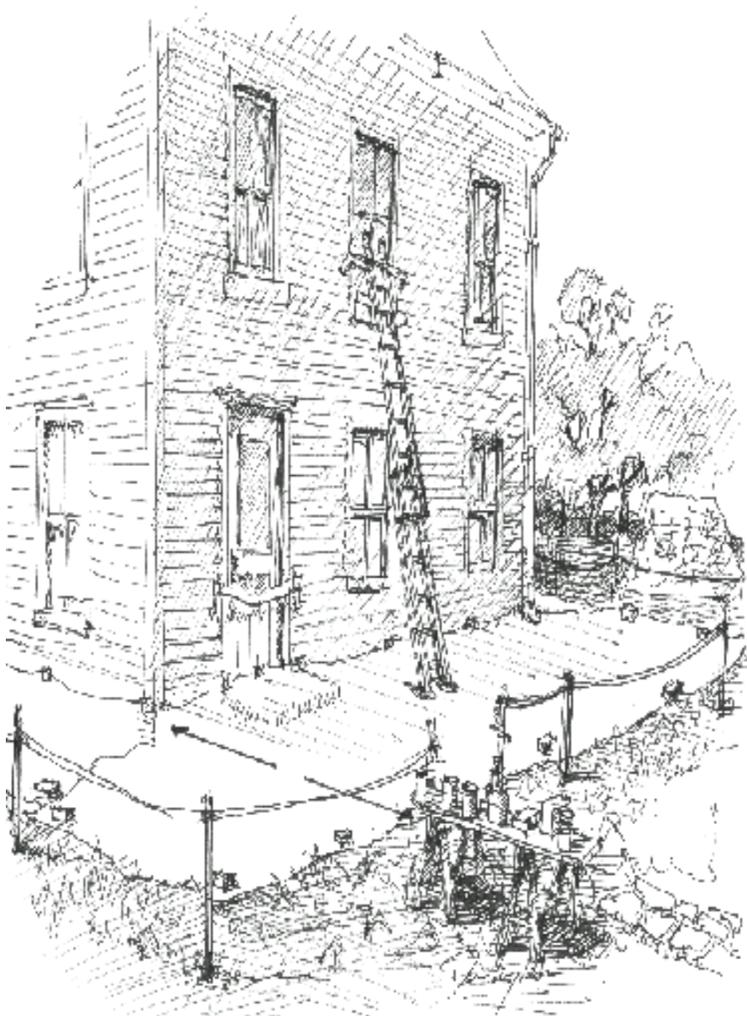


# Addressing Lead-Based Paint Hazards during Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

*“HUD’s 3R Course”*



## Instructor Manual

For use in HUD-sponsored Lead Safe Work Practices Training

February 23, 2001 Edition







U.S. ENVIRONMENTAL  
PROTECTION AGENCY  
WASHINGTON, D.C. 20640

U.S. DEPARTMENT OF HOUSING  
AND URBAN DEVELOPMENT  
WASHINGTON, D.C. 20410-3000



APR 19 2001

Dear Colleague:

This letter clarifies the Title X requirements for rehabilitation and lead hazard reduction in property receiving up to \$25,000 per unit in Federal rehabilitation assistance under regulations issued by the Department of Housing and Urban Development (HUD). This letter also clarifies the definition of "abatement" under regulations issued by the Environmental Protection Agency (EPA) and HUD. Both agencies issued their regulations under the authority of Title X of the 1992 Housing and Community Development Act, which among other things amended the Toxic Substances Control Act. EPA and HUD are working together to ensure that these two regulations complement each other to ensure that children are protected from lead-based paint hazards.

EPA is authorized to set minimal standards for all lead-based paint abatements, inspections, and risk assessments. This includes establishing training and certification requirements and work practice standards for individuals and firms engaged in those activities, and developing hazard standards. While EPA regulations do not mandate abatement, they require that whenever abatement activities occur by design, they be performed by certified personnel. EPA also authorizes states and tribes to operate their own training and certification programs to address inspections, risk assessments, and abatement if they demonstrate that they are at least as protective as the EPA program and provide for adequate enforcement. Because authorized state and tribal programs may differ from the EPA training and certification program, individuals and firms working in these areas must check with the authorized state or tribe to ensure compliance with those requirements. Local jurisdictions may also have requirements for lead hazard control.

HUD is authorized to require lead-based paint hazard control measures in federally-assisted housing, community development, and loan guarantee programs, and to provide grants to address lead-based paint hazards in low-income, privately-owned dwelling units. HUD's Lead Safe Housing Rule, also issued under the authority of Title X, requires that each recipient of Federal rehabilitation assistance less than \$25,000 per unit must reduce lead-based paint hazards, through either interim controls or, if desired, abatement (this does not include public housing authorities conducting modernization). With limited exception, recipients conducting Federally assisted rehabilitation of more than \$25,000 per unit must abate lead-based paint hazards.

Pursuant to Title X, both EPA's and HUD's regulations define abatement generally as any measure or set of measures *designed* to permanently eliminate lead-based paint hazards, including occupant protection and safe work practices. Whenever activities intended to permanently eliminate lead hazards are being conducted, EPA and HUD consider such activities

to be abatement. Under HUD's Lead Safe Housing Rule, intention to conduct abatement would, in virtually all circumstances, be established when HUD regulations require abatement, when abatement is specified in work specifications, job write-ups, cost allocation, or similar documents, or when abatement is expressly ordered by a responsible state or local agency or court order. HUD regulations require abatement during modernization of conventional pre-1978 family public housing developments (regardless of funding level), conversions, and for housing rehabilitation programs funded through the HUD Office of Community Planning and Development when Federal rehabilitation assistance exceeds \$25,000 per unit.

EPA's regulations at 40 CFR Part 745.223 exclude from abatement "renovation, remodeling, landscaping or other activities, when such activities are not *designed to permanently eliminate lead-based paint hazards*, but, instead, are designed to repair, restore, or remodel a given structure or dwelling, even though these activities may incidentally result in a reduction or elimination of lead-based paint hazards" (emphasis added). When the primary purpose of work is rehabilitation or weatherization, EPA and HUD do not consider such activities to be abatement. The presence of a lead inspection or risk assessment report or the presumption of the presence of lead-based paint does not trigger federal abatement requirements or automatically change a housing rehabilitation project into an abatement project. Similarly, the use of specific work practices, such as window replacement, does not by itself change a rehabilitation project into an abatement project. On the other hand, even if a housing unit's Federal rehabilitation assistance is less than \$25,000, activities expressly intended to permanently eliminate lead hazards are considered abatement. For example, if a cost allocation document subtracts the cost of window replacement from the hard cost of rehabilitation as a lead-based paint hazard reduction measure, the window removal is considered to be abatement. Any other building component replacement, enclosure, or encapsulation measure intended to permanently eliminate a lead-based paint hazard, particularly as documented in regulation, project specifications, cost allocation document, or court or agency order is abatement.

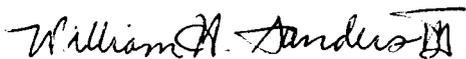
For paint repair and rehabilitation activities in properties receiving less than \$25,000 in federal rehabilitation assistance, HUD regulations require occupant protection, the use of workers trained in lead-safe work practices and clearance testing whenever more than de minimis amounts of paint are disturbed. Occupant protection is a required element of all federally-assisted rehabilitation projects covered under Subpart J of the HUD regulation, regardless of funding level, because occupant protection is a requirement under lead-safe work practices (see 24 CFR 35.1350(b) and 24 CFR 35.1345). While EPA does not currently regulate remodeling or renovation activities, both EPA and HUD support the use of lead-safe work practices for all rehabilitation and paint repair activities involving surfaces that may contain lead-based paint. HUD has adapted EPA's one-day training courses to address the requirements of HUD's Lead Safe Housing Rule and HUD is working to make its courses widely available for those subject to HUD's rule (see [www.hud.gov/offices/lead](http://www.hud.gov/offices/lead) for a schedule of course offerings).

HUD will enforce its requirements. Those who believe HUD's lead-based paint

regulations are being violated should send a written complaint and supporting documentation to:

John P. Kennedy  
Associate General Counsel for Finance and Regulatory Enforcement  
U. S. Department of Housing and Urban Development  
451 Seventh St., SW  
Washington, DC 20410

When fully implemented, these requirements will help to ensure that every child living in federally-assisted housing will have a lead-safe home.



William H. Sanders, III, Director  
Office of Pollution Prevention and Toxics  
U.S. Environmental Protection Agency



David E. Jacobs, Director  
Office of Healthy Homes and Lead Hazard Control  
U.S. Department of Housing and Urban  
Development

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## A Note to Instructors on How to Use This Manual

The *Student Manual* includes the slides and corresponding notes underneath each slide, as well as exercises, and appendices, and a copy of *Lead Paint Safety: A Field Guide for Painting, Home Maintenance, and Renovation Work*.

This *Instructor Manual* includes all of the materials that are in the *Student Manual* and instructor notes for each of the slides and exercises in this course.

As you open the *Instructor Manual*, you will notice that the right hand page consists of the slide and notes from the *Student Manual*, while the left hand page consists of the instructor notes for that slide.

In addition, the *Instructor Manual* contains suggested answers to the exercises and suggestions for facilitating discussions during the exercises.

Both the instructor and student manuals contain ten appendices. Several of these appendices consist of down-loaded and printed regulations, fact sheets, and supplemental information. Appendix 10, Supervisory and Business Issues, is a chapter of course material that may be used at the discretion of the instructor. If the instructor judges that the class composition includes a large percentage of contractors, company owners or supervisors, the instructor may elect to compress each of the other course modules to allow time for the presentation of this additional course content. Therefore, the instructor needs to analyze the audience before delivering the introductory section to plan the proper amount of time for each module if the use of Appendix 10 is elected.

## Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

### Equipment, Supplies, and Materials You Will Need

- Overhead projector
- Projection screen
- Course overhead transparencies
- VCR
- VCR monitor
- Video: *Moving Toward A Lead-Safe America* (HUD)
- Instructor manual
- Student manuals
- Blank overhead transparencies (1 box should be more than sufficient)
- Overhead transparency markers (for instructor and for students—at least one marker for each 4 students so that groups can write up answers to exercises and present them to the rest of the class)
- Blackboard, white board, or flip chart paper and stand
- Markers appropriate for blackboard, white board, or flip chart
- Masking tape
- Table tents with each student's name (on both sides) (a table tent is an 8½" x 11" sheet of heavy stock paper that is folded in half length-wise—the paper should be heavy enough that it will not bend when set on the table after being folded)
- Copies of *Lead Paint Safety: A Field Guide for Painting, Home Maintenance, and Renovation Work* for each participant. This document can be obtained from the National Lead Information Center. Contact them at 1-800-424-LEAD or on their Internet web site: <http://www.epa.gov/lead/nlic.htm>. Allow several weeks for delivery of the documents.
- A laminated paint chip (1 centimeter square) on a cardboard display (optional).
- Picture slides when appropriate and available from HUD
- Heavy duty disposal bag and duct tape to demonstrate “gooseneck” technique of sealing disposal bags

# Table of Contents

## **Module**

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### **Introduction and Welcome**

#### **Module 1:**

Why Should I Be Concerned About Lead Contaminated Dust?

