

**Lead Safety for Remodeling, Repair, and Painting  
June 2003**

This course was a joint effort of the U.S. Environmental Protection Agency's Office of Pollution Prevention and Toxics, in partnership with the U.S. Department of Housing and Urban Development's Office of Healthy Homes and Lead Hazard Control. The course was developed by ICF Consulting under contract with EPA. Special thanks to the Environmental Management Institute for their contribution to the hands-on exercises.

# Lead Safety for Remodeling, Repair, and Painting

## TABLE OF CONTENTS

Title	Page Number
Introduction and Welcome	1
Module 1: Why Should I Be Concerned About Lead Dust?	1-1
Module 2: Set-up Your Work Space to Contain Lead Dust	2-1
Module 3: Safe Work Practices	3-1
Module 4: Clean-up and Check Your Work	4-1
Module 5: Planning the Job	5-1
Appendix 1: Flowchart for Planning a Renovation, Remodeling, or Painting Job	A1-1
Appendix 2: Planning Checklists and Tool Kits	A2-1
Appendix 3: U.S. Department of Housing and Urban Development (HUD) Requirements for Safe Work Practices	A3-1
Appendix 4: Protect Your Family from Lead in Your Home (pamphlet)	A4-1
Appendix 5: Pre-Renovation Education Information	A5-1
Appendix 6: For More Information	A6-1
Appendix 7: Optional Written Exercises 1 – Identify Common Work Practices that Create Dust 2 – Review Set-Up Methods 3 – Identify Safe Work Practices	A7-1
Appendix 8: Lead Paint Safety: A Field Guide for Painting, Home Maintenance, and Renovation Work	A8-1
Appendix 9: Skills Checklists for Hands-On Activities	A9-1



---

# Lead Safety for Remodeling, Repair, and Painting

6/11/03



1

---

# Introduction and Welcome

6/11/03



2

# Introduction Overview

---

- ◆ Introductions
- ◆ Course objectives
- ◆ Course manual
- ◆ Course agenda

6/11/03



3

# Introductions

---

◆ **In less than 1 minute please tell us:**

- Your name
- Company you work for
- What you want to learn in this course
- Do you currently use lead-safe work practices?

6/11/03



4

## Why are we here?

---

### ◆ To help prevent lead poisoning!

- Renovation, repair, and painting activities create dust
- In older homes, this dust can contain lead
- Lead is toxic – to you, your kids, and your clients

### ◆ By using the right work practices, you can help protect against lead poisoning

### ◆ This course shows you how

6/11/03



5

## Why are we here?

- Many commonly used work practices generate a lot of dust.
- Practical changes in work practices can minimize and contain dust.
- Minimizing and containing dust saves clean-up time and customers value cleaner, less dusty job sites.

## What can you do?

---

- ◆ **Contain dust in the work area**
- ◆ **Minimize the dust created**
- ◆ **Clean up completely**
- ◆ **Dispose of waste safely**
- ◆ **Determine if special requirements apply to your job**

6/11/03



6

## What can you do?

There are five key steps to take during work that will help reduce the risk of lead poisoning. You should plan your job so all of these steps can be performed properly.

1. **Contain the dust.** You will learn how to close off the area you are working in to keep the dust inside the work area and away from the rest of the house. (We'll talk about this in detail in Module 2.)
2. **Minimize the dust.** You will also learn about tools and techniques for creating less dust while you work. (Module 3.)
3. **Clean-up.** This course will teach you how to clean your work area so that no dust is left behind. (Module 4)
4. **Dispose of waste.** This course will tell you how to properly dispose of waste from jobs with lead waste (Module 4).
5. **Determine special requirements.** Some jobs require that you use the work practices in this course. Other jobs require additional training. See the next slide for more detail.

## Jobs Where Lead Safety Is Important

---

### PRE-1978 HOUSING

Remodeling, Repairs, and  
Painting in:

- Private Housing
- Housing Receiving Government Assistance



This Training Applies

Abatement in Any Housing



Additional Training  
Needed

6/11/03



7

### There are 3 types of jobs where Lead Safety is important

- Jobs being done in pre-78 private housing.
- Jobs in pre-78 housing that receives Federal, State, local, or tribal assistance. There may be specific requirements that apply to these jobs that are important to know when planning the work. To find out about if there are requirements and what must be done to meet them, ask for guidance from the public agency providing the housing assistance
- Housing where lead abatement is required. Abatement refers to work that is being done specifically with the intent to permanently control known lead-based paint. When the work to be done involves lead abatement, there are specific requirements, qualifications, and licensing needed to properly perform this work. Additional training beyond this course is needed and the supervisor must be certified. If a project requires abatement, advise the property owner that he or she will need an abatement firm to perform those parts of the job.

