

Date Revised:	May 2022	Overall Task Risk Rating:	Before Controls	<b>B</b>	After Controls	<b>C</b>
Description:	Lead is a designated substance under Regulations of the Occupational Health and Safety Act. It is a heavy metal that may be used in its pure elemental form or combined chemically with other elements to form lead compounds. Inorganic lead compounds are used in pigments, paints, glasses, plastics and rubber compounds. It can be present at a construction site in existing structures, building components, and where lead was previously used in a manufacturing process.					
Location(s):	Shop & Construction Projects					
Associated Documents: Housekeeping WTS, Hazardous Agents (Chemical) WTS, Maintenance & Cleaning WTS, Hot Work WTS, Equipment & Machinery WTS, Removal & Demolition WTS						

**RED FLAGS (HOLD WORK UNTIL CORRECTED):**

Note:

- If the worker has not been trained in WHMIS that worker must not use, transport or handle hazardous products
- the required PPE to be worn when working with a hazardous agent, do not proceed before obtaining and donning that PPE

**PERSONAL PROTECTIVE EQUIPMENT (CSA APPROVED)**

Head Protection	Foot Protection	High-Vis Protection	Hearing Protection	Hand Protection	Eye Protection	Respiratory Protection	Skin Protection	Face Protection	Fall Protection
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- When onsite one must adhere to the minimum site requirements (i.e. Safety Boots, Hard Hat & High Visibility Protection). Additional protection including respirators maybe required when lead exposure levels cannot be controlled by engineering or administrative controls.

- Skin, Eye and Hand protection will be required for Lead-Acid batteries handling and replacement operations.

**SAFE WORK PRACTICES (SWP)**

**Important Legislations & References:**

- Regulation for Designated Substances, O. Reg. 490/09
- Workplace Hazardous Materials Information System. (R.R.O. 1990, Reg. 860)

**Gazzola Paving Ltd. workers may be exposed to lead hazards on the following tasks:**

- Replacing equipment batteries.
- Working on a construction project where lead has been identified to be present on the list of designated substances provided by the owner or the constructor of a project.

**Construction activities of concern to Gazzola Paving Ltd. workers if working on a construction project where lead hazard has been identified to be present would be:**

- welding, burning, or high temperature cutting of lead-containing coatings or materials
- removal of lead-containing dust using an air mist extraction system
- removal of lead-containing mortars using an electric or pneumatic cutting device.

**Effects:**

- To exert a toxic effect, a substance or a hazardous agent must contact and, in most cases, enter the body (except those that are only skin irritants). Once inside the body they can enter the bloodstream and be carried to organs where they may cause damage.
- Inhalation: Airborne lead particles in the form of fumes, dusts and mists can be inhaled deeply into the lungs if they are small enough.
- Ingestion: Larger airborne lead particles are trapped in the upper respiratory tract, cleared from the lungs, and subsequently swallowed. You can also swallow lead dust if it gets in your food or drinks, or if you eat or smoke without washing your hands first.
- Shortly after lead is inhaled or ingested, it can enter the bloodstream and travel to soft tissues (such as the liver, kidneys, lungs, brain, spleen, muscles, and heart). After several weeks, most of the lead moves into bones and teeth and can be stored there for a long time. Therefore, exposure to small amounts of lead can build up over time, and the more lead you have in your body, the more likely it is that you will experience health problems.
- Early signs of lead poisoning include tiredness, irritability, muscle and joint pain, headaches, stomach aches and cramps

