

Calvin College Lead Policy		Revision 0	
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## 1.0 POLICY

The policy of Calvin College is to comply with applicable standards to ensure there are no adverse affects to the Calvin Community or general public (these standards include MIOSHA R 310, 29 CFR 1910.1025 as well as EPA and DEQ regulations).

## 2.0 PURPOSE

The purpose of this policy is to provide a safe working environment for faculty, staff, students, and tenants who may be exposed to or work with lead.

## 3.0 DEFINITIONS

**Abatement:** A set of measures designed to eliminate or reduce lead based paint hazards in buildings, bridges or other structures or superstructures in accordance with MIOSHA.

**Action Level (AL):** the airborne concentration of lead where OSHA standards come into effect. This concentration of lead is 30 micrograms per cubic meter of air (30µg/m<sup>3</sup>) of air, averaged over an 8-hour period.

**High Efficiency Particulate Air (HEPA):** A filtering system capable of trapping and retaining at least 99.97 percent of all particles of 0.3 µm in diameter.

**Lead Analyses Summary:** A list of the monitored, surveyed, and sampled areas on campus that includes their results and dates.

**Lead (PB):** a malleable metal that was once used in many building materials until it was found to be toxic.

**Lead exposure:** occurs when lead dust or fumes are inhaled, or when lead is ingested via contaminated hands, food, water, cigarettes or clothing.

**Lead Safety:** the combinations of systems, procedures, and equipment that reduce the likelihood of lead exposure and poisoning.

**Lead poisoning:** occurs when a person swallows or inhales lead in any form. The result can be damage to the brain, nerves, and many other parts of the body.

Symptoms include abdominal cramping, anemia, constipation, headaches, irritability, low appetite and energy.

Permissible Exposure Limit (PEL): the concentration of lead exposure to a person where OSHA standards come into effect. This concentration of lead is 50 micrograms per cubic meter of air ( $50\mu\text{g}/\text{m}^3$ ), averaged over an 8-hour period.

Micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ): a measurement of particles in a volume of air used for determining the amount of exposure to lead.

Micrograms per deciliter ( $\mu\text{g}/\text{dl}$ ): a measurement of particles in a volume of liquid used for determining blood lead levels in a person.

#### **4.0 RESPONSIBILITIES**

- Directors and Department Heads
  - Ensure that employees who deal with lead are adequately trained or qualified.
  - Ensure the lead plan is implemented within the department.
  - Ask EH&S any questions related to lead safety.
- Med One
  - Provide medical consultations and examinations for workers & students who have been overexposed or believe they may have been overexposed to lead.
  - Maintain medical records relating to consultations, examinations and medical surveillance.
- Contractors
  - Review lead hazards and scope of work, including Appendix A (Project Assessment & Authorization), with the appropriate Assistant Director and/or EH&S before work commencement.
  - Must have their own lead protection plan/program that meets all applicable regulations and present it to the EH&S Department before hire.
  - If doing abatement work, the contractor must be RRP certified & provide the EPA's Renovate Right pamphlet to tenants/renters.
  - Follow Calvin's Contractor policy.
  - Work with EH&S to coordinate safety procedures.
  - Inform EH&S of any monitoring results.
- Environmental Health and Safety
  - Review the lead plan annually and revise as needed.
  - Provide training to employees with potential exposure to airborne lead at any concentration annually and when they are first hired into the position.

This training shall inform the employees of information applicable to their tasks, exposure, risks and government requirements.

- Coordinate RRP certification training as needed for impacted staff.
- Review possible lead exposure for projects or tasks with Calvin employees and contractors as necessary.
- Coordinate lead inspections and air monitoring as needed.
- Provide technical guidance to employees concerning lead, hazard evaluation, and hazard control.
- Provide assistance to any department or individual requesting guidance or training to satisfy implementation of this plan.
- Maintain documents such as training records, lead paint analyses, air monitoring, medical records, and abatement history.
- Ensure renters/tenants receive the proper EPA pamphlets and lead-based paint acknowledgement form.
- Physical Plant Assistant Directors
  - Support the Lead Policy and ensure employee compliance.
  - Work with EHS to complete an Assessment & Authorization before projects impacted by lead-based paint begin. This form is available under the asbestos plan or from EHS.
  - Ensure that employees are informed, trained, and provided with the appropriate lead protection systems and PPE.
  - Ask EH&S any questions related to lead safety.
- All Employees
  - Report existing health or safety hazards to their supervisor.
  - Comply with the lead policy and any further safety procedures and recommendations provided by the supervisor or EHS regarding lead exposure issues.
  - Conduct assigned tasks in a safe manner and wear all assigned personal protection equipment.
  - Check PPE for damage before use.
  - Clean half masks and throw away tyvek suits and gloves at the end of the working day.
  - Report any unsafe or unhealthy work conditions and lead related injuries or illness to the supervisor or EHS immediately. These include but are not limited to:
    - Positive blood lead results
    - Crumbling paint
    - Physical injuries around lead dust
    - Paint ingestion

