

Title: Lead Compliance Plan	Document No.: IH-012-A
	Revision No.: 00 Date: 3/7/08
Approved By: Al Swavy	

- 1.0 Purpose: The purpose of this document is to outline the management of lead containing materials at UB. The information presented in this document represents minimum safety requirements.
- 2.0 Scope: This program applies to all employees who work in areas where exposures to lead may occur.
- 3.0 Applicable Codes:
 - 3.1 OSHA – 29CFR 1910.1025, Lead in General Industry
 - 3.2 OSHA - 29CFR 1926.62, Lead in Construction
 - 3.3 OSHA – 29CFR1910.1200, Hazard Communication
 - 3.4 OSHA – 29CFR 1910.134, Respiratory Protection
 - 3.5 OSHA - 29 CFR 1910.1450, Laboratory Standard
 - 3.6 NYS Right to Know
 - 3.7 EPA – 40CFR Part 745, Lead Based Paint activities in target housing and child occupied facilities
 - 3.8 EPA – 40CFR Parts 402, 403 and 404, Toxic Substances Control Act Title IV – Waste Disposal
 - 3.9 EPA – 40CFR Parts 745, 402, Training and Certification
- 4.0 Applicable Guidelines:
 - 4.1 Housing & Urban Development (HUD), “Guidelines for the Identification and Control of Lead-Based Paint Hazards in Housing”, June, 1995
- 5.0 Responsibilities:
 - 5.1 Employees
 - 5.1.1 Follow lead safety procedures.
 - 5.1.2 Notify supervisor of tasks or procedures that may cause lead exposure.
 - 5.2 Supervisors
 - 5.2.1 Contact EH&S for sampling if materials being worked with are suspected of containing lead.
 - 5.2.2 Ensure that employees receive appropriate training.
 - 5.2.3 Ensure that employees follow established safety procedures and that engineering controls are properly functioning.
 - 5.2.4 Notify EH&S of employees who may have a potential exposure to airborne lead, as well as operations or changes that may produce or increase lead exposure to employees.
 - 5.2.5 Ensure that employees who perform work that may have a potential to exceed the Action Level (Controlled Operation) are in a medical surveillance program and have had a base-line blood lead sample prior to starting work.
 - 5.2.6 Provide employees with personal air monitoring results within two days of their receipt from EH&S.
 - 5.3 University Facilities Planning and Design
 - 5.3.1 Contact EH&S in planning stages so that samples can be taken on materials suspected of containing lead (by EH&S or a subcontractor)

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- 5.3.2 Inform EH&S of all upcoming work that may involve the disturbance of lead-containing materials at the project design phase, so that recommendations can be included in bid specifications.
- 5.3.3 Submit for approval to EH&S any proposed procurement of lead-containing materials.
- 5.3.4 Ensure that bid specifications disclose all hazardous lead materials that may be encountered by a contractor, and the party responsible for their mitigation.
- 5.4 University Facilities Operations
 - 5.4.1 Work with EH&S to monitor and minimize exposures
 - 5.4.2 Contact EH&S for sampling when paint may contain lead
 - 5.4.3 Operations Safety Supervisor will train Facilities Operations personnel who perform any tasks in which there is a potential exposure to airborne lead at any level.
- 5.5 Environment, Health & Safety Services (EH&S)
 - 5.5.1 Conduct exposure assessments and workplace monitoring to determine an employee's potential exposure to airborne lead.
 - 5.5.2 Conduct direct reading or destructive sampling of materials to determine potential lead content.
 - 5.5.3 Recommend appropriate engineering and administrative controls to ensure that airborne lead levels do not exceed the OSHA Action Level.
 - 5.5.4 Recommend appropriate personal protective equipment (PPE).
 - 5.5.5 Notify supervisors of personal lead air monitoring results within three days of their receipt.
 - 5.5.6 Conduct training for employees outside of Facilities Operations who perform any tasks in which there is a potential exposure to airborne lead at any level.
 - 5.5.7 Recommend respirators and filters, and provide contacts to obtain annual respirator fit-tests for employees who use respiratory protection to reduce lead exposure.
 - 5.5.8 Manage and update the UB Lead Compliance Program.
 - 5.5.9 Identify employees who should be considered for the Medical Surveillance Program.
 - 5.5.10 Personal and area air sampling results collected by subcontractors shall be submitted to Facilities Project Managers, when applicable, for collection, retention, and distribution to EHS Industrial Hygienists for review. Copies of the results of samples collected by EH&S Industrial Hygienist will be forwarded to Facilities Project Managers, when applicable, for collection and retention.
 - 5.5.11 Determine proper packaging, shipping and paperwork for wastes
 - 5.5.12 Maintain disposal records.

