

1.0 Purpose and Applicability

- 1.1 It is the policy of the University of Pennsylvania in coordination with the Office of Environmental Health and Radiation Safety to provide the Penn community with a safe and healthful environment. This policy informs Penn employees of the appropriate procedures to follow to prevent building occupants, visitors, maintenance personnel and contractors from exposure to hazardous amounts of lead.
- 1.2 This policy applies to all University employees and students involved with, or affected by, activities resulting in the disturbance of lead-containing materials.

2.0 Definitions

- 2.1 **Construction Work** - Work for construction, alteration, and/or repair, including painting and decorating. Construction work includes but is not limited to demolition or salvage of structures containing lead, removal or encapsulation of materials containing lead, new construction, alteration, repair or renovation of structures containing lead and maintenance operations associated with these construction activities.
- 2.2 **Dormitory Apartment** - An apartment, located within a dormitory building, occupied by students with children or employees residing with their partners and/or children.
- 2.3 **Engineering Controls** - Engineering controls protect workers by removing hazardous conditions or by placing a barrier between the worker and the hazard. An example would be use of local exhaust ventilation to capture and remove airborne emissions.
- 2.4 **Lead-Based Paint** - Paint or other surface coatings that contain lead exceeding 0.7mg/cm². Lead-Based Paint is defined only for target housing and with respect to exposures to children aged 6 and below where the primary exposure route is through ingestion. *Lead-Based Paint is not defined for construction/renovation activities performed by adults, where the primary exposure route is through inhalation. An exposure assessment and air sampling must be completed to characterize adult exposures.*
- 2.5 **Lead-Based Paint Abatement** - A set of measures designed to eliminate or reduce lead-based paint hazards in accordance with standards established by the Environmental Protection Agency (EPA). The term *does not include renovation and remodeling activities* by contractors whose primary intent is not to permanently eliminate or reduce lead-

based paint hazards, but is instead to repair, restore or remodel a given structure or dwelling.

- 2.6 **Lead Paint Activities** - With respect to target housing, the term includes risk assessment, inspection, and abatement. With respect to a public building-identification of lead-based paint and materials containing lead-based paint, deleading and removal or lead activities where the specific purpose of the work is to abate lead-based paint or lead-based paint hazards.
- 2.7 **Lead-Based Paint Hazard** - A condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, or lead-contaminated paint that is deteriorated or present in accessible surfaces, friction surfaces or impact surfaces that would result in adverse human health effects.
- 2.8 **Lead Free Certification** - A certification provided by an accredited, Pennsylvania Lead Risk Assessor or EPA-accredited Lead Dust Sampling Technician to a lessee with children aged six and under, that the property is free of lead-based paint.
- 2.9 **Lead Safe Certification** - A certification provided by an accredited, Pennsylvania Lead Risk Assessor or EPA-accredited Lead Dust Sampling Technician to a lessee with children aged six and under, that the property is free of lead-based paint *hazards*.
- 2.10 **Lead Hazard Evaluation** - A quantitative determination of employee exposure to lead. Includes full shift personal air samples that are representative of the monitored employee's regular, daily exposure to lead.
- 2.11 **Lead Hot Work** - Burning, cutting or torch burning of materials that have lead-containing coatings or paint.
- 2.12 **OSHA Action Level (AL) for Lead** - A time-weighted average lead exposure of 30 ug/m³ as averaged over the course of an eight-hour workday.
- 2.13 **OSHA Permissible Exposure Limit (PEL) for Lead** - A time-weighted average lead exposure of 50 ug/m³ as measured over the course of an eight-hour workday.
- 2.14 **Public Building** - A building constructed prior to 1978 which is generally open to the public or occupied or visited by children.

- 2.15 **Target Housing** - Housing constructed prior to 1978. Any dwelling, such as a dormitory, in which the living area is not separated from the sleeping area is classified as a zero-bedroom dwelling and is *not* considered target housing.