- Lead exposure symptoms
  - Use good housekeeping such as keeping a clean work place.
  - Practice good hygiene by washing face and hands before lunch break and at the end of the work day.
  - Ask your Supervisor, Director/Department head, or EH&S any questions related to lead safety.
- Renters/Tenants
  - Report to your Calvin contact or the EHS department crumbling paint or suspected areas where lead exposure may occur. Do not mop, vacuum, or in any way clean crumbling paint chips.
  - Avoid rooms with crumbling paint. Keep children out of the room or area until Calvin is able to coordinate abatement or stabilization of the paint.
  - Stay out of designated areas while abatement is underway.
  - Off-campus renters/tenants must review EPA's Protect Your Family From Lead In Your Home pamphlet.
  - Off-campus renters/tenants must review EPA's Renovate Right pamphlet if renovations and/or repair work will take place in the home.
  - Tell your doctor and your children's doctor of the possibility of lead exposure. Follow your doctor's advice on how to minimize risk and testing lead levels.

## 5.0 PERSONAL PROTECTIVE EQUIPMENT

Every person involved in or near the disturbance of lead paint must wear must wear the following PPE provided by Calvin's EHS Department:

General Type	Kind	Disposal/Maintenance	Inspection
Gloves	Depends on activity	Disposed at the end of the work day	Before use
Respirator	EHS to determine	Maintained and cleaned by the user	Before & after use

Respirators shall meet NIOSH standards or better for lead containing fumes, dust, etc.

PPE shall be determined based on lead risk assessments and/or air monitoring.

Until an assessment is completed or previous testing information relative to the task is found, employees shall wear gloves and an N95 half-mask respirator.

## 6.0 PROCEDURE

- Operations that generate lead dust and fumes include the following:
  - Flame-torch cutting, welding, the use of heat guns, sanding, scraping and grinding of lead painted surfaces in repair, reconstruction, dismantling, and demolition work
  - Abrasive blasting of structures containing lead-based paint
  - Use of torches and heat guns, and sanding, scraping, and grinding of lead-based paint surfaces during remodeling or abating lead-based paint
  - Maintaining process equipment or exhaust duct work
  
- Lead Based Paint
  - Tasks that have potential to create lead dust will be evaluated through air monitoring. Results will be recorded and kept on file.
  - Areas of known lead based paint are to be checked annually for cracks, flaking, and molding, and other signs of deterioration.
  - EHS will determine the appropriate respirator based on activities to be performed.
  - The target area will be contained to prevent the lead from spreading.
  - Any Calvin employees involved in scraping for painting purposes shall cover nearby vents with plastic sheeting.
  - If work is to be performed in an area containing lead-based paint and there are nearby occupants or contractors, EHS or an AD must inform these people of the presence of lead-based paint and their work activities.
  
- Laboratory Lead Use:
  - Lab managers or instructors shall inform student works of safety precautions when working with lead-based substances.
  - Used filters will be put in a plastic container, labeled, and brought to the waste storage room when full.

## 7.0 INFORMATION AND TRAINING

Employees who paint, abrade, sand, cut, weld, or any other activity which may disperse lead into the air shall be knowledgeable of the following:

- Background information on lead
- How to use the proper PPE
- Where lead exposure is possible
- Recognition of lead-based paint deterioration and damage
- Health problems caused by lead exposure

Training for impacted staff will occur annually.

## **8.0 AIR MONITORING**

- Lead paint is assumed to exist in all buildings except the new sections of the Spoelhof Fieldhouse Complex.
- Where operations and maintenance work involving a wall, window, or other surface is going to be performed, an assessment can be performed by EH&S or a qualified contractor.
- Since exposure is based on the amount of lead present and the specific operation, an assessment should be performed for each operation. See Appendix B (Lead Exposures by Task) for a list of operations that have been assessed, described as minimal, and do not require controls.
- Lead exposure from normal maintenance work will be initially monitored to assess employee exposure levels. If the exposure levels are below the action level (AL) but above zero, basic respirators (N95) are used. If the levels are above the AL, then steps as specified in OSHA 29 CFR 1926.62 are taken.
- Lead determination in materials such as solder may be based on material safety data sheet (MSDS) information. If the MSDS is not available, lead exposure may be estimated from past assessments.
- Tasks that have the potential to create lead dust will be evaluated through air monitoring.

## **9.0 MEDICAL SURVEILLANCE**

Respirators are required for those working in areas of lead disturbance. A medical clearance is required from Med-1 before EHS can complete the fit test.

Employees, students, or staff that have symptoms related to lead over-exposure or were involved in an incident that allowed for the possibility of over-exposure to lead will be assessed by Med-1 for confirmation and direction for treatment.

Employees who have lead exposures will be included in a medical surveillance program which consists of blood-lead testing and further training.

## **10.0 DISPOSAL**

Lead waste generated by construction activities is the responsibility of the contractor.

Waste from the laboratories will be collected and stored properly until disposal in the Science Building room 055.

Questions regarding disposal methods should be directed to EHS.

Waste from contractor construction activities shall be handled in accordance with applicable regulations. Contractors are responsible for collecting, storing and disposing of their wastes properly.