6.0 Definitions:

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- 6.1 Action Level- An OSHA occupational exposure limit (without use of respirators) for airborne contaminants. For lead it is 30 micrograms per cubic meter of air (30 $\mu\text{g}/\text{M}^3$) for an 8-hour Time-Weighted Average (TWA). Employees whose exposure is above the Action Level for more than 30 days per year are required to be in a medical surveillance program.
- 6.2 Affected Employee- Any employee whose exposure is at or above the Action Level.
- 6.3 ALARA - As Low As Reasonably Achievable. UB policy is to keep employee chemical exposure as low as feasible.
- 6.4 Blood Lead Level (BLL) – The amount of lead, measured in micrograms (μg), present in a deciliter (d) of whole blood.
- 6.5 HEPA- A High Efficiency Particulate Air Filter capable of filtering 0.3 micron particles with 99.97 percent efficiency.
- 6.6 Lead- Metallic lead, all inorganic lead compounds (e.g., laboratory reagents, solder), and organic lead soaps. All other organic lead compounds, such as tetraethyl lead, are excluded from this definition.
- 6.7 Lead Paint- Paint containing greater than 0.05 % (500 ppm) lead.
- 6.8 Medical Surveillance- Consists of medical examinations as well as blood sampling for lead and zinc protoporphyrin, if applicable. Performed by or under the supervision of a physician. The LBL EHS Health Services Group is responsible for the Medical Surveillance Program.
- 6.9 Permissible Exposure Limit (PEL) - OSHA occupational exposure limit (without regard to the use of respirators) for airborne contaminants. For lead it is 50 micrograms per cubic meter of air (50 $\mu\text{g}/\text{m}^3$) for an 8-hour Time-Weighted Average (TWA). Exposure to airborne lead above the PEL triggers requirements such as housekeeping, engineering controls, showers, change and lunch rooms, area posting, personal protective equipment, and respiratory protection.
- 6.10 PPE- Personal Protective Equipment. Safety equipment worn by employees; may include safety glasses, respirators, coveralls etc.
- 6.11 Time Weighted Average (TWA) – the amount of lead dust a person is exposed to (by weight), divided by the number of hours of exposure during a day. Exposures at low concentrations will offset exposures at higher concentrations.
- 7.0 Hazards of Lead
- 7.1 Ways in which lead enters the body
- 7.1.1 Lead can be absorbed into the body by inhalation (breathing) and ingestion (eating). Lead (except for some organic compounds not covered by this program) is not absorbed through the skin.
- 7.1.2 Inhalation of lead is considered the most important source of occupational exposure.
- 7.1.3 When lead is scattered in the air as a dust or fume particle, it can be inhaled and absorbed into the blood stream through the lungs and upper respiratory tract.

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7.1.4 Lead can also enter via the digestive system if it enters the mouth and is swallowed. As an example, lead can be ingested by handling cigarettes, food, etc., with lead contaminated hands.

7.2 Effects

7.2.1 When lead gets into the body it is only partly eliminated. The majority of the lead is stored in the bones and other tissues. As exposure to lead continues, the amount stored in the body increases if more lead is absorbed than is excreted. Consequently, continuous exposure to low levels of lead can, over time, cause lead to accumulate in the body and lead poisoning may result.

7.2.2 Short term (acute) overexposure. Large doses of lead may cause seizures, coma, and death from cardio-respiratory arrest. Short term occupational exposures leading to these effects are unusual but possible.

7.2.3 Long-term (chronic) overexposure may result in damage to the blood-forming, nervous, urinary, and reproductive systems. Some common symptoms of overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, insomnia, headache, nervous irritability, muscle and joint pain, and tremors.

8.0 Examples of Possible Lead Exposure Sources

8.1 Lead-Based Paint (banned 1977): Sanding, scraping, burning, welding, ingestion.

Note: The paint on metal surfaces like structural steel generally contains very high (20-40%) levels of lead.

8.2 Drinking Water: Some water sources, lead solder in pipes (banned in 1986)

8.3 Metallic Lead: Casting lead or brass, shielding and counter weights, soldering, sawing, cutting, etc.

8.4 Soil: Automobile exhaust, paint chips, fumes downwind of a smelter

8.5 Miscellaneous: Pottery glazes, leaded crystal decanters, "folk" medicine, tin cans (banned in USA), indoor shooting ranges, hobbies (stained glass, fishing sinkers).

9.0 Procedures:

10.0 Document Management: This procedure shall be reviewed once every two years, or as changes require.

11.0 Associated UB Documents:

11.1 *Campus Commitment to Safety*, University at Buffalo, Office of the Provost, Office of the Senior Vice President, April 3, 2001.

12.0 Associated EH&S Documents:

12.1

13.0 Attachments

14.0 Document Revision History:

Revision	Section(s) Changed	Change(s) Made:	Date
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