry by unauthorized persons.
14. A [pre-start health and safety review](#) is required if, in a factory other than a logging operation, when one of the following circumstances exist:
  - (a) A new apparatus, structure or protective element is to be constructed, added or installed or a new process is to be used; or
  - (b) An existing apparatus, structure, protective element or process is to be modified and one of the following steps must be taken to obtain compliance with the applicable provision:
    1. New or modified engineering controls are used.
    2. Other new or modified measures are used.
    3. A combination of new, existing or modified engineering controls and other new or modified measures is used.
15. When a pre-start health and safety review is required, the owner, lessee or employer shall ensure that the apparatus, structure or protective element is not operated or used or that the process is not used, as the case may be, unless the review has been conducted. Please refer to the [Corporate Pre-Start Health & Safety Review Policy](#) to determine where this sentence and sentence 14 apply.

## Training

### Managers/Supervisors

- Education around the contents of this policy must be provided as soon as practicable after the individual is assigned to this role.

### Workers

- Roles and responsibilities outlined in this policy must be reviewed during their orientation and no less than every three years thereafter.

## Reference Documents

Occupational Health and Safety Act, R.S.O. 1990, c. O.1

R.R.O. 1990, Reg. 851: INDUSTRIAL ESTABLISHMENTS

CSA Z432-16 Safeguarding of Machinery

## Revision History

<b>Document Owner</b>	<b>Issue / Revised Date</b>	<b>Reason For Changes</b>
Health & Safety	September 1, 2019	Initial draft

## Appendix A – Bench Grinder Monthly Inspection Checklist

Make/Model:		Date:	
Location:			

Bench grinders pose hazards such as: exposed moving parts, electrical hazards, potential for entanglement, impact and cutting, exposure to heat, noise, projectiles, sharp objects, friction, sparks and respiratory hazards. DO NOT use a bench grinder unless you have been trained on its safe use and operation.

Is the MACHINE:	Yes	No	N/A
Secured to the bench to prevent it from vibrating / moving during use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Locked out (if being cleaned, adjusted, maintained, repaired, wheel being mounted, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Free from damage (including the power cord)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the WHEEL:	YES	NO	N/A
Suitable for the materials being ground (see label)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The proper size for the grinder?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rated at the same (or greater) RPMs as the grinder (see labels)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Free of cracks, chips, other damage or deterioration?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ring tested before mounting?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the wheel securely mounted?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are TOOL RESTS &/ OR GUARDS:	Yes	No	N/A
Present and in good working order?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adjusted so that the opening between the tool rest and the face of the wheel does not exceed 3 mm (1/8 of an inch)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adjusted so that the opening between the guard and face of the abrasive wheel does not exceed 6 mm (1/4 of an inch)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the OPERATOR:	Yes	No	N/A
Wearing proper PPE (e.g.: safety glasses, face shield, hearing protection, if gloves are needed, are they tight fitting)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Free from loose clothing, ties, jewelry and is long hair tied back?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Properly trained in safe use and operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

## Appendix B – Machine Guarding Checklist

Location:  
 Date of Audit:  
 Auditor(s):

Machine/Device	Requirements	Acceptable		Recommendations
<b>GUARDING REQUIREMENTS</b>				
	Do the current guards prevent hands, arms, fingers and other body parts from making contact with moving parts?	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	
	Do the guards ensure that no objects can fall into moving parts?	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	
	Do the guards ensure that no moving parts can release objects as projectiles?	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	
	Do the guards allow for regular maintenance of the machine?	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	
	Does the machine have a method for automatic shut down if a guard is removed or bypassed?	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	
	Is there evidence that a guard or interlock has been modified or tampered with?	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	
	Can the machine be locked out at the main power source this includes all types of energy (electricity, hydraulic, pneumatic etc.)	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	
	If the equipment is provided with a jog function does it have a limit to the amount of travel allowed?	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	
	Are devices used to release/block stored energy?	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	
	Do the guards themselves create any hazards such as pinch points or sharp edges?	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	
	<b>Is there adequate signage informing worker's</b> of potential hazards and guard requirements?	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	
	Are guards easily marked and identified?	Yes	<input type="checkbox"/>	
		No	<input type="checkbox"/>	

Machine/Device	Requirements	Acceptable	Recommendations
<b>OPERATOR CONTROLS</b>			
	Is there a point of operation guard provided that keeps the operators hands, fingers and body clear of moving parts?	Yes No	
	Are starting/ stopping controls within easy reach of the operator?	Yes No	
	Are controls, including foot controls, guarded against accidental activation?	Yes No	
	Are all controls labeled to identify their function?	Yes No	
	Is the machine wired so that it must be manually re-started if power is interrupted and then re-applied?	Yes No	
<b>POWER TRANSMISSION APPARATUS</b>			
	Are there any unguarded gears, sprockets, pulleys or flywheels on the apparatus?	Yes No	
	Are there any exposed belts or chain drives?	Yes No	
	Are there any exposed set screws, key ways, collars etc?	Yes No	
	Are the starting and stopping controls within reach of the operator?	Yes No	
	Is there more than one operator and are there separate controls provided.	Yes No	
Machine/Device	Requirements	Acceptable	Recommendations
<b>PERSONAL PROTECTIVE EQUIPMENT</b>			
	Is personal protective equipment required?	Yes No	
	Is the protective equipment appropriate for the job, in good condition, kept clean and sanitary and stored carefully when not in use?	Yes No	
	Is the operator's clothing adequate for the job? (no loose fitting clothing, jewelry)	Yes No	

	Is there adequate signage promoting the use of the proper PPE for each specific machine?	Yes		
		No		
EDUCATION AND TRAINING				
	Is there a safe operating procedure for this machine, and are all users conversant with it?	Yes		
		No		
	Do all operators know the hazards associated with the machine they are operating?	Yes		
		No		
	Have operators and maintenance personnel been trained in how and under what circumstance guards can be removed?	Yes		
		No		
	Have all operators been trained in the procedure they must follow if the notice guards missing, damaged, or inadequate?	Yes		
		No		

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