#### **Module 2:**

Talking To Clients And Planning Work

#### **Module 3:**

Set-up Your Space To Contain Lead-Dust

#### **Module 4:**

Safe Work Practices

#### **Module 5:**

Clean up And Check Your Work

#### **Appendix 1:**

Lead Paint Safety—A Field Guide for Painting, Home Maintenance, and Renovation Work

#### **Appendix 2:**

Information About Key HUD Requirements Regarding Lead-Based Paint and the Responsibilities of Key Federal Agencies

Summary of U.S. Department of Housing and Urban Development (HUD) Requirements for Safe Work Practices

Responsibilities of Key Federal Agencies Regarding Lead-Based Paint

#### **Appendix 3:**

Protect Your Family from Lead in Your Home Pamphlet (*Provided by Instructor*)

**Appendix 4:**

Information About Lead-Based Paint Pre-renovation Education Rule

Lead Pre-Renovation Education Rule Flyer

Lead-Based Paint Pre-Renovation Regulation Tri-fold Pamphlet

Pre-Renovation Lead Information Rule: Questions and Answers

Pre-Renovation Lead Information Rule: Fact Sheet

Lead-Based Paint Pre-Renovation Education Rule: Handbook

Lead-Based Paint Pre-Renovation Education Rule: Interpretive Guidance Part 1

Lead-Based Paint Pre-Renovation Education Rule: Correction to Interpretive Guidance Part 1

Lead-Based Paint Pre-Renovation Education Rule: Interpretive Guidance Part 2

**Appendix 5:**

Liability Insurance Summary Fact Sheet

**Appendix 6:**

OSHA Respiratory Protection Standard Overview

**Appendix 7:**

OSHA Lead in Construction Standard Commentary

**Appendix 8:**

OSHA Substance Data Sheet for Occupational Exposure to Lead

**Appendix 9:**

Overview of EPA and State Requirements

Certification and Interim Controls

Waste

**Appendix 10:**

Supervisory and Business Issues

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Introduction and Welcome Instructor Notes

### **Slide 1:** Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

- This is the course title slide.
- Welcome everyone and introduce the course title.
- Be sure to verify that participants in the classroom intended to take this course and not some other course.

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# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

02/23/2001



# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Introduction and Welcome Instructor Notes

### **Slide 2:** Introduction and Welcome

- This is the title slide for this module.
- Introduce yourself. Write your name on the black board, white board, flip chart paper or blank overhead transparency.
- Highlight your background and experience. Your goal here is to demonstrate to the participants in the class that you have the qualifications to present this material.

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# Introduction and Welcome

02/23/2001



# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Introduction and Welcome Instructor Notes

### Slide 3: Introduction Overview

- This introduction covers the bulleted list of topics on the slide. Briefly review this list with the class participants. Do not go into detail about each of the topics because you will be covering the details when you present each of the following slides in the module. Then:
  - Ask participants to introduce themselves.
  - Describe the meeting facility and review logistics with participants.
- Introductions:
  - Ask the participants to introduce themselves in less than one minute per person. Ask them to state:
    - ✓ Name;
    - ✓ Company they work for;
    - ✓ What they want to learn in the course;
    - ✓ Whether they currently use any lead-safe work practices.
- Meeting facility and logistics:
  - Provide logistical information including a brief overview of the training schedule or the day, including breaks, lunch, etc.
  - Indicate where the emergency exits, restrooms and phones can be found.
  - Discuss ground rules, as necessary. Examples of ground rules include:
    - ✓ Come back from breaks on time so that the class can finish at the designated hour.
    - ✓ Raise hands to be recognized.

# Introduction Overview

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- ◆ **Introductions**
- ◆ **Meeting facility and logistics**
- ◆ **Course objective**
- ◆ **Course manual**
- ◆ **Course agenda**

02/23/2001



# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Introduction and Welcome Instructor Notes

### Slide 4: Course Objective

- The course objective is stated in the student notes below the slide.
- This slide highlights the two key points that you want course participants to take away from the course:
  - Minimizing creation of lead-contaminated dust is achieved by “safe work practices” which are discussed extensively in Module 4.
  - Proper set-up, containment, and clean up keep dust in a specific area and protects residents, especially children, from exposure to lead during and after work. These points are discussed in Modules 3, 4, and 5.

# Course Objectives

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- ◆ **Minimize creation and dispersal of lead-contaminated dust and debris during**
  - Renovation and Remodeling
  - Rehabilitation
  - Maintenance
- ◆ **Protect residents, especially children, from exposure to lead-contaminated dust and debris**
  - Set-up and Containment
  - Safe Work Practices
  - Clean-up and Clearance

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## Objective

- Upon completion of this course, participants will be able to perform renovation, remodeling, and rehabilitation in a manner that minimizes creation and dispersal of lead-contaminated dust and protects residents, especially children, from possible lead exposure.

## Minimize dust and protect children

- This course will show contractors how to perform their work in a manner that creates the least amount of dust possible, and how to contain and clean up the dust that they do create so that it does not spread throughout the house or to neighboring properties.

## Who can use this course

- The techniques discussed in this course apply to work performed by a variety of contractors and employees, including plumbers, electricians, residential renovators, remodelers, and painters.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Introduction and Welcome Instructor Notes

### Slide 5: This Course...

- The main point of this slide is to inform participants of the opportunity that taking this course opens to them (work in housing projects receiving federal funding), and to identify the area (abatement) that this course does not qualify them to work in.
- Lead-based paint abatement must be performed by abatement workers certified by EPA or an authorized state. These workers must be supervised by a lead-based paint abatement supervisor certified by EPA or by an EPA-authorized state.
- In addition to this course, other courses that meet the HUD requirement include:
  - The Lead-Based Paint Maintenance Training Program, “Work Smart, Work Wet, and Work Clean to Work Lead Safe” prepared by the National Environmental Training Association for EPA and HUD.
  - The “Remodeler’s and Renovator’s Lead-Based Paint Training Program”, prepared, by HUD and the National Association of the Remodeling Industry.
  - A lead-based paint supervisor course or lead-based paint abatement worker course accredited under state or federal regulations.

## This Course...

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- ◆ **Is one of several courses that will enable you to perform R&R work in federally-funded housing**
- ◆ **Is not an abatement course**
- ◆ **Satisfies general lead training requirements of HUD**
  - Provides an introduction to the OSHA lead in construction standard
  - Comprehensive treatment of OSHA requirements requires additional training
- ◆ **May not satisfy state and local training requirements**

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### Working in federally-funded housing

- If you perform R&R work on homes or residential buildings that receive federal funding and were constructed before 1978, such as public housing or rehabilitation funded by HUD, you must take a course on working with lead-based paint. A list of courses approved by HUD that meet this requirement can be found on the HUD Website at: <http://www.hud.gov/offices/training>. For more information on HUD requirements for working on residential properties with lead-based paint, see the appendix on HUD requirements.

### Lead abatement training

- EPA defines abatement to mean measures intended to permanently eliminate lead-based paint hazards. This type of work requires special training, not provided by this course, and certification. Many states have defined the term abatement differently and have specific training and certification requirements, therefore, check with your state to obtain information about any state specific requirements. This training does not meet the training requirements of the OSHA Respiratory Protection Standard or project-specific training requirements found in OSHA.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Introduction and Welcome Instructor Notes

### Slide 6: Training Manual Overview

- Walk participants through the five modules by highlighting the module title and length of time needed to cover the material.
- Emphasize that the course is intended to be interactive with discussions and exercises to practice some of the activities discussed in the modules.
- Highlight each of the appendices.
- Take the time to have participants thumb through the Field Guide. Emphasize that they can take it on-site to help provide guidance on working in a lead-safe manner and that the guide contains illustrations of suggested methods for reducing, containing, and cleaning up dust in work areas.

# Training Manual Overview

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- ◆ Five modules
- ◆ Interactive exercises
- ◆ Appendices
- ◆ Lead Paint Safety Field Guide

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## Modules

In addition to this Introduction and Welcome, there are five modules in this course:

- Module 1 Why Should I Be Concerned About Lead-Contaminated Dust?
- Module 2 Talking to Clients and Planning Work
- Module 3 Set-up Your Work Space to Contain Lead-Dust
- Module 4 Safe Work Practices
- Module 5 Clean-up and Check Your Work (Clearance)

## Activities and Exercises

- The course includes activities and exercises to help you identify methods of reducing the amount of dust you create, and containing and cleaning up the dust you created. Many of the exercises and activities take place in small groups, so you will have an opportunity to share your experiences and ideas with others in the class.

## Appendices

- As indicated in the table of contents, this manual has several appendices that provide extra information that will help contractors.

## Field Guide

- This manual also provides you with a copy of the *Lead-Based Paint Safety Field Guide*. This handy Field Guide is easy to use and has illustrations of suggested methods for reducing, containing, and cleaning up dust in work areas. Take it with you to work.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Introduction and Welcome Instructor Notes

### Slide 7: Course Agenda

- Write the agenda on a flip chart, black board or white board, or on the overhead transparency that says, "Course Agenda" in the title. Distribute a hardcopy to students.
- Walk participants through the agenda for the training.
- This training is approximately 8 hours of instruction and may be offered during a single day or over several days depending on the needs of the participants. If the course is offered over a single day, the following agenda is recommended:

|                     |   |
|---------------------|---|
| <b>7:30 - 8:00</b>  | <b>Registration</b>   |
| 8:00 - 8:15         | Introduction and Welcome  |
| 8:15 - 8:30         | Video "Moving Toward A Lead-Safe America"                         |
| 8:30 - 9:45         | Module 1: Why Should I Be Concerned About Lead-Contaminated Dust? |
| <b>9:45 - 10:00</b> | <b>Break</b>  |
| 10:00 - 11:00       | Module 2: Talking to Clients & Planning Work                      |
| 11:00 - 12:00       | Module 3: Set-up Your Work Space to Contain Lead-Dust             |
| <b>12:00 - 1:00</b> | <b>Lunch-On your own</b>  |
| 1:00 - 2:30         | Module 4: Safe Work Practices                                     |
| 2:30 - 3:30         | Module 5: Clean-up and Check Your Work                            |
| <b>3:30 - 3:45</b>  | <b>Break</b>  |
| 3:45 - 4:15         | Review  |
| 4:15 - 5:00         | Exam and Evaluation   |

# Course Agenda

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# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Slide 1-1: Module 1 Why Should I Be Concerned About Lead-Contaminated Dust?**

- This is the module title slide.
- Announce the module and move quickly to the next slide.