3.0 Roles and Responsibilities

- 3.1 The ***Office of Environmental Health and Radiation Safety (EHRS)*** is responsible for:
- 3.1.1 Maintaining the University's Lead Management Program.
 - 3.1.2 Performing or coordinating lead hazard evaluations for at-risk employees.
 - 3.1.3 Coordinating lead-based paint surveys of dormitory apartments, target housing and facilities occupied by children.
 - 3.1.4 Lead-based paint abatement project management.
 - 3.1.5 Consultation to ensure occupant/Penn community safety during construction projects involving demolition, paint removal and/or surface preparation of painted surfaces.
 - 3.1.6 Waste characterization and coordination of disposal.
- 3.2 The ***University of Pennsylvania Office of College Houses and Academic Services*** is responsible for:
- 3.2.1 Providing notification to the Residential Services Office of any apartments in the College Houses that will be occupied by tenants with children aged six and under. Notification should be made by email to the following personnel:
 - The Senior Associate Director for Building Operations
 - Assistant Director for Projects and Quality Assurance
 - Associate Director for Building OperationsNotification should be made at least one-month in advance of occupancy to allow time for coordination of the required lead paint assessment and for completion of any required mitigation measures during the turnover process prior to occupancy.
- 3.3 The ***University of Pennsylvania Residential Services Office*** is responsible for:
- 3.3.1 Disclosure to lessees of dormitory apartments or target housing with children aged six and under, of all lead-based paint data for the unit to be occupied.
 - 3.3.2 Providing lessees of dormitory apartments or target housing with children aged six and under, with either a certification of "[Lead Free](#)" or "[Lead Safe](#)" status.

- 3.3.3 Providing the City of Philadelphia Department of Public Health with a copy of the *Lead Free or Lead Safe* certification along with supporting sample results. The submittal instructions are on the forms.
- 3.3.4 Providing lessees of dormitory apartments or target housing with children aged six and under, with a copy of "[Philadelphia Lead Law Tenant Advisory](#)".
- 3.3.5 Providing lessees of dormitory apartments or target housing with children aged six and under, with an EPA pamphlet entitled "[Protect Your Family from Lead in Your Home](#)".
- 3.3.6 Providing lessees with the City of Philadelphia's "[Partners for Good Housing](#)" brochure.
- 3.3.7 Obtaining and maintaining all lessee lead disclosure forms.
- 3.4 **Project Managers or Facility Managers** overseeing construction or lead hot work are responsible for:
 - 3.4.1 Notifying EHRS of any construction or maintenance projects within target housing or child-occupied facilities that may involve disturbance of painted surfaces.
 - 3.4.2 Notifying EHRS of paint surface preparation and removal projects or other dust/fume generating construction or maintenance projects that could be reasonably anticipated to create dust/fumes that could impact occupied areas in any campus location.
- 3.5 **Supervisors** of employees performing construction or lead hot work are responsible for:
 - 3.5.1 Requesting lead hazard evaluations for employees.
 - 3.5.2 Notifying EHRS of unusual conditions or changes in work practices that would make initial lead hazard evaluations non-representative of actual lead exposure.
 - 3.5.3 Scheduling and ensuring employee attendance at EHRS safety training.
 - 3.5.4 Enrolling employees exposed to lead above the OSHA action level into a medical surveillance program with HUP Occupational Medicine.
 - 3.5.5 Enrolling employees exposed to lead above the OSHA action level into a respiratory protection program, including medical clearance and EHRS respiratory protection program training and respirator fit testing.
- 3.6 **Employees** who perform construction work are responsible for:
 - 3.6.1 Participating in EHRS safety training.
 - 3.6.2 Participating in medical surveillance program if required.

- 3.6.3 Following proper procedures to prevent disturbance of lead-containing materials while performing assigned tasks.
 - 3.6.4 Using engineering and administrative controls and if applicable, wearing assigned personal protective equipment designed to minimize lead exposure.
 - 3.6.5 Notifying supervisors of unusual conditions or changes in work practices that would make initial lead hazard assessments un-representative of actual lead exposures.
- 3.7 The ***Hospital of the University of Pennsylvania (HUP) Department of Occupational Medicine (OM)*** is responsible for:
- 3.7.1 Implementing the medical surveillance program.

4.0 Procedures

- 4.1 **Written Lead Management Program**
The Lead Management Program presents procedures designed to protect the Penn community from exposure to lead within Penn's facilities.
- 4.2 **Determination of Employee Lead Exposure**
Upon request, EHRS shall perform lead hazard assessments for construction or lead hot work tasks that have the potential to expose employees to concentrations of lead above the OSHA action level of 30 ug/m³ as an eight-hour time-weighted average. The following tasks would typically require completion of a lead hazard assessment:
- Manual demolition of painted structures
 - Manual paint scraping and sanding.
 - Paint removal using a heat gun.
 - Welding or torch cutting of painted materials.
 - Abrasive blasting or grinding of painted materials.
 - Power tool cleaning with dust collection systems
- The assessments shall include air monitoring and observation of work practices and engineering controls typically used for each task. EHRS shall provide the employee and supervisor with a written copy of the sampling results and findings/recommendations within five working days of the assessment. The report shall describe any required changes in work practices or engineering controls based upon EHRS observation of the task to reduce the lead exposure and notify the employee of the frequency of follow-up sampling if applicable.

