Virginia Tech

LEAD HAZARD CONTROL PROGRAM

Supervisor’s Manual

Prepared by
Environmental Health and Safety Services
Occupational Safety Programs
Glossary

Abatement or Deleading
Many renovation and maintenance operations will involve the removal or incidental disturbance of lead containing paint (LCP) or other lead materials. These small scale projects are not considered to be "abatement" or a deleading operation by current state regulations. A deleading project is one whose primary intent is to permanently eliminate, or abate, a lead based paint hazard, and does not include normal repair, repainting, remodeling or similar work.

Control Measure
A measure used to control the employee exposure to a lead dust or fume hazard. Control measures include the use of personal protective equipment such as respirators, local exhaust ventilation, use of wet methods during sanding or scraping LCP, and so forth.

Encapsulation
The application of a sealant over the surface of the LCP to prevent migration of lead to the surface. Encapsulation is not generally recommended by EHSS as a method for control of LCP hazards.

EPA
The United States Environmental Protection Agency

HEPA
High Efficiency Particulate Air (HEPA). HEPA filtered equipment must be capable of trapping and retaining 99.97% of all particles larger than 0.3 microns.

OSHA
Occupational Safety and Health Administration. OSHA regulations are administered in Virginia by the Department of Labor and Industry (DLI).

Permissible Exposure Limit (PEL)
The highest allowable level of exposure to airborne lead that an employee may have, without using respiratory protection, as stated by the Occupational Safety and Health Administration (OSHA).

Personal Protective Equipment
Any material or device worn to protect a worker from exposure to, or contact with, any harmful material or force. PPE should be used only if engineering or administrative controls are insufficient to protect against a hazard.

Regulated Area
An area established by the employer to demarcate areas where airborne lead concentrations exceed, or can reasonably be expected to exceed, the permissible exposure limit.

Renovation
Altering, in any way, one or more facility components.

Respiratory Protection
A device worn to either purify the air, or that provides clean air from another source to the wearer. All respirator users must be enrolled in Virginia Tech's Medical Surveillance Program, and must have received appropriate training. These services may be arranged by contacting EHSS directly at 1-3080.

Lead Project Supervisor
A person with the training and experience required by the Department of Professional and Occupational Regulations (DPOR) for licensing as a Lead Supervisor, and who meets the qualifications of "competent person" as established by OSHA. A lead project supervisor must be present on all lead abatement projects.

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1.0 Introduction to the Lead Hazard Control Program

The principal objective of the Lead Hazard Control Program is to minimize the exposure of building occupants and maintenance, renovation and custodial personnel to lead by:

1. The survey, inventory and periodic assessment of suspect and known lead containing paints (LCP) and similar building materials containing lead. The purpose of the assessment is to monitor the condition of LCP to ensure that these materials are maintained in an undamaged (non-hazardous) condition.

2. Ensuring that lead dust generated by deteriorating LCP is properly cleaned-up using approved procedures.

3. Training individuals who may encounter LCP or other lead materials during their normal work activities.

4. Developing standard work practices and procedures that will allow renovation, construction or maintenance to be performed safely without exposing employees, building occupants, or members of the public to airborne or surface lead dust hazards. These procedures include the Work Order Permit Review System, which is explained in detail in Section 3.0 of this document, and Standard Work Practices and Procedures (SWP's), which are outlined in Section 4.0.

This program has been designed to comply with applicable state and federal regulations pertaining to lead.

Background information on the health effects associated with exposure to lead is available through Environmental Health and Safety Services (EHSS). Interested persons may request this information by contacting EHSS at 231-5985.

1.1 Who Should Participate

The Lead Hazard Control Program is administered by the Occupational Safety Division of EHSS. EHSS personnel coordinate sampling of suspect lead containing materials, maintain related building records, monitor LCP removal operations not associated with capital projects, periodically assess suspect and known LCP, and review proposed work to be conducted by Physical Plant, CNS, Residential Housing and other departments.

Other key university participants include:

- Building maintenance and supervisory personnel
- Custodial staff and supervisory personnel
- Personnel involved in building renovations or demolition
- Capital Design and Construction personnel, including Leased Property Management
- Safety coordinators at remote research stations.

2.0 Program Elements

2.1 Education and Training

2.1.1 Custodial and Maintenance Training
Maintenance and custodial staff who do not use, remove or disturb LCP or other lead materials will receive awareness-level training on an annual basis. Training will include:

1. Health effects of lead exposure and the work practices used to minimize personal exposure
2. Procedures for cleaning or removing small areas of deteriorated LCP that may be encountered in some building areas.
3. Purpose of this program and the requirements of the OSHA lead regulations.
4. Signs that may be encountered on lead projects, and precautions that will be used to protect employees and the general public from exposure to lead.