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# **Module 1**

## **Why Should I Be Concerned About Lead-Contaminated Dust?**



2/15/2001 02/23/2001

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Slide 1-2: Module 1 Overview**

- This module covers the bulleted list of topics on the slide. Review this list with the class participants.
- Module objective. The purpose of this module is to identify and describe the health effects of lead exposure and thereby establish the importance of protecting residents (and workers) from exposure to lead-contaminated dust.
- Upon completion of this module, students will be able to explain:
  - Why we are concerned with lead-contaminated dust;
  - The health risks of lead to children and adults; and
  - The federal regulations that affect lead-based paint.
- Show video here: "Moving Towards a Lead Safe America"

# Module 1 Overview

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- ◆ Exercise
- ◆ Why is lead-contaminated dust a problem?
- ◆ Health risks and effects of lead?
- ◆ What is lead-based paint?
- ◆ How many homes contain lead-based paint?
- ◆ What is the government doing about lead-based paint?
- ◆ Summary



U.S. Department of Housing  
and Urban Development

1-2

2/15/200102/23/2001

## Upon completion of this module, you will be able to explain

- Why we are concerned with lead-contaminated dust
- The health risks of lead to children and adults
- The federal regulations that affect lead-based paint

You will be viewing a video presentation, titled “Moving Toward a Lead-Safe America” at this time.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-3: Why Are Dust and Debris a Problem?

- Review the notes beneath the slide.
- Highlight the following points:
  - Tiny amounts of lead can be extremely harmful.
  - If dust contains lead, it can poison workers, residents, and children.
  - Workers may bring home lead-contaminated dust in their vehicles and on their clothes and shoes and expose children and other adults to lead-contaminated dust.
  - Lead particles are often so small that you cannot see them, and yet you can breathe or swallow them. The smaller the particle, the more easily it is absorbed into an adult or child's body
  - Children often inhale or swallow lead-contaminated dust during normal hand-to-mouth activities.
  - Adults can swallow or breathe dust during work activities.
- **Pass around a laminated paint chip to show the amount of lead-based paint it takes to poison a child.**
- ✓ **Emphasize that if proper precautions are not taken prior to or during jobs that generate dust, workers, residents, and children may become lead-poisoned.**

## Why Are Dust and Debris a Problem?

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- ◆ **Dust and debris can contain lead**
- ◆ **Lead-contaminated dust and debris are poisonous**
- ◆ **Small amounts of lead-contaminated dust can poison children and adults**
  - Children swallow it during ordinary play activities
  - Adults swallow or breathe it during work activities
- ◆ **Workers can bring lead-contaminated dust home and poison their families**



U.S. Department of Housing  
and Urban Development

1-3

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### **Dust and debris from renovation, remodeling, and rehabilitation jobs in pre-1978 housing may contain lead**

- Pre-1978 paint may contain lead.
- Renovation, remodeling, and rehabilitation jobs disturb paint that may contain lead.
- Any activity involving surface preparation, such as hand scraping, power sanding, the use of heat guns, and open flame burning, can generate significant amounts of dust. More complicated tasks such as removing building components and demolishing walls also can create a lot of dust.

### **Renovation, remodeling, or rehabilitation jobs that disturb lead-based paint can create a hazardous situation**

- If proper precautions are not taken prior to and during jobs that may generate dust, workers, residents, and children may become lead-poisoned.

### **Workers may bring home lead-contaminated dust**

- A worker's family may be most at risk from being exposed to lead-contaminated dust because dust can be tracked home and into vehicles on the worker's clothing and shoes.

### **Small amounts of lead-contaminated dust can poison**

- A tiny amount of lead can be extremely harmful. A lead-contaminated paint chip the size of your fingernail contains enough lead to poison an adult.
- Lead particles are often so small that you cannot see them, and yet you can breathe or swallow them. Smaller dust particles that are inhaled or swallowed are more easily absorbed by the body than larger particles, and can therefore cause poisoning more easily.

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Exercise**

- See the module 1 exercise instructor notes on the opposite page.
- The answer key on the page following the instructor notes provides suggested answers, although there may be other correct answers.
- The main point of the exercise is for participants to identify standard or common work practices that create a lot of dust and/or paint chips.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### MODULE 1 EXERCISE Instructor Notes

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**Objective:** Identify common work practices that produce a lot of dust and debris.

**Length:** Total time: 20 minutes; 10 minutes to answer; 10 minutes to report and debrief.

**Directions:**

1. Introduce the exercise objective and describe what each group should do.
2. Determine the number of groups of 3 to 5 people (group size should be at least 3 or 4 people and up to 5 people if the class is large). Try to keep the number of groups to no more than 6 or 7 if the class is large. The table below may help you determine group size and number of groups. Have participants count off up to the number of groups to assign to groups.

| Class Size | Number of Groups | Group Size |
|------------|------------------|------------|
| 1-5        | 1                | 1-5        |
| 6-8        | 2                | 3 or 4     |
| 9-11       | 3                | 3 or 4     |
| 12-14      | 4                | 3 or 4     |
| 15-19      | 5                | 3 or 4     |
| 20-24      | 6                | 3 or 4     |
| 25-30      | 6                | 4 or 5     |
| 30-50      | 7                | 4 to 7     |

3. Tell class they have 10 minutes to answer all four questions, and then we will have a class discussion on the answers each group develops. Each group should select a spokesperson to present the group's answers to the rest of the class.
  - Give 5, 2, and 1-minute warnings of time remaining.
  - Circulate around the room to ensure that students understand their roles.

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Debriefing Procedure**

Take 10 minutes for debriefing.

- Have one group present its answers to questions 1 and 2.
- Ask whether other groups had a different ranking for the work practices, and if so to please share their ranking for question 1 and their answer to question 2. If no other group volunteers, choose a group to present their answers to questions 1 and 2.
- The point of this discussion is to help participants see that the types of work practices they may currently use can create a lot of dust and debris and that there are some common reasons for the amount of dust and debris created.
- Ask another group what they answered for question 3. Then ask other groups if they agree or disagree. If they disagree, ask them to say why.
- Finally, ask another group to answer question 4. Ask the other groups if they would do something different. If no one answers, choose a group and ask them to respond. Try to make sure that each group has had a chance to participate and answer at least one question.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

# MODULE 1 EXERCISE Instructor Notes

**Objective:** Identify common work practices that produce a lot of dust and debris.

**Length:** 20 minutes.

**Directions:** In groups of 3 to 5 take 10 minutes to answer the questions below. Assign one person to report your group's answers to the rest of the class.

1. Rank the work practice descriptions according to the amount of dust and paint chips you think they make. In the table below, under the column labeled Rank, write:
  - 1 next to the work practice that makes the most dust and debris.
  - 2 next to the work practice that makes the second most amount of dust and debris.
  - 3 next to the work practice that makes the third most amount of dust and debris.
  - Continue until you have ranked each work practice according to how much dust and debris you think it will make. A smaller number means that you think the work practice will create more dust or debris than a larger number.

If you think that some work practices make about the same amount of dust or debris you can give them the same rank. If you think that each practice makes different amounts of dust, rank them from 1 to 7.

| Work Practice Description   | Rank |
|---|------|
| A. Using a power sander with no vacuum attachment to remove interior paint from a plaster wall.   | 1    |
| B. Hand sanding a small (less than 2 square feet) area for surface preparation on an interior room where the paint is in good condition.  | 5    |
| C. Ripping out old kitchen cabinets in a 50 year-old house where the paint on the walls and cabinets is in good condition (e.g., it is not peeling or flaking).   | 2    |
| D. Repairing a sticking window. Loosen the painted sashes, remove inside stop molding, remove top and bottom sash, use a power planer to remove old paint, reglaze and repair the sash as necessary, repair and paint the jamb, reinstall the sash. | 2    |
| E. Removing old carpeting placed over a hardwood floor in one room.   | 3    |
| F. Demolishing one interior wall using hand or power tools.   | 2    |
| G. High pressure power washing or hydro blasting exterior paint.  | 4    |

## **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

### **Module 1 Instructor Notes**

2. For the work practice(s) that you ranked #1 (it makes the most dust and debris), tell why you think it makes the most dust or debris.

*Work practice A creates the most dust and debris. Any sanding on a surface area more than 2 square feet generates a lot of dust. Recent studies by the National Institute for Occupational Safety and Health (NIOSH) indicate that power sanding without a HEPA filter attachment creates the most dust.*

*Different groups could come up with different answers. If they do, ask them why. Underlying assumptions about the nature of the work practice may have contributed to their decision. Different assumptions may render different answers acceptable.*

3. For the work practice(s) that you ranked last (it makes the least amount of dust and debris) tell why you think it makes the least amount of dust and debris.

*Hand sanding less than 2 square feet for surface preparation usually generates less dust and debris than the other activities listed in question 1. This is the smallest area in the list of work practices. In addition, hand sanding is unlikely to use as much pressure on the surface or move as fast as a power sander. The combination of small surface area and less total "activity" means that less dust and debris is usually created.*

*Different groups could come up with different answers. If they do, ask them why. Underlying assumptions about the nature of the work practice may have contributed to their decision. Although unlikely in this case, different assumptions may render different answers acceptable.*

4. If you actually did any of the jobs described above, what would you do to clean up when the job was finished?

*Most contractors will sweep or vacuum obvious dust from the interior work area and dispose of any debris or garbage. They will also pick up drop cloths for reuse at another work site.*

*If contractors do more than this, there is usually less to learn in order to perform cleanup activities that are safer and more effective.*

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1

### MODULE 1 EXERCISE

**Objective:** Identify common work practices that produce a lot of dust and debris.

**Length:** Total Time: 20 minutes.

**Directions:** In groups of 3 to 5 take 10 minutes to answer the questions below. Assign one person to report your group's answers to the rest of the class.

1. Rank the work practice descriptions according to the amount of dust and paint chips you think they make. In the table below, under the column labeled Rank, write:
  - 1 next to the work practice that makes the most dust and debris.
  - 2 next to the work practice that makes the second most amount of dust and debris.
  - 3 next to the work practice that makes the third most amount of dust and debris.
  - Continue until you have ranked each work practice according to how much dust and debris you think it will make. A smaller number means that you think the work practice will create more dust or debris than a larger number.

If you think that some work practices make about the same amount of dust or debris you can give them the same rank. If you think that each practice makes different amounts of dust, rank them from 1 to 7.

| Work Practice Description   | Rank |
|---|------|
| A. Using a power sander with no vacuum attachment to remove interior paint from a plaster wall.   |      |
| B. Hand sanding a small (less than 2 square feet) area for surface preparation on an interior room where the paint is in good condition.  |      |
| C. Ripping out old kitchen cabinets in a 50 year-old house where the paint on the walls and cabinets is in good condition (e.g., it is not peeling or flaking).   |      |
| D. Repairing a sticking window. Loosen the painted sashes, remove inside stop molding, remove top and bottom sash, use a power planer to remove old paint, reglaze and repair the sash as necessary, repair and paint the jamb, reinstall the sash. |      |
| E. Removing old carpeting placed over a hardwood floor in one room.   |      |
| F. Demolishing one interior wall using hand or power tools.   |      |
| G. High pressure power washing or hydro blasting exterior paint.  |      |





# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-5: Health Risks of Lead

- This slide and the next cover similar points, so review both slides before presenting to the class to be sure you make the necessary points appropriate for each slide.
  - Children, particularly children under age 6, are most at risk from small amounts of lead.
  - Children can absorb more lead than adults.
  - Children's brains and nervous systems are still developing.
  - Lead exposure causes irreversible brain, nervous system, and organ damage.
  - Emphasize that this can lead to:
    - ✓ Reading and learning difficulties in school
    - ✓ Behavioral problems
    - ✓ Difficulty paying attention and hyperactivity
  - Emphasize that children are more at risk of swallowing lead-contaminated dust during ordinary hand-to-mouth activity when they put their hands, toys, or other objects in their mouths.
- Pregnant women are at risk from exposure to lead. Lead also goes directly through the placenta and can poison the fetus.
- Emphasize that adults tend to inhale lead-contaminated dust.
- Emphasize that the health effects of lead in adults include:
  - Loss of sex drive.
  - Physical fatigue, lack of coordination, dizziness, muscle or joint aches.
  - Nausea.
  - Diarrhea or constipation.

