Chapter 16

Lead

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1 Overview

Prior to 1978, lead was added to paint and coatings applied to equipment, vehicles, furniture, steel structures and building surfaces to speed up drying, increase durability, maintain a new appearance and prevent corrosion. Chronic and excessively high exposure to lead has been recognized as a health hazard and can cause damage to the brain and central nervous system. In 1978 the United States Consumer Product Safety Commission placed lead content limits on paints used for toys, residences and most furniture. Although lead-based paint is no longer used in residential and public buildings, it may still be found in buildings built before 1978 (pre 1978 buildings).

Lead-based paint was used in the construction and maintenance of University buildings built before 1978 and the removal and/or disturbance of lead-based paint in pre 1978 buildings is strictly controlled. This chapter describes how the University manages lead-based paint hazards and the potential for occupational exposure to lead during maintenance and construction activities.

1.1 Hazards/Impacts

When lead-based paint is disturbed, paint chips and particulate matter (lead-containing dust) may become airborne. Lead-based paint chips may also be released from deteriorating or damaged painted surfaces. Inhalation or ingestion of lead-based paint chips and/or particulate matter has been associated with a decrease in learning ability, hearing, coordination, formation of blood cells and damage to the kidneys, digestive and reproductive systems.

2 Scope

This chapter applies to University employees performing maintenance or construction activities in pre 1978 buildings.

This chapter applies to pre 1978 University buildings at the San Francisco Campus and Romberg-Tiburon Center.

This chapter applies to contractors providing maintenance and/or construction services that may involve the disturbance, stabilization or abatement of lead-based paint.

2.1 Exemptions

Paint and finishes that contain less than one milligram per square centimeter (1.0 mg/cm2) or less than 0.5% by weight of lead are not considered lead-based paint.

2.2 Emergencies

The disturbance of paint or coatings in pre 1978 University buildings may present a health hazard to students, faculty and staff. Unauthorized disturbance of paint or coatings by contractors or staff must be...
reported immediately to supervisors, managers and/or administrators. Administrator must notify Campus Environmental, Health and Safety of any accidental occupational exposures to lead-based paint or unintentional release of lead-based paint into the environment.

3 Standards

The following standards have been adopted for the management of lead-based paint:

Title 24; Code of Federal Regulations (CFR)
- Part 35 - Subpart A - “HUD Lead Disclosure Rules” (24 CFR 35)\(^1\)

Title 29; Code of Federal Regulations (CFR)
- Part 1926 - “Construction Standard for Lead” (29 CFR 1926)\(^2\)

Title 40; Code of Federal Regulations (CFR)
- Part 745 - Subpart F - “Identification of Dangerous Levels of Lead” (40 CFR 745)\(^4\)
- Part 257 and 258 - “Disposal of Lead-based Paint Waste” (40 CFR 257 and 258)\(^5\)

Title 8; California Code of Regulations (CCR)
- Part 5216 - “General Industry Standard for Lead” (8 CCR 5216)\(^6\)
- Part 1532 - “Construction Standard for Lead: (8 CCR 1532)\(^7\)

California Health and Safety Code\(^8\)
- Part 17920.10 - 17961 - “California State Housing Law”
- Part 105251 - 105256 - “Residential Lead-based Paint Hazard Reduction"

\(^1\) [http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title24/24cfr35_main_02.tpl]
\(^2\) [https://www.osha.gov/pls/oshaweb/owadisp.display_standard_group?p_toc_level=1&p_part_number=1926]
\(^3\) [https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10030]
\(^5\) [http://cfr.regstoday.com/40cfr257.aspx]
\(^6\) [http://www.dir.ca.gov/title8/5216.html]
\(^7\) [http://www.dir.ca.gov/title8/1532_1.html]
\(^8\) [http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=hsc]
4 Definitions

**Abatement:** any set of measures designed to reduce or eliminate lead hazards associated with lead-based paint in public and residential buildings, not including containment or cleaning.

**Lead-based paint:** paint or other surface coatings that contain lead equal to or greater than one milligram per square centimeter (1.0 mg/cm²) or 0.5 percent by weight (equivalent units are: 5,000 μg/g, 5,000 mg/kg, or 5,000 ppm by weight). Surface coatings include paint, shellac and varnish.

**Stabilization:** repairing any physical defect in a painted surface that is causing paint deterioration, removing loose paint and other material from the surface to be treated and applying a new protective coating or paint.

**Construction:** non-routine work involving the improvement or alteration of a building.

5 Requirements

5.1 General

University employees may not perform any activity that results in lead exposure above the OSHA Permissible Exposure Limit (PEL) of 50 μg/m³ for airborne lead.

University employees will follow safe work practices when stabilizing paint in pre 1978 buildings.

University employees may not disturb, stabilize or abate an area of more than twenty (20) square feet of paint or coatings in pre 1978 academic buildings during an 8-hour shift.

University employees may not disturb, stabilize or abate lead-based paint in surveyed areas of University Property North and University Property South where lead-based paint has been identified.

Licensed contractors will perform construction activities involving the disturbance of lead-based paint.

University residents may not intentionally disturb or apply paint or coatings in licensed space.

Supervisors, Managers and Administrators will ensure employees are aware of and comply with the requirements of this chapter.
5.1.1 Lead-based Paint Identification

5.1.1.1 Academic pre 1978 buildings listed in “Exhibit 1” are presumed to contain lead-based paint.

5.1.1.2 Mary Ward Hall, Mary Park Hall and residential buildings in University Park North and University Park South have been surveyed to identify interior and exterior areas that contain lead-based paint. Areas listed in “Exhibit 2” are known to contain lead-based paint.