2.1.2 **Worker Training: Maintenance or Renovation Operations**

Employees who perform duties that involve the removal or disturbance of LCP, that are required to work in environments contaminated with lead dust, or that use lead in the course of their work must be trained on:

1. The requirements of the OSHA lead standard for construction.
2. The specific operations that could result in an exposure to lead above the action level, and the work practices and procedures that they are to follow to limit their exposure to lead.
3. The purpose and description of the university's medical surveillance program and medical removal protection program.
4. Health effects of lead exposure and the work practices used to minimize personal exposure.
5. The contents of this lead compliance program.

Employees that need to use respiratory protection during the course of their work, or that perform work where exposures above the action level have been documented, must participate in the university’s medical surveillance and respiratory protection programs. Information on these programs may be obtained from EHSS or downloaded from [www.ehss.vt.edu](http://www.ehss.vt.edu).

Persons performing deleading or lead abatement operations must meet the training requirements for Lead Supervisor or Lead Worker as established by the Virginia Department of Professional and Occupational Regulations (DPOR). Details on these requirements and the work practices that must be followed may be obtained by contacting EHSS.

2.1.3 **Lead Inspector/ Risk Assessor, Lead Supervisor, Lead Project Designer**

Personnel that sample suspect LCP, conduct lead-related building inspections, perform clearance sampling after lead abatement, and that perform hazard assessments must meet the minimum qualifications for Lead Inspector/Risk Assessor as established by DPOR.

Personnel that develop response actions, or that make recommendations for removal procedures, must meet the minimum qualifications for Lead Project Designer as established by DPOR.

2.2 **Occupant Awareness**

2.2.1 **Building Occupant Awareness**

A. Information on the location of lead materials in university buildings and the precautions that will be followed to prevent employee exposure can be obtained from EHSS.

B. Prior to the start of lead abatement or deleading projects, information will be provided to building occupants that will explain the work that is to be performed and the measures that are being employed to protect them. This information will be made available either at group meetings, by letter, the use of media resources, or a combination of the above.

2.2.2 **Work Order Review System**
Renovation and maintenance activities that may disturb LCP or suspect LCP must be reviewed either by EHSS, authorized departmental representative or a licensed lead consultant to identify the location of lead-containing materials. The results of this inspection will be incorporated into either the project documents or the project work order.

2.2.3 Contractor Awareness Program

Contractors will be informed by the Virginia Tech project coordinator/manager of the location of suspect and known lead-containing materials in the work area(s) to which the Contractor is assigned. The Contractor shall provide all training and equipment required by 29 CFR 1926.62 and other applicable local, state and federal regulations for the safe performance of the work. The Contractor shall under no circumstances perform de-leading or lead abatement unless they hold a valid Virginia Lead contractor license and have been specifically retained to perform this work as a part of the contract. The Contractor shall submit to EHSS for review and approval his written work practices, precautions, procedures, and engineering controls to be used during work that disturbs lead prior to commencement of this work. Work will not proceed until the proposed work practices have been approved by EHSS.

2.3 Exposure Monitoring

2.3.1 Personal Air Samples for University Personnel

EHSS will monitor and secure personal air samples for all lead related work performed by university personnel. These air samples will be used to validate that the work practices and procedures employed do not expose employees above the action level, or if exposures above the action level are identified, that appropriate respiratory protection is being used. The cost for the analysis of these samples are the responsibility of the department conducting the work. Historic sampling data may be used in lieu of monitoring, at the discretion of EHSS, where previous samples were taken during a project involving similar material types and environmental conditions and no exposures above the action level were identified. Departments that are planning to perform lead-related work must coordinate air monitoring and personal air sampling with EHSS.

A copy of personal air sampling results will be submitted to the employee for which the samples were taken within 5 days of receipt from the laboratory.

2.3.2 Personal Air Sampling for Non-university Personnel

Lead abatement, maintenance and renovation-related contractors are responsible for securing air samples for their own personnel as needed to meet the requirements of 29 CFR 1926.62. A copy of all air monitoring performed on Virginia Tech properties must be provided to EHSS within 5 days of receipt from the laboratory.

2.3.3 Air Sampling during Lead Abatement and De-leading Projects

A. General

EHSS or an authorized project monitoring consultant will secure, as deemed necessary, baseline (e.g. background) air, soil, and/or surface dust samples as appropriate before the start of the project, and will secure air and dust samples during the course of the work area during the project. The project monitor will, in addition, perform a final visual inspection and will secure final clearance surface dust samples in accordance with Commonwealth of Virginia requirements prior to removal of the work area enclosures.

The cost for analysis of air samples associated with lead projects are the responsibility of the department initiating the work.
B. Non-capital Projects

EHSS will provide project monitoring services for non-capital projects if EHSS personnel are available and the scope of the removal/repair project is sufficiently small. Larger lead projects may require the services of an independent project monitoring consultant.

C. Capital Projects

Capital Design and Construction will assure that a licensed Lead Inspector/Risk Assessor is available to inspect and monitor all lead abatement or de-leading operations on capital projects. The duties and function of this individual shall conform to the requirements established by Virginia DPOR. The project monitor shall be on-site during all lead-related work activities.