# Health Risks of Lead

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## ◆ Very hazardous to children

- Reading and learning difficulties
- Behavioral problems
- Difficulty paying attention and hyperactivity
- May result in seizures, coma, and death

## ◆ Hazardous to pregnant women

- Damage to fetus

## ◆ Also hazardous to workers and other adults

- Loss of sex drive
- Physical fatigue



1-5

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## **Children, particularly children under six, are most at risk from small amounts of lead**

- Children absorb more lead than adults. Because children's brains and nervous systems are still developing, lead causes irreversible brain, nervous system, and organ damage. This can lead to:
  - Reading and learning difficulties in school
  - Behavioral problems
  - Difficulty paying attention and hyperactivity
- In some cases, exposure to lead may have devastating health effects including seizures, coma, and death.
- Children are at a greater risk than adults because during normal and frequent playing or hand-to-mouth activity, children may swallow or inhale dust from their hands, toys, food, or other objects.

## **Among adults, pregnant women are especially at risk from exposure to lead**

- Changes in a woman's body during pregnancy may cause lead stored in her bones to be released into her blood.
- Lead can then be passed from the mother to the fetus. Lead poisoning can cause:
  - Miscarriages
  - Premature births
  - Low birth weight

## **Health effects of lead in adults include:**

- Loss of sex drive
- Physical fatigue, lack of coordination, dizziness, muscle or joint aches
- Kidney damage or failure
- Damage to male and female reproductive organs
- Miscarriages in pregnant women
- Headaches and memory loss
- Nausea and stomach aches
- Heart disease and high blood pressure

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-6: Lead Poisoning

- Lead poisoning often has no symptoms.
- Testing a person's blood is the way we measure exposure to lead.
  - The most common way to measure the amount of lead in blood is the Blood Lead Level test. The Blood Lead Level test:
    - ✓ Measures the amount of lead that is circulating in your blood.
    - ✓ Tells you about your exposure to lead in the last 2-3 weeks.
    - ✓ Does not tell you the total amount of lead in your body.
    - ✓ Does not tell you if any long-term damage has occurred.
    - ✓ A blood lead level above 10  $\mu\text{g}/\text{dl}$  is not safe for children or for women during pregnancy. A level of 39  $\mu\text{g}/\text{dl}$  or less may mean that damage to the human body is occurring, even if the person has no symptoms. A level of 40 to 49  $\mu\text{g}/\text{dl}$  means that serious health damage may occur. A level of 50  $\mu\text{g}/\text{dl}$  or greater means that severe health damage is likely, may be permanent, and may occur quickly.
  - A different, less common, test is the Zinc Protoporphyrin (ZPP) test. The ZPP test:
    - ✓ Indicates the effect of lead exposure over the previous 3-4 months.
    - ✓ The test can measure damage to a person's blood-forming system.
    - ✓ Does not tell you the total amount of lead in your body.
    - ✓ Does not tell you if any long-term damage has occurred.

# Lead Poisoning

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## ◆ Lead poisoning does not always have obvious symptoms

- Symptoms are easily misdiagnosed, thus delaying effective treatment and increasing likelihood of permanent physical and mental damage
- The primary way to determine lead poisoning is to take a blood lead level test.



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1-6

## Lead poisoning does not always have obvious symptoms

- Lead poisoning often has no obvious symptoms, so symptoms are frequently attributed to other causes.
- Specific symptoms that people with lead exposure sometimes complain of include:
  - Headache
  - Stomach ache
  - Irritability
  - Fatigue
  - Loss of appetite
  - Pain in joints
- Because many symptoms are vague or similar to flu symptoms, parents may not get immediate medical attention for their children. This is critical for young children. The longer lead remains in the body of a young child, the higher the risk of permanent damage.
- The best way to determine if lead is present in the body is by testing a person's blood.

## Blood Lead Level

- Because lead poisoning does not always have symptoms, the most common way to measure the amount of lead in your blood is the Blood Lead Level (BLL) test. The BLL test:
  - Measures the amount of lead that is circulating in your blood.
  - Tells you about your exposure to lead in the last 2-3 weeks.
  - Does not tell you the total amount of lead in your body.
  - Does not tell you if any long-term damage has occurred.
  - A blood lead level above **10 ug/dl** is not safe for children or for women during pregnancy. The Centers for Disease Control and Prevention consider this to be the "level of concern." A level of 39 ug/dl or less may mean that damage to your body is occurring, even if you have no symptoms. A level of 40 to 49 ug/dl means that serious health damage may occur. A level of 50 ug/dl or greater means that severe health damage is likely, may be permanent, and may occur quickly.
  - HUD's "environmental intervention blood lead level" means a confirmed concentration of lead in whole blood equal to or greater than 20 ug/dl for a single test or 15-19 ug/dl in two tests taken at least 3 months apart. The source of this level was research from the Centers for Disease Control and Prevention (CDC.)

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Slide 1-7: What Is Lead-Based Paint?**

- The purpose of this slide is to provide the definition of “lead-based paint.”
- Review the notes beneath the slide and emphasize that paint with lower concentrations of lead can cause health problems.

# What Is Lead-Based Paint?

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## ◆ Lead-based paint is

- Any paint or surface coating that contains at least 0.5% lead or 5,000 ppm by dry weight or 1.0 mg/cm<sup>2</sup>
- Some states regulate paint with different concentrations of lead

## ◆ Why was lead used in paint?

- Primary pigment
- Added color
- Durability and corrosion control
- Drying agent

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## Lead-Based Paint

- Lead-based paint is any paint or other surface coating that contains lead equal to or greater than 0.5 percent or 5,000 parts per million by weight or 1.0 mg/cm<sup>2</sup> as measured by laboratory analysis or X-ray fluorescence (XRF).
- Paint with concentrations of lead lower than the standard definition above can still cause health problems.

## Some states regulate paint with lower concentrations of lead

- You should check with your state to see if the state has requirements that are more stringent than the federal requirements.

## Why was lead added to paint?

- Lead was added to paint for color and durability. Lead-based paints stood up to wear and tear, temperature and weather changes, and resisted mold and mildew in moist areas.
- Before the 1950's concentrations of lead in paint were as high as 50 percent by weight. From about 1950 to 1973, the concentration of lead in paint was reduced as other pigment materials became more popular.

## Lead-based paint was banned from residential use in 1978

- In 1978 the Consumer Products Safety Commission banned the sale of lead-based paint for residential use. In practice, this means that homes built in 1978 could still have used lead-based paint because existing supplies of paint containing lead would still have been available.

## Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

### Module 1 Instructor Notes

#### Slide 1-8: How Widespread is Lead in Housing?

- **Key message of this slide:** Pre-1960 housing contains significant amounts of lead-based paint. Homes built between 1960 and 1978 may contain some lead-based paint, but at a much lower rate.
  - Emphasize that pre-1978 housing should be assumed to contain lead-based paint. Additionally, note that lead-based paint under new paint is still a problem and will create lead-contaminated dust and debris.
  - Highlight that approximately 38 million homes contain some lead-based paint, according to HUD's 2001 *Report on the National Survey of Lead-Based Paint in Housing*.
- Homes built before 1960 may contain significant levels of lead-based paint. Explain that many homes built before 1978 contain some lead-based paint. Participants should assume that any house built in 1978 or earlier contains lead-based paint unless the house has been tested for lead by an EPA or State certified risk assessor or lead-based paint inspector, and the results indicate that the house does not contain lead-based paint.
- Emphasize that pre-1960 housing is likely have lead-based paint on the exterior and interior. After 1960 and up through 1978, there was a decline in the use of lead-based paint in the interior of housing; however, it is likely that it will be present on the exterior of housing. Lead paint on the exterior of housing could result in soil contamination with lead, making it easy for dirt and dust from around the house to blow in or be tracked into the home. Children also are more likely to play in the dirt near the house and thus be exposed to lead contaminated soil, dirt, and dust. After 1978, lead-based paint is not likely to be found in the interior or exterior of housing.

## How Widespread is Lead in Housing?

| Year House Was Built | Percent of Houses with Lead-Based Paint |
|----------------------|---|
| Before 1940          | 87 percent                              |
| 1940-1959            | 69 percent                              |
| 1960-1978            | 24 percent                              |
| All Housing          | 40 percent                              |



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1-8

### Source of data in table above:

*HUD Report on the National Survey of Lead-Based Paint in Housing, 2001.*

### Homes built before 1960

- Homes built before 1960 are more likely than homes built after 1960 to contain higher concentrations of lead and to have deteriorated paint surfaces. In the late 1950's paint companies began to use less lead.

### Homes built before 1978

- Play it safe. You should assume that any house built before 1978 or earlier contains lead-based paint unless the house has been tested for lead and the results indicate that the house does not contain lead-based paint.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-9: What is Being Done About Lead?

- The main point of this slide is to highlight federal regulations that apply to situations where lead-based paint may be present.
- Review the notes beneath the slide on the opposite page and on the back of the slide (the notes run over onto the following page). Describe responsibilities outlined in the EPA, HUD, OSHA, and CDC regulations.
- If participants are interested, provide a brief legislative history of the regulations including the Title X legislation.
  - In 1971, Congress passed legislation limiting the use of lead paint. Initial regulations issued in 1973 by the Consumer Product Safety Commission set a limit of 0.5 percent lead (5,000 parts per million).
  - In 1978 new regulations were issued that lowered the allowable amount of lead in paint to 0.06 percent (600 parts per million).
  - In 1992 Congress passed the Residential Lead-Based Paint Hazard Reduction Act of 1992, commonly called “Title Ten” (Title X). Title X emphasized a housing-based approach to preventing childhood lead poisoning. It established new responsibilities for federal, state, and local agencies and for private individuals to prevent and control lead hazards. It also authorized the Department of Housing and Urban Development (HUD), the Environmental Protection Agency (EPA), and the Occupational Safety and Health Administration (OSHA) to regulate various aspects of lead-based paint.
- In addition to regulations, there are a number of education efforts to reach homeowners, housing providers, and renovation and remodeling contractors.
  - Discussion Question: Do you think you could use the information you learn here today to inform and educate your customers?
- Potential liability issues can affect contractors even if HUD regulatory requirements are followed. Contractors may have greater liability than they realize if they are not following existing HUD, EPA, and OSHA regulations.
  - More information about liability can be found in Appendix 5 on Insurance.