5.1.2 Exposure Assessment

5.1.2.1 The National Institute of Health (NIOSH) study at the University of Maryland, *HETA 94-0374-2534* included in “Section 7, References” has established that performing janitorial and maintenance tasks (sweeping, vacuuming, emptying trash receptacles, cleaning fixtures, painting, plastering and other related activities) in academic pre 1978 buildings does not present an opportunity to exceed the Cal/OSHA PEL of 50 g/m3 for an 8-hour TWA for lead. While this study demonstrates that University employees can safely perform janitorial and maintenance activities in academic pre 1978 buildings containing lead-based paint, employees may not disturb an area of more than twenty (20) square feet of paint or coatings until testing using a rapid test for lead confirms the paint or coating is not lead-based. Safe work practices must be followed when disturbing any paint or coatings in academic pre 1978 buildings. These practices will help ensure students, faculty and staff are protected from the hazards associated with lead-based paint.

5.1.2.2 To ensure the safety of University residents and ensure University Property Management (UPM) employees are not exposed to lead above the Cal/OSHA PEL while performing routine painting and maintenance activities in Mary Ward and Mary Park Hall, University Park North and University Park South, an exposure assessment was performed by an independent, certified industrial hygienist (“Exhibit 3”). The exposure assessment was performed using industry standard protocols and confirms that paint and coating stabilization can be performed safely in areas not identified as containing lead-based paint by following safe work practices.

5.1.3 Maintenance

5.1.3.1 In pre 1978 **academic buildings**, paint and coating stabilization in an area less than twenty (20) square feet may be performed by employees using safe work practices. (See “Procedures” 5.2.1). In areas where twenty (20) square feet or more of paint or coatings will be disturbed, a rapid test for lead must be performed to confirm paint or coatings are not lead-based. Licensed contractors will perform stabilization of lead-based paint and coatings.

5.1.3.2 In pre 1978 **residential buildings**, paint and coating stabilization in areas not listed in “Exhibit 2” may be performed by employees using safe work practices (See “Procedures” 5.2.1). Licensed contractors will perform stabilization of paint and coatings in areas known to contain lead-based paint.

5.1.4 Construction

5.1.4.1 Construction activities involving the disturbance of lead-based paint or coatings will be performed by licensed contractors in accordance with Capital Planning, Design and Construction permitting requirements. Contractors will possess a current state contracting license, a US Department of Transportation permit to transport hazardous waste and workers will possess all required lead
certifications. Paint and coating stabilization and abatement will be performed in accordance with federal, state and local regulations and conform to industry standards.

5.2 Procedures

5.2.1 Safe Work Practices

Safe Work Practices for Maintaining Paint and Coatings in Pre 1978 Buildings, “Exhibit 4”, has been developed to reduce the potential for exposure to lead during maintenance activities. Employees performing maintenance activities that involve the disturbance of paint or coatings must use safe work practices when performing these tasks.

5.2.2 Stabilization and Abatement Project Oversight

Campus Environmental, Health and Safety will be notified prior to performing construction projects involving the stabilization or abatement of lead-based paint or coatings. The designated Project Manager will present project scope documents upon request and ensure contractor licenses and certifications are verified prior to awarding contracts. Uniform Hazardous Waste Manifests used for the disposal of lead-based paint debris must be reviewed and signed by Campus Environmental, Health and Safety.

5.2.3 Clearance Sampling

For indoor construction projects involving the disturbance of lead-based paint or coatings, lead clearance sampling will be performed by a licensed industrial hygiene consultant. Areas that do not meet the US Department of Housing and Urban Development (HUD) Lead Clearance Standard for floors (100 mg/ft2) and wipe sampling (25 mg/ft2) will be re-cleaned until clearance is achieved.

5.2.4 Paint Chip and Debris Disposal

5.2.4.1 Lead-based paint chips and debris generated by contractors during paint stabilization activities will be collected and transported by a licensed hazardous waste hauler to a permitted treatment and disposal facility using the Uniform Hazardous Waste Manifest. Hazardous waste manifests must be reviewed and signed by Campus Environmental, Health and Safety personnel before the hazardous waste is transported off site.

5.2.5 Notifications

5.2.5.1 Contractors

Project managers will notify contractors providing maintenance and/or construction services of the potential presence of lead-based paint in pre 1978 University buildings. Notification will be in writing (see “Exhibit 5” Contractor Lead Notification Form) and maintained on file for not less than seven (7) years.

5.2.5.2 Residents
University Property Management (UPM) will distribute the EPA information pamphlet on identifying and controlling lead-based paint hazards and the “Housing Addendum 3 Lead Disclosure” (see “Exhibit 6 & 7”) with the executed Licensing Agreement provided to residents prior to occupancy. UPM will notify residents in writing prior to performing work that involves the disturbance of lead-based paint.

5.3 Training

- **Lead-based Paint Awareness**: provided initially upon hire to employees performing maintenance activities that may involve the disturbance or stabilization of paint in pre 1978 buildings.

- **Lead-based Paint Management**: provided initially upon hire to managers and administrators contracting or supervising projects that may involve the disturbance, stabilization or abatement of paint or coatings in pre 1978 buildings.

6 Exhibits

Exhibit 1 – “Academic Buildings Constructed Prior to 1978”
Exhibit 2 – “Residential Buildings Containing Lead-based Paint or Coatings”
Exhibit 3 – “PSI Exposure Assessment, UPM 2013”
Exhibit 5 – “Contractor Lead Notification Form”
Exhibit 6 – “Protect Your Family From Lead In Your Home”
Exhibit 7 – “Housing Addendum 3 Lead Disclosure”

7 References

NIOSH - Exposure Assessment, HETA 94–0374–2534, University of Maryland