Note: The lead safe work practices taught in this course are also appropriate for any child-occupied facilities, such as schools and day care centers.

## This Course...

---

- ◆ Meets HUD requirements
- ◆ Demonstrates your commitment to safety

**BUT,**

- ◆ Is not an abatement course
- ◆ Does not satisfy OSHA training requirements
- ◆ May not satisfy State, local, or tribal training requirements

6/11/03



8

### The Value of this Training

- This course meets HUD requirements for interim controls / lead safe work practices training.
- Completing this training demonstrates your company's competence to prospective clients and can be a marketing advantage that distinguishes your company from the competition.

### Lead abatement training

- Lead abatement refers to work that is done for the specific purpose of permanently removing lead-based paint hazards from a home. This type of work requires special training that is not provided by this course.

### OSHA

- OSHA has training requirements for workers that employers should be aware of. For more information on OSHA requirements, visit [www.osha.gov/Publications/osha3142.pdf](http://www.osha.gov/Publications/osha3142.pdf).

### State, Local, and Tribal Requirements

- Many localities have their own lead-based paint requirements, including specific training and certification requirements. Check with your State, local, or tribal housing and environmental agencies to obtain information about any requirements.

## Training Manual Overview

---

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

6/11/03



9

### Modules

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

- Module 1 Why Should I Be Concerned About Lead Dust? **(1 hour)**
- Module 2 Set-up Your Work Space to Contain Lead Dust **(1 hour)**
- Module 3 Safe Work Practices **(1 hour)**
- Module 4 clean up and Check Your Work **(1 hour)**
- Module 5 Planning the Work **(1/2 hour)**

### 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* in Appendix 8. 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.

# Course Agenda

---

- ◆ Introduction and welcome
- ◆ Module 1
- ◆ Break
- ◆ Module 2
- ◆ Break
- ◆ Module 3
- ◆ Break
- ◆ Module 4
- ◆ Module 5
- ◆ Test
- ◆ Adjourn

6/11/03



10



---

# Module 1

## Why Should I Be Concerned About Lead Dust?

6/11/03



1-1

## Module 1 Overview

---

- ◆ 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 being done about lead-based paint?
- ◆ Summary

6/11/03



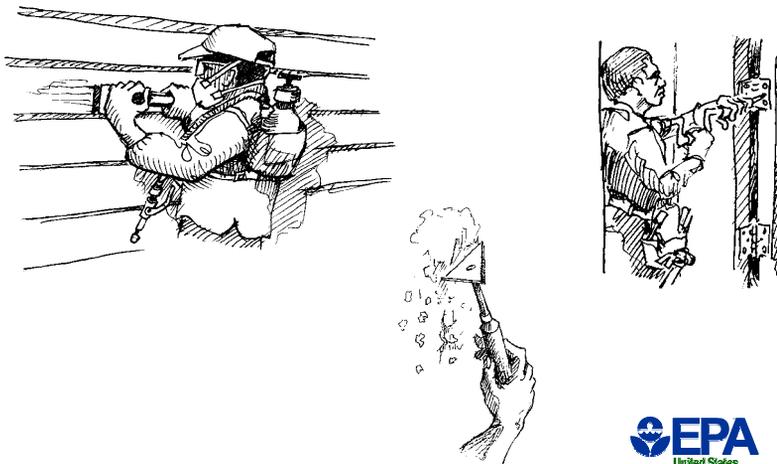
1-2

### 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
- What the government is doing about lead-based paint and what you can do to help

## How do we create dust?

---



6/11/03



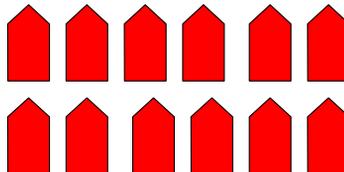
1-3

**Note the things that you commonly do during a job that create dust.**

## A little dust goes a long way . . .

---

- ◆ You can't see it
- ◆ It's hard to sweep up
- ◆ And it travels



**One gram of lead can  
contaminate several homes!**

6/11/03



1-4

### A little dust goes a long way.

- **You can't see it.** Even a floor that looks clean can have lead dust. Only a laboratory test can tell you for sure if an area is contaminated with lead.
- **It's hard to sweep up.** Normal cleaning methods will not pick up all the lead in a work area. Sweeping is not enough. You need to clean with water, detergent, and a HEPA-filtered vacuum to clean up effectively.
- **It travels.** Once the lead is released, it is easily tracked out of the work area. An exterior painting job can contaminate the inside of a home as the dust, chips, and leaded soil are tracked inside.