# What Is Being Done About Lead?

- ◆ **Lead-based paint was banned from residential use in 1978**
- ◆ **Programs affecting renovation, remodeling, and rehabilitation**
  - EPA: Contractors distribute lead pamphlet before renovation
  - HUD: Grants for Lead Hazard Control in private low-income housing; Lead Safe Housing Rule for Federally owned or assisted housing
  - HUD and EPA: Disclosure before lease or sale
  - OSHA: Worker protection standards for lead in construction
  - CDC: Testing children's blood
- ◆ **Education**
- ◆ **Local government programs and regulations**



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## Federal Regulations and Standards

### Environmental Protection Agency (EPA) Responsibilities:

- EPA is responsible for protecting human health and safeguarding the natural environment. Under the Toxic Substances Control Act (TSCA), Title IV, EPA has developed or is developing regulations and standards for lead-based paint services and training.

### Department of Housing and Urban Development (HUD) Responsibilities:

- HUD is responsible for setting requirements for federally owned or assisted housing and operating the Lead Hazard Control Grant Program for privately owned low-income housing. Most pre-1978 properties receiving HUD funds are subject to HUD requirements for lead-based paint.

### Occupational Health and Safety Administration (OSHA) Responsibilities:

- OSHA is responsible for developing standards to protect worker health and safety on the job.

### Centers for Disease Control and Prevention (CDC) Responsibilities:

- CDC is responsible for promoting health and quality of life by preventing and controlling disease, injury, and disability.

See Appendix 2 for more information about the regulations and standards set by the four agencies above.

## Education

Training courses like this one inform housing providers and renovation, remodeling, and rehabilitation contractors about the potential dangers of lead-based paint and how to prevent potential problems. Both EPA and HUD offer outreach materials and training courses on aspects of lead-based paint.

EPA and HUD information and materials can be obtained on the Internet ([www.epa.gov/lead/nlic.htm](http://www.epa.gov/lead/nlic.htm)) and ([www.hud.gov/offices/lead](http://www.hud.gov/offices/lead)) or by contacting the National Lead Information Center at 800-424-LEAD (800-424-5323). CDC guidelines and materials can be obtained on the Internet ([www.cdc.gov](http://www.cdc.gov)) or by contacting 800-311-3435.

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Slide 1-10: Title X (“Ten”) and Implementing Regulations**

- The following general notes on presenting regulations to renovation and remodeling (R&R) professionals should be considered prior to delivery of this section. Remember your audience for this course may get lost in extended explanation of the details of regulations. Try to give students in a general understanding of the framework of regulations currently in place on the Federal level. Focus on specific items that they must know to do R&R work.
- Explain the significance of the Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X) as the basis for all Federal lead regulations. Title X was a road map for agencies to follow in developing a national approach to the lead problem.
- Read each of the Goals of Title X.

# Title X (“Ten”) and Implementing Regulations

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## ◆ The Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X of the Housing and Community Development Act of 1992)

### ◆ Goals:

- To reduce and prevent childhood lead poisoning
- To ensure that LBP hazards are integrated into government housing policies
- Encourage promising and cost-effective methods of hazard reduction
- Educate the public



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1-10

**The Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X)** was established by Congress to reduce the risk of lead poisoning in Federal Housing stock. Some of the general purposes of this law were to prevent lead poisoning, insure that Federal policies incorporate lead hazards reduction measures, educate the public and develop an infrastructure capable of dealing with lead in housing (e.g., trained and certified professionals such as lead abatement contractors). All lead regulations from federal agencies such as the Environmental Protection Agency (EPA), the Department of Housing and Urban Development (HUD), and the Occupational Safety and Health Administration (OSHA) were developed based on direction found in Title X. This document is the cornerstone of the national lead program.

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Slide 1-11: Title X - Section 402 (c)**

- This slide continues the discussion of Title X and outlines EPA's responsibilities.
- Read through the slide to give the student an understanding of EPA's role in training.
- Emphasize that this course is an adaptation of a course developed by EPA to address the training needs of the R&R industry and to ensure that lead hazards are not introduced by R&R projects where lead-based paint is disturbed.

# Title X - Section 402 (c)

## Renovation and Remodeling

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### ◆ Requires EPA to:

- Develop guidelines for the conduct of renovation and remodeling activities which may create a risk of exposure to dangerous levels of lead
- Study the extent to which people engaged in renovation and remodeling activities are exposed to lead, or disturb lead and create a lead-based paint hazard
- Revise lead-based paint activities regulations to apply them to renovation and remodeling activities that create a lead-based paint hazard



U.S. Department of Housing  
and Urban Development

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## **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

### **Module 1 Instructor Notes**

#### **Slide 1-12: EPA Training and Certifications (Sections 402/404)**

*Convey the following to students:*

- *Standardized training is the key to ensuring that lead professionals are competent in performing their jobs. EPA has established training requirements and model curriculum that constitute the basis of training in most states. Some states have their own training requirements that expand on EPA's requirements.*
- Emphasize that individuals who perform the activities listed on this slide must be trained and in most cases must be certified in order to perform work. Mention that EPA administers the certification requirements in two ways: Directly through EPA or through State run lead programs.

## **EPA Training and Certification (Sections 402/404)**

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◆ **Individuals performing specified lead-based paint activities must be trained in EPA or State accredited training programs and certified. EPA certifies the following disciplines:**

◆ **Inspector**

- Risk Assessor
- Project Designer
- Abatement Worker
- Abatement Supervisor

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The Environmental Protection Agency (EPA) is the agency leading the development of training requirements for all lead disciplines. In addition to training courses for certification in lead-based paint activities, this course is another example of the type of training that EPA supports to accomplish Title X's goal of developing infrastructure and in educating the public on lead issues.

Title X directs EPA to develop training and certification requirements for lead professions. In response to this EPA has published 40 CFR Part 745 (Also known as the 402/404 Rule). This rule establishes specific training course content, model curricula, certification requirements, and work practice standards for the following lead disciplines:

- Inspector
- Risk Assessor
- Project Designer
- Abatement Worker
- Abatement Supervisor

Your state also may have specific requirements about certification or licensing of lead professionals, so you may need to contact your State lead certification program regulator. Refer to Appendix 9 for more information.

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Slide 1-13: Title X - Section 406(b)**

- This slide introduces the idea of notification of residents that lead may be disturbed during R&R work.
- Point out how to get copies of this document.

## Title X - Section 406(b)

### ◆ Lead hazard information pamphlet

- 800-424-LEAD
- [www.epa.gov/lead](http://www.epa.gov/lead)
- [www.hud.gov/offices/lead](http://www.hud.gov/offices/lead)

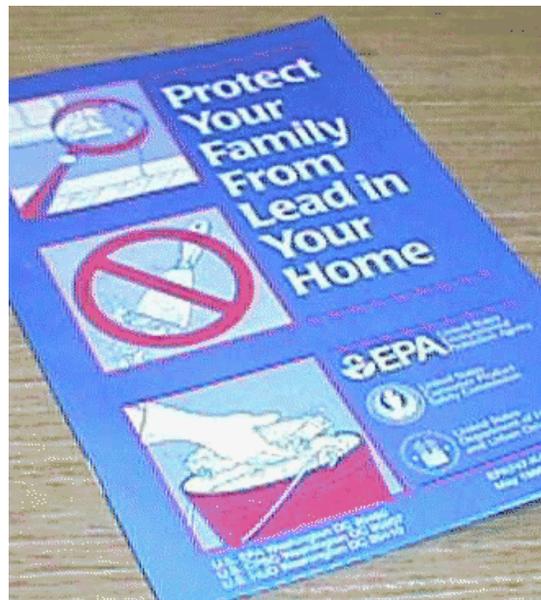
### ◆ Renovation of pre-1978 housing:

Renovators, multi-family housing owners, managers receiving compensation shall provide the lead hazard control pamphlet to the owner and/or occupant prior to such activity.



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The pamphlet below is the one that **must** be given out. It may be obtained from the National Lead Information Center at 1-800-424-LEAD (5323) or by download from [www.epa.gov/lead](http://www.epa.gov/lead) or [www.hud.gov/offices/lead](http://www.hud.gov/offices/lead).



# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-14: Title X - 406(b) (Continued)

- It is important that students understand that the Lead Hazard Notification Pamphlet must be provided no more than 60 days before starting work.
- The slide emphasizes time frames and the need for documentation. Make sure they understand the project size exemption and the emergency exemption. In this case, “emergency” means an immediate threat to life or property.

## **Title X - Section 406(b) (cont.)**

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- ◆ **No more than 60 days before the start of the activity; at least 7 days if sending by certified mail**
- ◆ **Written acknowledgement; records retention for 3 years**
- ◆ **Covers work in the dwelling unit, common areas**
- ◆ **Exemptions: repairs of areas less than or equal to 2 ft<sup>2</sup>, emergency renovations or written documentation of no LBP via certified inspector**



U.S. Department of Housing  
and Urban Development

1-14

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Section 406(b) is an important part of Title X for companies performing renovation or remodeling work. It requires communication with the owner about lead before work begins.

In an informational pamphlet about this regulation, EPA describes “emergency renovations” as: “unplanned renovations or activities done in response to a sudden, unexpected event which if not immediately attended to presents a safety or public health hazard or threatens property with significant damage.” They provide two examples of emergency renovations:

- Renovations to repair damage from a tree that fell on a house
- Renovations to repair a pipe break in an apartment complex

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Slide 1-15: Title X - Section 1018**

- Read through the requirements of the Disclosure Rule.
- Point out to students that the Disclosure Rule requires that a homeowner be told about known lead hazards that exist in the home at the time of purchase. Explain that this requirement makes it easier for R&R contractors to determine, by interviewing the homeowner, whether lead is present or should be assumed to be present based on historical information on the home. Emphasize the importance of assuming lead is present if conditions are unknown and the house is built prior to 1978.

## Title X - Section 1018

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### ◆ The HUD/EPA Disclosure Rule requires:

- “Protect Your Family from Lead in Your Home” pamphlet be given to people before they lease or buy pre-1978 housing
  - Renovators give this same pamphlet before starting work
- Sellers or landlords disclose information about any known lead-based paint or lead-based paint hazards before selling or renting a home.
- Buyers have up to 10 days to check for lead hazards



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1-15

Section 1018 applies to sellers or lessors of pre-1978 housing. It requires that sellers disclose information about lead to potential buyers. They must disclose information they have about the presence of lead-based paint or LBP hazards. The buyer has 10 days to obtain an inspection or risk assessment. Owners of rental housing must disclose such information to potential renter before a lease is signed. This pamphlet is the same pamphlet that renovators and remodelers provide to clients before work begins.

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

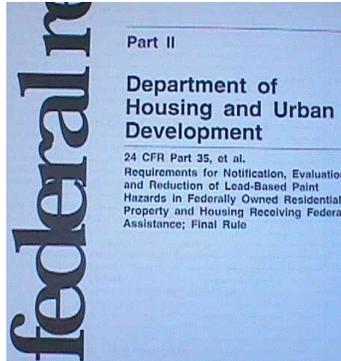
### **Slide 1-16: HUD's Lead Safe Housing Rule**

- Trainer's Note: This slide introduces the New HUD Rule and outlines the general target audience for that regulation.
- Discuss the types of affected housing, the program-based nature of the rule's requirements, and the effective date of the rule.