Lead dust wastes generated from employee activities (such as scraping paint, sawing, grinding, etc) on campus shall be collected using a HEPA vac. Contact EHS for instructions on how to use the vac.

Other lead wastes, such as paint chips or building materials coated with lead-based paint, shall be collected and stored in SB055. EHS will have a representative sample analyzed to determine the proper method of disposal.

Sand grit from sand-blasting machines must be collected and stored in a sealed container. Contact EH&S to have the container brought to SB055 for proper storage and disposal.

## 11.0 HISTORY

Revision	Date	Description
0	12/22/2009	Initial release

**APPENDIX A: PROJECT ASSESSMENT & AUTHORIZATION**

Work Order Number: \_\_\_\_\_ Physical Plant Supervisor: \_\_\_\_\_

Requested date of project completion: \_\_\_\_\_ Expected start date: \_\_\_\_\_

Building/Room Number(s) \_\_\_\_\_ Account#: \_\_\_\_\_

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**ASSISTANT DIRECTOR DESIGN or SERVICES COORDINATOR or EHOS OFFICER:**

NOTE: Check Asbestos or Lead Survey Results binder for ACM information

Are asbestos, mold, or lead containing materials present in the work area?

ASBESTOS: YES NO UNKNOWN

LEAD: YES NO UNKNOWN

MOLD: YES NO UNKNOWN

Does the type or location of work have the potential to disturb ACM, PACM, or mold?

ASBESTOS: YES NO UNKNOWN

LEAD: YES NO UNKNOWN

MOLD: YES NO UNKNOWN

**PHYSICAL PLANT ASSISTANT DIRECTOR, MAINTENANCE/ARCHITECTURAL:**

Is ACM/PCM, PB, or mold disturbance expected?

ASBESTOS: YES NO UNKNOWN

LEAD: YES NO UNKNOWN

MOLD: YES NO UNKNOWN

If ACM/PACM, PB, or mold is present but it is anticipated that it will not be disturbed, state precautionary measures that will be used or reasons that ACM/PACM or PB disturbance is unlikely:

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If ACM/PACM disturbance is probable, which materials are likely to be disturbed? (Circle all that apply)

- |                        |                           |                              |
|------------------------|---------------------------|------------------------------|
| DRYWALL                | ALL TYPES OF CEILING TILE | SPRAY ON DECORATIVE MATERIAL |
| PLASTER                | FLOOR TILE AND MASTIC     | LINOLEUM                     |
| SPRAY-ON FIRE PROOFING | SPRAY-ON ACOUSTICAL       | FIRE DOORS                   |

THERMAL SYSTEM INSULATION (TSI)

OTHER MATERIALS SPECIFY: \_\_\_\_\_

If PB disturbance is probable, which materials and in what way are they likely to be disturbed?

\_\_\_\_\_  
\_\_\_\_\_

If mold disturbance is probable write what type if known?

\_\_\_\_\_  
\_\_\_\_\_

**Forward form to Environmental Health and Occupational Safety Officer (EHOS) as soon as possible before the project starts. Remember that it could take a week to schedule the inspection and 10 days before asbestos material can be removed.**

**ENVIRONMENTAL HEALTH AND OCCUPATIONAL SAFETY:**

Comments from EHOS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
**EHOS Officer Signature**

\_\_\_\_\_  
**Date**

## APPENDIX B: Lead Exposures by Task

Personnel	Task	Date	Location	Results	Air Monitoring by
Calvin & contract painter	Beam scraping	5/27/2003	SFC	2.9 µg/m <sup>3</sup>	Environmental Health Resources
Circuit Electric	Removing light fixtures from catwalk via aerial lift	3/19/2008	SFC	17 µg/m <sup>3</sup>	Environmental Advisory Group
FHC Company	Installing beam clamps	3/19/2008	SFC	17 µg/m <sup>3</sup>	Environmental Advisory Group
Nagel Construction	Cutting ladder joists at catwalk using a rotary saw with a capture system	3/19/2008	SFC	17 µg/m <sup>3</sup>	Environmental Advisory Group
Mid-State Asbestos Removal	Stripping lead-based paint from ceiling	8/28/2008	SFC	4.2 µg/m <sup>3</sup>	Environmental Advisory Group
Mid-State Asbestos Removal	Chemically stripping lead-based paint	11/18/2008	SFC	4.3 µg/m <sup>3</sup>	Environmental Advisory Group
Mid-State Asbestos Removal	Hand stripping lead-based paint off ceiling	1/22/2009	SFC	4.6 µg/m <sup>3</sup>	Environmental Advisory Group
Cascade Concrete	Demo in locker room	1/28/2009	SFC	5.4 µg/m <sup>3</sup>	Environmental Advisory Group
Rockford Construction	Demo of wall by hand sawing concrete floors	2/23/2009	SFC	3.2 µg/m <sup>3</sup>	Environmental Advisory Group

\*Note: Action Level = 30µg/m<sup>3</sup>; Permissible Exposure Limit = 50µg/m<sup>3</sup>