## Why Is Dust and Debris a Problem?

---

- ◆ **Dust and debris can contain lead**
- ◆ **Lead-contaminated dust and debris is poisonous**
- ◆ **Very 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**



6/11/03

1-5

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

- Pre-1978 paint may contain lead.
- Renovation, repair, and painting 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 lead dust or fume. More complicated tasks such as removing building components and demolishing walls also can create a lot of dust.

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

- A tiny amount of lead can be extremely harmful.
- 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.

### **Lead-contaminated dust is dangerous to children and adults**

- Lead particles in dust or fumes may be breathed or swallowed by children, residents, and workers.
- Through normal hand-to-mouth activities, children may swallow or inhale dust on their hands, toys, food, or other objects. Children may also ingest paint chips.
- Adults can swallow or breathe dust during work activities.
  - When workers perform activities such as scraping and sanding by hand or use a power sander or grinding tool, it creates dust. These particles get into the air that they breathe.
  - If workers eat, drink, smoke, or put anything into their mouths without washing up first, they may swallow lead.

## Health Risks of Lead

---

### ◆ 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, high blood pressure

6/11/03



1-6

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

- 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.
- In children, lead can cause:
  - Nervous system and kidney damage.
  - Learning disabilities, attention deficit disorder, and decreased intelligence.
  - Speech, language, and behavior problems.
  - Poor muscle condition.
  - Decreased muscle and bone growth.
  - Hearing damage.

### **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**

- Fertility problems in men and women.
- High blood pressure.
- Digestive problems.
- Nerve disorders.
- Memory and concentration problems.
- Muscle or joint pain.

# Lead Poisoning

---

## ◆ Lead poisoning does not always have obvious symptoms

- Symptoms are easily misdiagnosed, thus delaying effective treatment and increasing the likelihood of permanent physical and mental damage
- Only sure way to determine lead poisoning is to take a blood lead level (BLL) test.

6/11/03



1-7

## 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.
- We measure the amount of lead in blood by  $\mu\text{g}/\text{dl}$ , a very small unit of measurement. The Centers for Disease Control has designated  $10 \mu\text{g}/\text{dl}$  a "level of concern" but even lower levels may be harmful.

# What Is Lead-Based Paint?

---

### ◆ Lead-based paint is

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

### ◆ Why was lead used in paint?

- Primary pigment
- Added color
- Durability
- Drying agent
- Mildew inhibitor
- Corrosion inhibitor

6/11/03



1-8

## Lead-Based Paint

- Lead-based paint is any paint or other surface coating that contains lead equal to or greater than than 0.5 percent or 5,000 parts per million by weight or 1.0 milligram per square centimeter (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 health department 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.
- In addition to being added to paint, lead was added to all surface coatings.

## 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.

## 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

6/11/03



1-9

- Source of data in table above: HUD Report on the National Survey of Lead-Based Paint in Housing, 2001.

### Homes built in 1978 and earlier

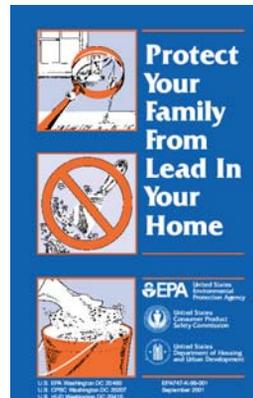
- Approximately 38 million pre-1978 housing units may contain paint that meets the Federal definition of “lead-based paint” (Source: HUD Report on the National Survey of Lead-Based Paint in Housing, 2001).
- Play it safe. You should assume that any house built in 1978 or earlier contains lead-based paint unless the house has been tested for lead and the results indicate that the house does not contain lead-based paint.
- Components most likely to have lead include windows and doors (interior and exterior) as well as outside walls and porches.