# HUD's Lead Safe Housing Rule

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- ◆ Pre-1978 **housing** receiving HUD or other Federal assistance
- ◆ Pre-1978 Federally owned **housing** being sold
- ◆ Required activities vary by type of assistance



1-16

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The Section 1012/1013 regulation (“Lead Safe Housing Rule”) covers Federally assisted housing and Federally owned housing which is being sold. Housing owned and operated by a Federal agency other than HUD is not covered by this regulation.

The word HOUSING is highlighted because the regulation does not cover “Child Occupied Facilities” unless they are part of a property covered by the regulation.

## **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

### **Module 1 Instructor Notes**

#### **Slide 1-17: HUD's Lead Safe Housing Rule: Interim Controls**

- Remind students of the components of interim controls.
- Tell students that R&R work may include interim controls and are covered in the work practice section of this curriculum. Advise students about checking with their State to find out if State law or regulation allows interim controls to be done by trained but uncertified individuals. If they do, R&R contractors may perform these activities. See Appendix 9 for State contacts.

# HUD's Lead Safe Housing Rule: Interim Controls

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- ◆ Training requirements for personnel
- ◆ Includes occupant protection and clearance
- ◆ Activities include:
  - Paint stabilization
  - Friction or impact surfaces
  - Chewable surfaces
  - Dust-lead hazard control
  - Soil-lead hazard control



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Interim controls are defined by HUD as, “a set of measures designed to reduce temporarily human exposure or likely exposure to lead-based paint hazards. Interim controls include, but are not limited to, repairs, painting, temporary containment, specialized cleaning, clearance, ongoing lead-based paint maintenance activities, and the establishment and operation of management and resident education programs.”

Risk assessors may recommend interim controls for controlling lead-based paint hazards.

Note: HUD's Lead Safe Housing Rule's definition of paint stabilization includes repainting and correcting the source of damage.

## **HUD Lead Hazard Criteria**

- Deteriorated paint
- Lead in dust (clearance/risk assessment)

|                          |     |                           |
|--------------------------|-----|---------------------------|
| Floors                   | 40  | $\mu\text{g}/\text{ft}^2$ |
| Interior windowsills     | 250 | $\mu\text{g}/\text{ft}^2$ |
| Troughs (clearance only) | 400 | $\mu\text{g}/\text{ft}^2$ |
- Lead in bare soil (risk assessment)

|            |       |                        |
|------------|-------|------------------------|
| Play areas | 400   | $\mu\text{g}/\text{g}$ |
| Other soil | 1,200 | $\mu\text{g}/\text{g}$ |

## **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

### **Module 1 Instructor Notes**

#### **Slide 1-18: HUD's Lead Safe Housing Rule: Safe Work Practices**

- Read through the components of Lead Safe Work Practices.
- Explain the four work types under "Included in":
  - Ongoing lead-based paint maintenance – These are tasks that are done over and over again and include all maintenance activities that disturb lead-based paint.
  - Paint Stabilization – This activity returns non-intact paint to an intact condition.
  - Rehabilitation (<\$5,000 per unit) – These are small scale activities that upgrade existing structures. These include activities such as the replacement of one or two windows.
  - Standard Treatments – These are a group of activities, such as treating doors and windows so they do not rub and generate dust, that are conducted to address the potential generation of lead hazards. These treatments are usually done if lead is assumed to be present.

# HUD's Lead Safe Housing Rule: Safe Work Practices

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## ◆ Included in:

- Ongoing LBP Maintenance
- Paint stabilization
- Rehabilitation
- Standard treatments

## ◆ Prohibited methods

## ◆ Occupant protection and worksite preparation

## ◆ Specialized cleaning

## ◆ De minimis levels (24 CFR 35.1350)



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The Lead Safe Housing Rule requires lead safe work for the activities listed on the slide. It specifies prohibited practices, requirements for protecting occupants, preparing the work site. Special cleaning techniques must be used, and clearance achieved.

All areas of deteriorated paint must be repaired. However, if an area of deteriorated paint is below the “de minimis” amount, it means it is a small area and lead safe work practices and clearance are not required.

The *de minimis* levels are:

- 20 square feet on exterior surfaces
- 2 square feet in any one interior room or space
- 10 percent of the total surface area on an interior or exterior type of component with a small surface area

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Slide 1-19: HUD's Lead Safe Housing Rule: Clearance Examination**

- Review the items on the slide to give the students an idea of what is included in the clearance process.

# HUD's Lead Safe Housing Rule: Clearance Examination

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- ◆ **Visual Assessment**
- ◆ **Dust sampling**
  - Interim Dust Lead standards
  - Will be changed to EPA's standards when effective
- ◆ **Certified, or trained and supervised personnel**



1-19

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Visual Assessment means looking for, as applicable, deteriorated paint, visible surface dust, debris and residue as part of a risk assessment or clearance examination, or completion or failure of lead hazard reduction.

Before a supervisor releases an area for clearance test to be performed, the supervisor should do his own visual inspection of the area to make sure it is clean.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-20: HUD's Lead Safe Housing Rule: Dust Lead Standards

- Review the clearance standards for various surfaces.
- Describe the difference between a “window trough” and a “window sill.”
- Emphasize the importance of cleaning.
- Describe how small a “microgram” is.
- Refer to slides 5-7 and 5-11 for details on clearance; the in-depth discussion on clearance requirements is designed to be included in Module 5. This slide is to introduce the concept of clearance and “cleaning to a standard.”
- HUD uses the standards of EPA's Section 403 rule.

## HUD's Lead Safe Housing Rule: Dust Lead Standards

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HUD uses these clearance standards:

- ◆ Floors 40  $\mu\text{g}/\text{ft}^2$
- ◆ Interior window sills 250  $\mu\text{g}/\text{ft}^2$
- ◆ Window troughs 400  $\mu\text{g}/\text{ft}^2$

**Need to clean carefully to meet these standards.**



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These are EPA's clearance standards, which HUD uses.

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Slide 1-21: Know the HUD Rule!**

- This slide is to emphasize and reiterate the importance of knowing the HUD Rule. Make sure students understand that they can get a Copy of the Rule by calling the National Lead Information Center at (800) 424-LEAD (5323).

**Instructor: Cover State Regulations at this point**

# Know The HUD Rule!

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**You may obtain a copy of the regulation from NLIC at (1-800-424-LEAD) to ensure an understanding of the requirements.**



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Individuals performing renovation, remodeling, and rehabilitation in pre-1978 housing need to understand the HUD Lead Safe Housing Rule. Appendix 2 contains summary fact sheets on this regulation.

# **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

## **Module 1 Instructor Notes**

### **Slide 1-22: HUD's Lead Hazard Control Grant Program**

- Review the slide to inform students about money resources made available through HUD through the Lead Hazard Control Grant Program.

# HUD's Lead Hazard Control Grant Program

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- ◆ Targeted to private homes owned or occupied by low-income families
- ◆ Since 1993, the program has:
  - Provided 177 grants totaling \$552 million to 112 State and local governments in 35 states and DC
  - Educated families on how to eliminate or reduce children's lead exposure.



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The HUD Lead Hazard Control Grant Program has completed lead hazard reduction in over 30,000 homes. Most of the work done in these homes consisted of lead interim controls. More information on this program may be found by visiting the HUD Office of Healthy Homes and Lead Hazard Control web site at [www.hud.gov/offices/lead](http://www.hud.gov/offices/lead).

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-23: Occupational Safety and Health Administration (OSHA) Lead Regulations

- Explain that OSHA has two major categories of regulations: General Industry and Construction. Mention briefly that the General Industry Standard covers all uses of lead in manufacturing and existing structures, including building maintenance, while the Construction Standard covers construction work, specifically including repair and renovation work.
- This slide introduces the four major regulations that OSHA has developed that affect R&R work where lead is present. Mention that additional information on each is located in the Appendices of this manual. Point out the citation for each regulation.

#### Lead in Construction Standard: 29 CFR 1926.62

- OSHA's Lead in Construction Standard applies to all workers doing construction work who have the potential for exposure to lead on the job. This specifically includes repair and renovation work. This course covers the major elements of the construction standard.

#### Hazard Communication Standards: 29 CFR 1926.59 (Construction) and 29 CFR 1910.1200 (General Industry)

- The OSHA Hazard Communication Standards cover all individuals that work with or around hazardous chemicals. They allow employees to gain access to information about the hazards of substances that they work around, safe work practices, and how to protect themselves.

# Occupational Health and Safety Administration (OSHA) Lead Regulations

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- ◆ 29 CFR 1926.62 Lead in Construction
- ◆ 29 CFR 1926.59 Hazard Communication for Construction
- ◆ 29 CFR 1910.1200 Hazard Communication for General Industry
- ◆ Other Construction Safety Standards



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The major OSHA regulations pertaining to lead are listed on this slide. A comprehensive treatment of OSHA requirements requires additional training. More detailed information on the lead in construction and hazard communication standards are included in this manual. Information on the OSHA Lead in Construction Standard are located in Appendix 7. For information on the Hazard Communication standard, see Appendix 8.

**29 CFR 1926.62** The OSHA Lead in Construction Standard went into effect June 3, 1993. It applies to all workers doing construction work who may be exposed to lead on the job. This specifically includes repair and renovation work. This manual covers the major sections of the standard on following slides.

**29 CFR 1910.1200 (General Industry) and 29 CFR 1929.59 (Construction)** The OSHA Hazard Communication Standards cover all individuals that work with or around hazardous chemicals. It allows employees to gain access to information about the hazards of substances they work around, safe work practices and how to protect themselves. They require employees receive training about the specific chemicals in a workplace, labeling and Material Safety Data Sheets.

**Employees are covered by one or more of these regulations if lead in their workplace is disturbed.**

## Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

### Module 1 Instructor Notes

#### Slide 1- 24: OSHA Lead in Construction Standard

- The OSHA Lead in Construction Standard covers a broad range of work activities. Emphasize to the students that this standard covers every phase of construction work, if employees have the potential for occupational lead exposure.
- The standard states, “All construction work excluded from coverage in the general industry standard for lead by 29 CFR 1910.1025(a)(2) is covered by this standard.” It also states, “Construction work is defined as work for construction, alteration and/or repair, including painting and decorating.”
- This regulation, therefore, is not just targeted to heavy construction activities; it includes what many individuals refer to as “repair or renovation.” Activities such as simply preparing walls for repainting or applying wallpaper, or a complex application of encapsulants during a lead abatement project are both covered by this far-reaching regulation.

# OSHA Lead in Construction Standard

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**Requirements are exposure-based and task-based. The regulation covers:**

- ◆ **Demolishing or salvaging structures where lead or materials containing lead are present**
- ◆ **Removing, encapsulating or enclosing materials containing lead**



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Some of the requirements of this regulation are based on the work that is done; others are based on employees' potential for exposure. Employers need to be familiar with all of these requirements.

The OSHA Lead in Construction Standard covers a broad range of work activities. This standard covers every phase of construction work, if employees have the potential for occupational lead exposure. The standard specifically states, "All construction work excluded from coverage in the general industry standard for lead by 29 CFR 1910.1025(a)(2) is covered by this standard." It also states, "Construction work is defined as work for construction, alteration and/or repair, including painting and decorating."