2.4 Recordkeeping

All records mentioned in this program will be retained as required by the regulations and as necessary to maintain an effective program. These records include:

- The written program itself, including all revisions, changes and modifications.
- Building plans and drawings, with identified homogenous areas and sample locations clearly delineated.
- Building plans and drawings, with areas of known LCP clearly identified.
- Building sampling and survey records, and records of all reinspections.
- All lead project records including, as appropriate, survey records, project design or abatement specifications, air/surface dust sampling data, daily project monitor logs, sign-in logs, waste disposal manifests, and invoices. The building area affected and material removed shall be clearly identified on the building drawings.
- Attendance records at all awareness and training programs.
- Medical surveillance records will be maintained by the Occupational Health and Industrial Hygiene Division of EHSS as required by the OSHA regulations.
- Personal air sampling data.
- Correspondence.
- A copy of current state and federal regulations.
3.0 Work Order Permit Review System

3.1 Purpose

The purpose of the work order review system is to allow EHSS an opportunity to review all proposed renovation, maintenance or repair work that is to be completed internally by staff and/or outside contractors to insure that either LCP will not be disturbed by the work or that suitable precautions will be taken if the work has the potential to disturb LCP.

A suggested work order review form is included in the appendices. Departments may prepare their own form for internal use and recordkeeping if the form used contains all pertinent information contained on the sample form.

4.0 Standard Work Practices and Procedures

4.1 Introduction

Standard work practices and procedures (SWP) provide specific guidelines for certain lead-related work activities. Adherence to SWP will minimize the production of airborne lead, minimize creation of surface lead dust hazards, and will protect the worker and building occupants.

Lead removal projects may be performed by in-house personnel without notification to the Virginia Department of Labor and Industry (DLI) if the primary intent of the project is not to permanently eliminate a lead based paint hazard (e.g., if the lead removal is incidental to the primary purpose of the project).

Lead removal projects where the primary intent is de-leading require notification to DLI. A copy of these requirements may be obtained by contacting EHSS at 231-5985.

4.2 Personal and Work Area Air Monitoring

Personal air monitoring will be used to evaluate the effectiveness of the work practices, to document exposure conditions, and to provide justification for the personal protective equipment used.

Personal air samples will be secured for each type of SWP until there is sufficient historic data available to meet the OSHA requirements. Once historic data is available, it will no longer be necessary to secure air samples except:

- Work area environmental and/or personal air or dust samples will always be taken if the work area will be reoccupied after project completion, or if university personnel are present immediately outside of the work area.
- Final clearance samples will always be secured for any deleading project, or any project which grossly disturbs LCP.
- Personal air samples will be secured on a periodic basis by EHSS to provide continuing documentation that the personal protective equipment required by the SWP conforms to the OSHA requirements.

4.3 Providing Notice to EHSS

It is essential that EHSS be provided with timely notice prior to any lead project; this will allow EHSS to schedule our personnel and ensure that a laboratory is available to analyze the air samples within the time frame required.

4.4 Equipment
All equipment used for lead-related work must be appropriate for its intended use. In general, some or all of the following materials and/or equipment may be required for lead-related work:

**Respirators:** Respirator selection, use and maintenance shall conform to the requirements of the university's Respiratory Protection Program.

**11”x17” Danger Signs:** Danger signs shall be posted at each entrance to a lead regulated area. Signs shall conform to OSHA 1926.62.

**Barrier Tape:** Barrier tape specific to lead-related work shall be used to demarcate a regulated area when the work area is not isolated by physical boundaries (e.g., walls with lockable doors).

**Six mil polyethylene sheeting:** Poly is used to construct critical barriers, to protect finishes, and to contain the release of lead dust from the work area. The poly is generally attached using spray glue and duct tape.

**HEPA-Filtered Vacuum:** Such vacuums, designed to be used with a HEPA filter, are available in various sizes and capacities, and can be used with attachments on drills, saws and other tools.

**Portable Shower:** Portable showers may be required for personnel decontamination on larger scale lead-projects. In all cases during lead work, suitable provisions shall be made available for personnel decontamination; these include, but may not be limited to: HEPA vacuums, and access to hand washing facilities.

**Disposable Coveralls:** Disposable, impervious coveralls, equipped with head and foot covers, that are used on lead projects to prevent gross contamination from contacting the worker.

### 4.5 Development of SWP's

The departments will, with the assistance of EHSS, develop SWP's specific to the lead-related work that they perform. Copies of these SWP's must be maintained with the departmental copy of this program and provided to supervisors and employees who conduct work covered by the SWP.

Ensuring compliance with the SWP is the responsibility of the individual employee, the employees' supervisor, and the department. Deficiencies noted during field inspections and audits conducted by EHSS will be brought to the attention of the employee, supervisor or department as appropriate.