4.3 Paint Sampling

- 4.3.1 A Commonwealth of Pennsylvania-accredited Lead Inspector or Risk Assessor shall perform all sampling associated with lead paint activities.
- 4.3.2 As a matter of prudent practice, EHRS may perform testing of painted surfaces, by request, for demolition and renovation projects. Paint sampling is typically not completed to define safe work practices. **With respect to construction related activities, there is no definition of lead-based paint and no safe threshold concentration of lead in paint.** Work practices, engineering controls and personal protective equipment selection must be defined by task-specific air sampling, not strictly based upon the lead content of the paint. Low lead concentrations in paint can result in high exposures if the task is performed in a way that liberates the lead dust making it more easily inhaled.
- 4.3.3 EHRS shall coordinate testing of any painted surfaces to be disturbed within dormitory apartments, target housing and child-occupied facilities. Testing of painted surfaces will be performed by portable X-Ray Fluorescence (XRF) and/or by lab analysis of bulk paint chip samples by an AIHA-accredited laboratory. Following paint testing, EHRS shall provide a written report summarizing the results.
- 4.3.4 EHRS will submit samples of suspected lead-containing waste materials to an accredited laboratory for analysis following EPA Toxicity Characteristic Leaching Procedure (TCLP) in order to determine proper disposal requirements.

4.4 Project Oversight

- 4.4.1 EHRS requires that EPA/Commonwealth of Pennsylvania-accredited lead paint contractors and personnel are used for *lead paint activities* within target housing and public buildings.
- 4.4.2 EHRS requires that contractors accredited under EPA 40 CFR 745 ([EPA Renovation, Repair, and Painting Rule](#)) are used for construction or maintenance activities that disturb painted surfaces in target housing and child-occupied facilities.
- 4.4.3 EHRS recommends the use of contractors and personnel that have EPA-accredited lead training (Lead-Safe Certified Firm) for unregulated construction projects involving large-scale surface preparation, disturbance or removal of paint.
- 4.4.4 EHRS shall provide occupants of dormitory apartments and target housing with EPA pamphlet entitled "[Protect Your Family from Lead in Your Home](#)" prior to renovations or maintenance activities that disturb more than two square feet of lead-based paint. EHRS shall coordinate inspections and air and clearance wipe sampling as required to assure the safety of building occupants.

4.5 **Construction & Renovation Projects**

Construction Project Managers shall implement the following procedures for projects involving demolition, paint surface preparation and removal or other dust generating construction or maintenance projects where dust or fumes could be reasonably anticipated to impact occupied areas.

- 4.5.1 Ensure contractors comply with Penn's Construction Services Agreement that requires compliance with all applicable regulatory standards, including those related to lead. This includes the OSHA lead standards 1926.62 (construction) & 1910.1025 (general industry) and the EPA Renovation, Repair, and Painting Rule-40 CFR 745 subpart L, pertaining to work in target housing and child-occupied facilities.
- 4.5.2 Require the contractor to submit a written Lead Compliance Plan that defines the methods & procedures to be implemented in order to safely perform the project and control emissions.
- 4.5.3 Submit the Lead Compliance Plan to EHRS for review. The intent of the review is to help ensure that the contractor will take adequate measures to protect the Penn community. For example, if the contractor is protecting its workers using personal protective equipment including respirators, EHRS will require that adequate measures, including isolation of ventilation systems and the work area, shall be taken to protect the surrounding Penn community.
- 4.5.4 Depending on the removal methodology, EHRS may perform or coordinate air sampling and inspections in nearby occupied areas to assure the safety of the Penn community in the proximity of the project. A visual inspection may be warranted at the completion of the project to confirm that the work area has been properly cleaned.
- 4.5.5 On projects where paints/finishes are being removed from substrate materials, EHRS must be contacted to have the paint analyzed in order to characterize it for proper disposal. If the paint is characterized as regulated waste, EHRS will provide or help with acquisition of disposal containers and coordinate disposal.

4.6 **Waste Disposal**

EHRS shall perform waste stream characterization of suspected lead-containing waste materials by laboratory analysis following EPA Toxicity Characteristic Leaching Procedure (TCLP). EHRS shall coordinate waste disposal of lead-containing materials.

4.7 **Recordkeeping**

- 4.7.1 EHRS maintains all documents relating to lead exposure including hazard assessments, sampling data, waste disposal manifests and all correspondence.
- 4.7.2 Supervisors maintain lead hazard exposure assessments of the employees they supervise.
- 4.7.3 Occupational Medicine maintains all medical records.
- 4.7.4 The Penn Residential Services Office maintains all dormitory apartment lessee lead paint disclosure and certification forms.
- 4.7.5 All records are kept indefinitely.

5.0 **References and Resources**

- [OSHA Lead in Construction Standard](#)
- [EPA Lead Programs](#)
- [City of Philadelphia – Lead and Healthy Homes Program](#)