Demolition or salvage of structures where lead or materials containing lead are present and removal, enclosure or encapsulation may be large-scale projects are covered under this regulation. The terms, "removal, enclosure, or encapsulation" are also used to refer to activities done by specialty lead abatement contractors who are certified to do this type of work, so this standard clearly applies to those abatement activities as well.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1- 25: OSHA Lead in Construction Standard: Scope

- Many R&R activities are covered under this regulation.
- Remind students that even though residential use of lead-based paint is prohibited, other products used in new construction still contain lead (e.g., sheet lead used in roofing.) Remind the students of the definition of LBP, and that some paints and coating may still contain some lead, even if it is not enough to categorize the paint as “lead-based paint.” This regulation covers structures or substrates that contain lead, installation of products containing lead or clean-up activities. Specifically mention that this course emphasizes “clean up” where lead is present.
- Therefore, R&R contractors, plumbers, roofers, welders, painters, and many other types of firms are covered by this regulation because they use lead in products or it already exists in the housing and buildings where they are working.
- OSHA’s definition of “lead” is very important. OSHA defines lead as, “metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.” This means that OSHA does not limit employee exposure to only lead found in paint. OSHA does not put a limit on how much lead needs to be in a product for it to be a potential problem for employees. It means that lead in any amount from any source on a job site could be a problem if handled improperly or if employees are not protected. That is why employer and employee knowledge about the products and activities on a worksite is necessary, and why training is a requirement in many OSHA regulations.
- Explain to the students that OSHA does not define or regulate “lead-based paint;” this is an EPA/HUD term. OSHA protects employees from exposure to lead from any source or during “lead-related tasks.” From this perspective, employers performing work in any facility should be aware of the presence of any lead, not just “lead-based paint.”

# Construction Standard: Scope

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- ◆ **New construction, altering, repairing, or renovating structures or substrates (or portions of them) that contain lead or materials containing lead**
- ◆ **Installing products containing lead**
- ◆ **Contamination or emergency clean-up**



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Many R&R activities are covered under this regulation. Despite the fact that the Consumer Product Safety Commission limits the amount of lead that can be in paint for residential use, other products used in new construction still contain lead (e.g., sheet lead used in roofing.) This regulation covers structures or substrates that contain lead, installation of products containing lead or clean-up activities. Therefore, R&R contractors, plumbers, roofers, welders, painters, and a host of other types of firms are covered by this regulation because they use lead.

OSHA's definition of "lead" is very important. OSHA defines lead as, "metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds." This means that OSHA has not limited employee exposure to lead from paint. OSHA does not put a limit on how much lead needs to be in a product for it to be a potential problem for employees. It means that any amount of lead from any source on a job site could be a problem. That is where knowledge about the products and activities on a worksite becomes important, and why training is a requirement in many OSHA regulations.

OSHA does not define or regulate "lead-based paint." This is an EPA/HUD term. OSHA protects employees from exposure to lead from any source or during "lead-related trigger tasks." These will be discussed further on page 1-27.

## **Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing**

### **Module 1 Instructor Notes**

#### **Slide 1-26: Construction Standard: Scope (continued)**

- Explain that the regulation covers not only the construction work itself, but also related work involving moving or transporting lead or materials containing lead. Try to provide “real-world” examples of activities they perform, such as: disposing or storing of lead materials on a job site and associated maintenance work, sorting waste materials, putting plastic sheeting in disposal bags, carrying bags of waste or building components to a dumpster. Ask students to provide other examples of their work activities that may be covered under the “moving or transporting” requirement.
- Explain that where lead is present, their employers are regulated by this standard (and may have been since 1993 without knowing it.)

## **Construction Standard: Scope (cont.)**

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- ◆ **Transporting, disposing, storing or containing lead or materials containing lead where construction activities are performed;**
- ◆ **Maintenance operations associated with the activities mentioned above**



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Construction work involving moving or transport of lead or materials containing lead is also covered under this regulation. This includes disposing or storing of lead materials on a job site and associated maintenance work, including sorting waste materials, putting plastic drop cloths in bags for disposal, carrying bags of waste or building components to a dumpster, or other similar activities.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-27: Construction Standard: Key Concepts

- Review OSHA's definition of "lead." Define Competent Person, Exposure Assessment, Action Level, Permissible Exposure Limit, and the 3 groups of lead-related trigger tasks.
- Since OSHA requirements depend on a worker's exposure to lead on the job, employers are required to perform an "*exposure assessment*," that is, assess the job and take breathing zone air samples of employees performing tasks when airborne lead exposures may occur. The employer is also required to have a "*competent person*," be responsible for ensuring worker safety and health on the job.
- OSHA defines *competent person* as "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them." Workers must be protected during the exposure assessment as if they are being exposed to lead. The employer must give employees the results of the air sampling within five working days of receiving the results. OSHA requirements protect workers based on their potential for exposure to lead. If a worker's potential for exposure is high, the more stringent portions of the OSHA regulations apply.
- "*Action Level*" for lead in the air means employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter calculated as an 8-hour time-weighted average." Remind students that a microgram of lead is a very small amount. Explain that the employee's total lead exposure is based on a full 8-hour time period. Higher or lower exposures over the course of a work shift are averaged together to produce an average exposure for that employee over the work shift. The employer must provide medical surveillance and training when employees are exposed at or above the action level. State that respirators, protective clothing, and other more restrictive procedures are NOT required AT THE ACTION LEVEL. If they use lead safe work practices, employee exposure may remain below this level. Using lead safe work practices minimizes the risk of elevated exposure.
- "*Permissible Exposure Limit*" (PEL) for lead is a level of lead in the air that employer is not permitted to let an employee exceed without an appropriate respirator. Specifically, the PEL for lead is 50 micrograms per cubic meter of air averaged over an 8-hour period, also a time-weighted average. The employer must provide a level of protection sufficient to keep an employee's exposure below the permissible exposure limit when the worker is performing a lead-related task until the exposure assessment shows that exposure is below PEL.

Discuss initial exposure assessment process as it relates to the three groups of trigger tasks and read the student notes on this subject. Explain that each of the three groups of trigger tasks has a particular potential for exposure, with Group 1 having the lowest, and Group 3 having the highest potential.

- Group 1: Manual demolition of structures, dry manual scraping or sanding, using a heat gun, power tool cleaning with dust collection systems, spray-painting with lead-based paint.
  - Group 1 trigger tasks require employee protection as if lead exposure is above the PEL (50 to 500 ug/m<sup>3</sup>).
- Group 2: Using lead-based mortar, burning lead, rivet busting, power tool cleaning without dust collection systems, movement or removal of abrasive blasting containment, clean up activities where dry expendable abrasives are used.
  - Group 2 trigger tasks, as if lead exposure is above 10 times the PEL (500 ug/m<sup>3</sup> to 2500 ug/m<sup>3</sup>).
- Group 3: Abrasive blasting, welding, torch cutting, torch burning.
  - Group 3 trigger tasks, as if lead exposure is above 50 times the PEL (greater than 2500 ug/m<sup>3</sup>).
  - Employers may use objective or historical data to determine appropriate levels of personal protection.

# Construction Standard: Key Concepts

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- ◆ **Competent Person**
- ◆ **Exposure Assessment**
- ◆ **Action Level: 30  $\mu\text{g}/\text{m}^3$  of lead in air**
- ◆ **Permissible Exposure Limit (PEL): 50  $\mu\text{g}/\text{m}^3$  of lead in air**



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OSHA requirements depend on the level of lead exposure a worker has on the job. A “*competent person*” is responsible to identify existing and predictable lead hazards and who has the authority to correct them. The competent person is responsible for assessing the job and having air samples taken in the worker’s breathing zone and analyzed. Workers must be protected during this “*exposure assessment*.” The employer is required to give employees the results of the air sampling within five working days of receiving the results. If a worker’s potential for exposure is high, OSHA regulations are more stringent. These requirements are designed to protect workers with potential for exposure to lead.

“*Action Level*” means employee exposure, without regard to the use of respirators, to an airborne concentration of lead at or above 30 micrograms per cubic meter calculated as an 8-hour time-weighted average. This means the exposures over a shift are averaged. The employer must provide medical surveillance and training when employees are exposed at the action level. Respirators, protective clothing, and other more restrictive procedures are not required AT THIS LEVEL OF EXPOSURE.

“*Permissible Exposure Limit*” means an employer is not allowed to expose an employee to lead at concentrations above 50 micrograms per cubic meter of air averaged over an 8-hour time period. If you work in an area with more lead in the air than this level, the employer must reduce your exposure.

## **Lead-related trigger tasks are divided into three groups:**

**Group 1:** Manual demolition of structures, dry manual scraping or sanding, using a heat gun, power tool cleaning with dust collection systems, spray-painting with lead-based paint. ***NOTE: Group 1 activities, prior to initial assessments, require employee protection as if lead exposure is greater than 1-10 times the PEL (50 to 500  $\mu\text{g}/\text{m}^3$ .)***

**Group 2:** Using lead-based mortar, burning lead, rivet busting, power tool cleaning without dust collection systems, movement or removal of abrasive blasting containment, clean up activities where dry expendable abrasives are used. ***NOTE: Group 2 activities, prior to initial assessments, require employee protection as if lead exposure 10-50 times the PEL (500 to 2500  $\mu\text{g}/\text{m}^3$ .)***

**Group 3:** Abrasive blasting, welding, torch cutting, torch burning. ***NOTE: Group 3 activities, prior to initial assessments, require employee protection as if lead exposure is greater than 50 times the PEL (greater than 2500  $\mu\text{g}/\text{m}^3$ .)***

OSHA’s available data has identified high lead exposures related to “trigger” tasks. Employers must provide a higher level of protection when employees perform lead-related trigger task until the exposure assessment shows that your exposure is below the PEL.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-28: Employer Requirements: Action Level and PEL

- Explain that OSHA also requires training in many of the topics covered in this course. Inform students that if an employee has the potential for exposure at or above the action level on any day, a lead training program must be provided annually and meet specific OSHA requirements.
- Many of the lead safe work practices that OSHA requires include procedures such as good housekeeping, working clean and the use of good hygiene by employees. Make clear that if an employee has the potential for exposure above the Action Level, employers need to conduct training and medical surveillance. Note that specific information about training and medical surveillance can be found in Appendix 7 (see 29 CFR 1926.62).