**Controls:**

- Wet methods will be used to reduce dust and should be used whenever practical, particularly in welding operations or removal of lead containing material. Continuous spraying of water must be maintained using water trucks to keep dust at minimal levels.
- Ventilation must be adequate with all work operations involving Lead. Regular operations in the shop and construction projects are usually occurring in an open environment with natural ventilation, however, local ventilation must be provided if necessary as required.
- Most dust-generating tools are equipped with dust collection systems to prevent dust from spreading or becoming airborne. An essential component of these systems are the cleaning devices, such as filters, which will effectively remove the dust.
- Maintenance schedule of equipment must be strictly followed to ensure effectiveness of air-filtering devices providing protection from airborne dust.
- If a process cannot be modified to reduce exposure, it may have to be isolated or enclosed if possible. Dusty operations can be isolated by carrying them out in areas that are physically separated from non-dusty areas and keeping workers not involved in the operation out of the area.
- Where isolation is not effective, the process can be completely sealed off from the rest of the workplace with an enclosure.
- Drop sheets should be used below all lead operations which produce or may produce dust, chips, or debris containing lead.
- Cleanup after each operation is encouraged to prevent lead contamination and exposure.
- Dust and waste should be cleaned up at regular intervals and placed in a container that is:
  - Dust tight
  - Identified as containing lead waste
  - Cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before being removed from the work area
  - Removed from the workplace frequently and at regular intervals
- Compressed air or dry sweeping should be avoided when cleaning a work area. Compressed air should not also be used for cleaning dust from clothing
- Respiratory protection may be required to be used if exposure levels to lead cannot be controlled using engineering and administrative controls. Workers must be trained in the fit, care and use of the appropriately selected respirator and cartridges.
- Contaminated personal protective clothing and equipment should be handled with care to prevent disturbing and generation of dust containing lead.
- Washing facilities consisting of a wash basin, water, soap and towels should be provided and workers should use these washing facilities before eating, drinking, smoking or leaving the project.
- No smoking, eating, drinking in contaminated areas and lunches should be stored in an uncontaminated area.
- Hygiene practices and good housekeeping must be practiced whenever lead is present.

**Lead-Acid Battery:**

- Only authorized personnel are allowed to work with lead-acid batteries.
- Store or recharge lead-acid batteries in a well-ventilated area away from sparks or open flames. Keep lead-acid battery vent caps securely in place.
- Keep lead-acid batteries that are damaged in properly labeled, acid-resistant secondary containment structures.
- Wear acid-resistant goggles/face shield, gloves, and an apron, when recharging or handling lead-acid batteries.
- Flush eyes immediately with water for 15 minutes and then promptly seek medical attention if acid gets into your eye(s).
- Rinse the affected area immediately with large amounts of water if acid gets on your skin. Seek medical attention if the chemical burn appears to be second degree or greater.
- Never overcharge a lead-acid battery and only replenish fluid with distilled water.
- Locate emergency eyewash stations close to lead-acid battery storage and charging areas.
- Post "Flammable – No Smoking" signs in lead-acid storage and charging areas.

**Inspections:**

- Supervisors must monitor the use/exposure to hazardous agents in the workplace, to ensure workers are not overexposed to respective allowable levels
- Workers must inspect equipment before use to ensure equipment is in good working order and all safety devices are functioning properly
- Work area should be inspected at least daily to ensure that the work area is clean.

- Training:**
- Employee Orientations (including roles, responsibilities, applicable workplace task standards, WHMIS, etc.)
  - Workers exposed to, or required to work with WHMIS controlled products / material, must be trained in WHMIS accordingly.
  - Workers required to use respiratory protection must be trained on the use, fit and care of respirators.
- Personal Protective Equipment:**
- Workers on construction projects must wear, at a minimum, Safety Boots, Hard Hat & High Visibility Protection).
  - Respiratory protection maybe required when exposure levels can not be controlled using engineering or administrative controls.
  - Skin, Eye and Hand protection will be required for Lead-Acid batteries handling and replacement operations.
  - All employees shall wear the appropriate PPE where the potential exposure of a designated substance cannot be reduced below the occupational exposure limit
  - When there is likelihood of exposure, appropriate PPE will be provided with instructions covering use, care and maintenance
  - No modification or removal of the specified PPE will be tolerated inside identified area

