

02 83 00 – Lead Remediation

1. General

- A. Lead was a major ingredient in many types of paint up until the late 1940s. In the early 1950s, other pigment materials became more popular; however lead compounds were still used in some pigments and as drying agents. Federal regulations lowered permissible dry film content to 0.5 percent in 1973 and again in 1978 to 0.06 percent. Because of the potential for widespread use at Duke, we must expect that any building constructed earlier than 1980 will contain lead-bearing paints.
- B. The purpose of this document describes appropriate methods for managing lead hazards associated with renovation or demolition projects. It is intended to be used by those involved with the planning processes as well as those responsible for supervision during the construction phase. It can be expected that, because of the increasing regulatory activity in this area, these guidelines may require frequent modification. Project Designers must contact the Occupational and Environmental Safety Office (OESO) to ensure adequate and up-to-date information.

2. References

- A. 29 CFR 1910.1025 - OSHA Lead Standard for General Industry
- B. 29 CFR 1926.62 - OSHA Lead Standard for Construction
- C. 40 CFR Parts 260-272 - EPA Hazardous Waste Regulations
- D. Lead-Base Paint: Interim Guidelines for Hazard Identification and Abatement, Department of Housing and Urban Development

3. Responsibilities

- A. Project Planners and Managers shall be responsible for ensuring that all requirements of this policy are carried out as applicable to their specific projects. This will involve coordination of effort between project management, the Occupational and Environmental Safety Office (OESO), and the selected contractor.
- B. The OESO shall be responsible for advising project planners and managers concerning the lead hazards that affect their projects, performing surveys to assess the presence and scope of lead-containing materials, classifying materials as regulated hazardous waste and acting as a liaison between Duke University and regulatory authorities.

4. Implementation

- A. Inspection:

1. The first step in any project that may involve lead-bearing paints shall be to arrange for an inspection of the affected areas. The inspection will provide information that is essential to the project planning process. Specifically, inspection results shall facilitate early decisions about expected occupational exposures to lead dust, the necessity of abatement, control measures and the generation of regulated hazardous waste.
2. All lead inspections are not equivalent. Because of the potential impact on the project, it shall be paramount that inspections be conducted in such a manner to ensure that resultant information is useful. Thus, the following inspection criteria shall be met.
3. Because of such variables as paint film thickness, inadequate mixing, number of coats, etc., at least five measurements shall be taken of each building component with similar coating. For large area projects involving multiple rooms the following matrix shall be used:
 - a. Up to 25 rooms 1 sample of each component in each room
 - b. 26 - 75 rooms 1 sample of each component in 50 percent of rooms
 - c. 76 - 150 rooms 1 sample of each component in 35 percent of rooms
 - d. Over 150 rooms 1 sample of each component in 25 percent of rooms
4. Sampler results in percent by weight do not provide sufficient information for either dust hazard or waste potentials. Two methods may be employed to give adequate results. If sampling by scraping paint, the area scraped must be quantified. The paint within this test area (6.25 square centimeters is recommended) shall be scraped down to the substrate and submitted for analysis by an AIHA accredited lab. Sampling by spectrum analyzer XRF directly reports in mg/cm².
5. Qualitative sampling methods must be confirmed. Such methods as LeadChek and sodium sulfide may be useful for inspection planning purposes. They shall not however, replace quantitative sampling and analysis as described above.

B. Project Planning

1. Once the inspection is complete, the OESO will present specific recommendations to the Project Planners. Such recommendations will address the following areas:
 - a. Necessity for abatement prior to general construction
 - b. Type of controls necessary
 - c. Management of lead-contaminated waste materials

C. Abatement

1. Abatement will be required whenever high concentrations of airborne lead dust are expected or lead-bearing paints are to be removed without disturbing the substrate. All abatement projects shall be designed in accordance with the Housing and Urban Development Guidelines. All work shall be done by a Contractor who has been prequalified by the OESO. Submittals required for prequalification are as follows:
 - a. Contractor's Lead Exposure Compliance Program [29 CFR 1926.62(e)(2)]
 - b. Contractor's Respiratory Protection Program [29 CFR 1926.62(t)]
 - c. Contractor's Medical Surveillance Program [29 CFR 1926.62(j)]
 - d. Contractor's Hazard Communication Program [29 CFR 1926.59]
 - e. Contractor's Lead Hazard Training Program [29 CFR 1926.62(l)] with training records for workers
 - f. Compilation of air monitoring data from projects done over last twelve-month period
 - g. Documentation of EPA Permit as Hazardous Waste Transporter (if required by project)
2. Abatement projects shall be considered complete when results of wipe samples obtained by the OESO are less than 500 micrograms of lead per square foot of surface area.

D. Exposure to Lead Dust

1. The Duke Project Manager will inform Contractors of the presence of lead-containing materials that may be affected by the project. Contractors will use this information to ensure compliance with the OSHA Lead Exposures in Construction Standard (29 CFR 1926.62).

E. Lead-Bearing Hazardous Waste

1. Construction wastes from lead abatement projects may be regulated as hazardous wastes under Resource Conservation and Recovery Act (RCRA). Because the RCRA regulations demand that Duke University retain ownership and concomitant liability for the wastes until destruction, it shall be essential that all such wastes be managed through the OESO Hazardous Waste Program. If indicated, the OESO will obtain representative samples of waste materials generated during the project for analysis. If analytical results show lead levels above 5.0 milligrams per liter by the Toxicity Characteristic Leachate Procedure (TCLP), wastes shall be regulated as hazardous.