Emphasize that if an employee is exposed above the PEL or performs “trigger tasks” and has not performed an initial exposure assessment, the employer has more stringent and more protective requirements including engineering controls and work practice controls to reduce exposures below the PEL, some of which require additional specialized training. This protection includes:

- Good housekeeping includes maintaining all workplace surfaces free of lead dust accumulations. Good housekeeping involves a regular schedule to remove accumulated lead dust and debris, cleaning floors and other surfaces, vacuums with HEPA filters; (shoveling, dry or wet sweeping shall only be used where vacuuming has been tried and is ineffective), and prohibits use of compressed air outside negative pressure containments to remove lead from surfaces. Emphasize the importance of minimizing dust.
- OSHA requires proper housekeeping practices be used on all jobs where lead is present, regardless of exposure potential or class of work being performed.
- *The proper respirator* for the job, respirator fitting and respiratory protection training. Protective clothing such as coveralls, gloves, hats, shoes or disposable booties for the shoes, face shields or other appropriate equipment; no blowing or shaking of contaminated clothing, closed container for used protective clothing.
- *Hygiene facilities* for hand and face washing; showering, if feasible. A lead safe area for eating and drinking must be available and as free as practicable from lead contamination. No food, beverage, or tobacco products are allowed in work area. Mention that applying cosmetics in the work area is not allowed. Explain these requirements are in place to prevent employees from ingesting lead dust.
- *Medical Surveillance*: Initial blood tests reviewed by a physician must be provided if an employee does any Group 1, 2 or 3 trigger tasks or if the employee is exposed at or above the action level any one day. Ongoing medical surveillance is required if an employee exposed to lead at or above the action level for more than 30 days in a 12-month period. Refer to standard for more detail; remind students that it is included as an appendix to this course.
- *Medical removal*: Removal from lead work area if blood lead level is too high (50 ug/dL) without loss of pay or benefits.
  - Some workers may have a blood-lead level above the medical removal level if they have been performing work involving lead exposure in the past where signs and symptoms are not apparent.
- The OSHA standard prohibits chelation to prevent lead poisoning.

### Slide 1-29: Construction Standard: Additional Provisions

## Employer Requirements: Action Level and PEL

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### ◆ At or Above the Action Level

- Training & Medical Surveillance Required

### ◆ Above the PEL, or for “Trigger Tasks”

*If employees exposed above PEL, or do Group 1, 2 or 3 work until exposure assessment is completed, the employer must provide:*

- Housekeeping
- Respiratory Protection, Protective Clothing/ Equip.
- Hygiene Facilities (showers, if feasible)
- Medical Surveillance (blood tests reviewed by doctor)
- Medical Removal (if blood lead level too high)
- Employee Information and Training

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Many of the work practices covered in this training course are also required by OSHA, such as good housekeeping practices, working clean and use of good hygiene by employees.

*Note: Specific training topics in Appendix 7 of this text.*

If an employee is exposed above the Permissible Exposure Limit (PEL) or performs “trigger tasks,” and the employer has not performed an initial exposure assessment the employer must provide more protection including engineering controls and work practice controls to reduce exposures below the PEL. This protection includes:

- Good housekeeping includes maintaining all workplace surfaces free of lead dust accumulations. Good housekeeping involves a regular schedule to remove accumulated lead dust and debris, cleaning floors and other surfaces, vacuums with HEPA filters; (shoveling, dry or wet sweeping shall only be used where vacuuming has been tried and is ineffective), and HUD prohibits the use of compressed air to remove lead from surfaces. Note: Housekeeping is required for all lead jobs.
- The proper respirator for the job, respirator fitting and training; protective clothing such as coveralls, gloves, hats, shoes or disposable booties for the shoes, face shields or other appropriate equipment; no blowing or shaking of contaminated clothing, closed container for used protective clothing.
- Facilities for hand and face washing; showering, if feasible.
- An accessible lunchroom facility or eating area must be available and as free from contamination as practical.
- Initial blood tests reviewed by a physician must be provided if an employee does any Group 1, 2 or 3 tasks (“trigger tasks”) or if the employee is exposed at or above the action level any one day. Ongoing medical surveillance is required if an employee exposed to lead at or above the action level for more than 30 days in a 12-month period.
- Removal from lead work area if blood lead level is too high (50 µg/dl).
- The OSHA standard prohibits chelation to prevent lead poisoning (a chemical to remove lead from the body).

## Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

### Module 1 Instructor Notes

- Discuss these elements of the Lead in Construction Standard:
- *Compliance plan*: OSHA requires construction work employers develop a lead compliance plan to state how they plan to comply with the lead requirements. *Note: OSHA also requires the development and implementation of a written compliance plan prior to the commencement of the job where employee exposure to lead without the use of respiratory protection will be in excess of the PEL.* Encourage students to obtain a sample lead compliance plan, which can be downloaded from the HUD lead web site at [www.hud.gov/offices/lead](http://www.hud.gov/offices/lead). It is also located in Chapter 9 of the HUD *Guidelines for the Evaluation and Control of Lead Hazards* which can also be downloaded from the HUD lead web site, and obtained from the National Lead Information Clearinghouse at 1-800-424-LEAD, as noted in this course.
- OSHA's website, [www.osha.gov](http://www.osha.gov), provides information to assist businesses in identifying workplace hazards and abatements and how OSHA regulations apply to their unique worksites.
- OSHA's "Lead in Construction Advisor 1.0" expert advisor program can be downloaded from the "OSHA Expert Advisors" web site, [www.osha-slc.gov/dts/osta/oshasoft](http://www.osha-slc.gov/dts/osta/oshasoft).
- *Signs for work above the PEL*: The regulation requires signs in the work area where employees are exposed above the PEL. The sign must say:

**WARNING  
LEAD WORK AREA  
POISON  
NO SMOKING OR EATING**

- These signs are to be cleaned as necessary and illuminated making it readily visible.
- Also note, some individual states may have different sign requirements which may require additional signs.
- The employer must keep good records for all lead exposure, monitoring, medical surveillance, and medical removals. Refer to 29 CFR 1926.62(n).
- Employees are provided the opportunity to observe all steps related to the monitoring of lead, entitled to an explanation of the measurement procedure, the right to record results or receive copies of results when returned by lab.

## Construction Standard: Additional Provisions

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- ◆ Compliance plan
- ◆ Signs for work above the PEL
- ◆ Recordkeeping
- ◆ Monitoring observation



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OSHA requires employers develop a lead compliance plan to state how they plan to comply with the lead requirements. A sample lead compliance plan can be downloaded from the HUD web site at [www.hud.gov/offices/lead](http://www.hud.gov/offices/lead). It is located in Chapter 9 of the HUD Guidelines for the Evaluation and Control of Lead Hazards.

*Note: OSHA requires the development and implementation of a written compliance plan prior to the commencement of the job where employee exposure to lead without the use of respiratory protection will be in excess of the PEL.*

The regulation also requires signs in the work area where employees are exposed at or above the PEL. Signs must be kept clean and illuminated. The sign must say:

**WARNING  
LEAD WORK AREA  
POISON  
NO SMOKING OR EATING**

The employer must keep records of all employees, social security numbers, job duties, exposure assessments, type of respiratory protection worn on the job site, medical surveillance and medical removals. The employer must also keep good records of all lead exposure monitoring, medical surveillance, and medical removals. Refer to 29 CFR 1926.62(n) for specific information.

Employers must offer employees or their designated representative the opportunity to observe any monitoring of employee exposure to lead. Employees must be provided the opportunity to observe all steps related to the monitoring of lead, and are entitled to an explanation of the measurement procedure, the right to record results or receive copies of results when returned from the lab.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-30: Additional OSHA Regulations

- Emphasize to students the importance of knowing the requirements of other OSHA construction regulations (such as for scaffolding safety, ladder safety, lockout/tagout, eye, and foot protection, electrical safety, respiratory protection for other hazardous airborne contaminants, etc.). It is not absolutely necessary that each student have a copy, but employers or company owners are responsible for compliance; their having the regulations or summaries can help them comply. The OSHA web site <[www.osha.gov](http://www.osha.gov)> is a tremendous source of information, guidance and training materials.
- Many of the OSHA requirements echo similar themes. Regulatory compliance will help protect workers from the hazards of lead. It will also produce cleaner and safer places for employees to work.

# Additional OSHA Regulations

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- ◆ **Respiratory Protection:**  
**29 CFR 1910.134**
  
- ◆ **Personal Protective Equipment:**  
**29 CFR 1910.132**
  
- ◆ **Sanitation: 29 CFR 1926.27**
  
- ◆ **Other construction safety standards**



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For information on the OSHA Respiratory Protection Standard Overview, see Appendix 6. For copies of OSHA standards, go to **[www.osha.gov](http://www.osha.gov)**.

Many OSHA regulations have similar requirements:

- Keep work area clean and free of hazards
- Assess the job and protect employees
- Use safe work practices
- Provide hygiene facilities for washing hands and face, showering if feasible
- Train employees about workplace hazards
- Do the job right and keep good records
- Access to medical and exposure records

Other construction safety standards include fall protection; scaffolding; ladder safety; eye, head and foot protection; walking/working surfaces; lockout/tagout; respiratory protection; electrical safety, etc.

These standards may require additional training.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-31: Lead Information Resources

Read this slide to students. Remind them that firms can become listed as Lead Safe Renovators by contacting *The Lead Listing*.

# Lead Information Resources

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- ◆ EPA - <[www.epa.gov/lead](http://www.epa.gov/lead)>
- ◆ HUD Lead Web site - <[www.hud.gov/offices/lead](http://www.hud.gov/offices/lead)>
- ◆ OSHA - <[www.osha.gov](http://www.osha.gov)>
- ◆ National Lead Information Center
  - Copies of the regulation
  - 1-800-424-LEAD
- ◆ Lead professionals listing
  - <[www.leadlisting.org](http://www.leadlisting.org)>



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You can get the information you will need about Federal requirements from these sources. Firms can contact the Lead Listing ([www.leadlisting.org](http://www.leadlisting.org)) and be listed as a Lead Safe Renovator if you wish.

# Addressing Lead-Based Paint Hazards During Renovation, Remodeling, and Rehabilitation in Federally Owned and Assisted Housing

## Module 1 Instructor Notes

### Slide 1-32: Module Summary

Reiterate the three key points from this module—you may want to do this as a discussion by asking the participants the following questions:

- Q: Why are we concerned with lead-contaminated dust?
  - ✓ A: We are concerned about lead-contaminated dust because standard work practices tend to create a lot of dust. If the painted surfaces being worked on contain lead-based paint, this dust can poison workers and residents.
  
- Q: How does lead get into children and adults, and what are the health risks of lead?
  - ✓ A: Adults tend to inhale lead-contaminated dust, while children tend to swallow lead-contaminated dust. Either way, lead-contaminated dust can cause significant health problems for both adults and children.
  - ✓ A: Adults--loss of sex drive, and damage to kidneys, reproductive organs, and heart. Pregnant women are susceptible to miscarriages, low birth-weight babies, and premature births.
  - ✓ A: Children--irreversible brain, nervous system, and organ damage that can cause reading and learning difficulties in school, behavioral problems, and difficulty paying attention and hyperactivity.
  
- Q: Who regulates lead-based paint and what is regulated?
  - ✓ A: At the federal level, EPA, HUD, and OSHA regulate lead-based paint and work performed in a situation where lead-based paint is present; states and some localities also regulate lead-based paint.
  - ✓ A: Regulated activities include requirements for contractors to provide information to residents in homes or units where work may disturb lead-based paint, and training requirements for specific activities such as abatement, lead dust testing, and work in federally funded housing.
  
- Emphasize that proper set-up and containment, work practices, and clean-up techniques leave less lead-contaminated dust than standard work practices and, therefore, are safer than standard work practices.

# Module Summary

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## ◆ Now you know

- Why we are concerned with lead-contaminated dust
- The health risks of lead to children and adults
- The regulations that affect lead-based paint



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The modules in the rest of the course describe how proper set-up and containment, safe work practices, and clean up techniques leave less lead-contaminated dust and debris than standard renovation, remodeling, and rehabilitation work practices.