JOB HAZARD AND RISK ANALYSIS		RISK RATING SYSTEM							
			<table border="1"> <tr> <td>A</td> <td>High risk of injury or equipment / property damage.</td> </tr> <tr> <td>B</td> <td>Medium risk of injury or equipment / property damage.</td> </tr> <tr> <td>C</td> <td>Low risk of injury or equipment / property damage.</td> </tr> </table>	A	High risk of injury or equipment / property damage.	B	Medium risk of injury or equipment / property damage.	C	Low risk of injury or equipment / property damage.
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TASK HAZARDS	RATING BEFORE CONTROLS	TASK CONTROLS	RATING AFTER CONTROLS						
• Lack of training and education	B	<ul style="list-style-type: none"> <li>• Workers receive adequate training during employee orientations &amp; specific, task-related training</li> <li>• Only trained workers to perform work in the presence of a designated substance</li> </ul>	C						
• Lack of proper PPE	B	<ul style="list-style-type: none"> <li>• Ensure any PPE as mandated is worn while handling the respective hazardous agent</li> <li>• Ensure all workers are trained in the PPE that they require</li> </ul>	C						
• Airborne Lead Dust	B	<ul style="list-style-type: none"> <li>• Use Soap and Water to Wet the Material</li> <li>• Mister machines. Water trucks and sweepers will apply water in quantities necessary to prevent airborne dust</li> <li>• Workers will wear appropriate PPE</li> </ul>	C						
• Lead fumes	B	<ul style="list-style-type: none"> <li>• Respiratory protection must be used when exposure levels cannot be controlled</li> </ul>	C						
• Lead poisoning	B	<ul style="list-style-type: none"> <li>• Wear appropriate PPE including skin, eye and hand protection</li> <li>• Practice good housekeeping and hygiene practices</li> </ul>	C						
• Handling and storage of lead-acid batteries	B	<ul style="list-style-type: none"> <li>• Only authorized personnel are allowed to work with lead-acid batteries.</li> <li>• Store/recharge in well-ventilated areas. Keep vent caps securely in place</li> <li>• Workers will wear appropriate PPE</li> </ul>	C						
• Poor Housekeeping	C	<ul style="list-style-type: none"> <li>• Keep a clean working area</li> <li>• Ensure proper clean up / wash procedures followed</li> </ul>	C						
• Inadequate Ventilation	B	<ul style="list-style-type: none"> <li>• Work performed in an open environment with natural ventilation</li> <li>• Local ventilation implemented where natural ventilation is not sufficient</li> <li>• Wear respiratory protection when exposure levels are in excess</li> </ul>	C						

		<ul style="list-style-type: none"> <li>Respiratory protection and filters are to be selected according to the material/ dust</li> </ul>	
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**SAFE JOB PROCEDURES (SJP)**

**Pre-Task Commencement:**

1. Gather and wear the required PPE for the task - all must wear head, foot, high visibility protection – Skin, eye and hand protection required for working with lead-acid batteries - Respiratory protection as required
2. Ensure the site-specific workplace violence assessment is complete
3. Complete the Daily GAZZ Card and review with all workers the shift's tasks with any associated hazards and control strategies
4. Ensure all workers understand the GAZZ Card contents, and sign off in acknowledgement
5. Ensure controls are in place prior to commencing work so risks are mitigated / eliminated
6. Determine what equipment / machinery / tools and material, are required for the completion of the task
7. Inspect all equipment / machinery / tools prior to use and document the inspections on appropriate forms when required
8. Ensure preventative maintenance activities have been completed where required, prior to using equipment / machinery / tools
9. If equipment / machinery / tools are observed to be damaged, remove it from use and notify the Foreman / Superintendent
10. Install fencing, signage and hoarding where needed
11. Locate utilities – Call Before You Dig
12. If material being demolished contains a designated substance, handle and dispose of it in accordance with regulatory requirements

**During Task:**

1. Consult your supervisor if required and wear all appropriate additional PPE
2. Commence activities when it is safe to do so
3. Supervisors are to monitor all hazardous agents within the workplace and if exposure levels are exceeded, implement corrective actions
4. Operate equipment, machinery and/or tools as per manufacturer's instructions
5. When in operation, do not leave equipment or controls unattended

**Task Completion:**

1. Implement storage requirements in the designated location
2. Ensure all equipment / machinery / tools are maintained and stored appropriately in the designated locations
3. Implement clean-up and any housekeeping or maintenance as required