### 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 1950’s paint companies began to use less lead.

## What Is Being Done About Lead?

- ◆ **Ban in Residential Housing**
  - Lead-based paint was banned from residential use in 1978
- ◆ **Pre-Renovation Education Rule**
  - Contractors must distribute a pamphlet (See Appendix 5).
- ◆ **Disclosure Rule**
  - Buyers/renters receive information about lead in their homes
  - They can share this information with contractors



6/11/03

1-10

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

- This means that homes built after 1978 are unlikely to have lead-based paint in them. Some states may have banned it earlier.

### Pre-Renovation Education Rule (PRE)

- This EPA regulation requires that contractors distribute a lead hazard information pamphlet to residents of pre-1978 housing before they begin any renovation or remodeling activities. For copies of the required lead information pamphlet, *Protect Your Family from Lead in Your Home*, call the National Lead Information Center at 1-800-424-LEAD. Note: The pamphlet is available in English, Spanish, and Vietnamese.
- The PRE requires written acknowledgment from the client that he or she has received the pamphlet. Alternatively, the contractor can send the pamphlet by certified mail. Contractors should keep this documentation in their files.
- The PRE does not apply to non-residential dwellings, child-occupied facilities, dorm rooms, studios, or housing for the elderly.
- The PRE does not apply to jobs that involve less than 2 sq. ft. of paint per component.
- **Appendix 5** has additional information on the PRE, its requirements, and its exemptions.

### Disclosure Rule

- HUD and EPA's disclosure rule requires sellers and landlords to provide the same pamphlet that the PRE does (*Protect Your Family from Lead in Your Home*) and to tell prospective buyers and renters about any known lead-based paint and/or hazards in the dwelling. Because of the disclosure rule, your client may have some information about lead in his/her home. Ask for it.

# What Is Being Done About Lead?

---

### ◆ Worker Training

- EPA/state training and accreditation programs for abatement
- Lead Safe Work Practice Training (like this one) for renovation, repair, and painting.

### ◆ Worker Protection

- Worker protection standards

### ◆ Lead Hazard Reduction Initiatives

- Required actions in Federally-assisted housing
- Federal grant programs
- State and local initiatives

6/11/03



1-11

## Worker Training

- EPA has training requirements for people involved in lead abatement (i.e., the permanent removal of lead). This course does not qualify you to perform abatement.
- This training is one of several trainings on Lead Safe Work Practices. It trains you to work safely with lead in standard renovation jobs and it also qualifies you to work in Federally assisted housing or Federally owned housing being sold, as described below.

## Worker Protection

- OSHA has a lead in construction standard which outlines worker protection requirements. Your employer should be aware of these. For more information, visit [www.osha.gov/Publications/osha3142.pdf](http://www.osha.gov/Publications/osha3142.pdf).

## Lead Hazard Reduction Initiatives

- If you work in Federally assisted housing, certain actions are required to address lead hazards. In these cases, the workers must have proper training. See Appendix 3 for more information on the Federal requirements for worker training and lead hazard reduction in federally assisted housing.
- HUD has a grant program to state and local governments for funding lead hazard reduction activities.
- Check with your states and localities to find out if there are any local programs (which may be State or Federally funded) that are designed to address lead hazards.

## How Do I Work Lead Safe?

---

- ◆ **Follow the work practices shown during this training**
- ◆ **Plan your work using the chart in Appendix 1 to determine if Federal or State requirements apply to a job.**
- ◆ **Properties that receive housing assistance**
  - Ask the agency providing the assistance about lead safety requirements.
- ◆ **Jobs involving lead abatement**
  - Tell the owner that a certified lead abatement contractor must perform those activities.

6/11/03



1-12

### How do I work lead safe?

The rest of this course will discuss the practices you need to follow to work lead safe. Also see Appendix 1 for a helpful resource.

## Now You Know

---

- ◆ **Why we are concerned with lead-contaminated dust**
- ◆ **The health risks of lead to children and adults**
- ◆ **Some actions taken to address lead-based paint**

6/11/03



1-13

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 painting work practices.



---

## Module 2

# Set-Up Your Workspace to Contain Lead Dust

6/11/03



2-1

## Module 2 Overview

---

- ◆ **What is containment?**
- ◆ **Four steps for interior activities**
  - Special considerations for high dust jobs
- ◆ **Two steps for exterior activities**
  - Special considerations for high dust jobs

6/11/03



2-2

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

- Perform set-up techniques to contain lead dust and allow for easier clean-up at the end of the day and at the completion of the job.
- Identify appropriate set-up techniques for high dust jobs that may require additional containment.

### What is a high dust job?

- A working definition of a **high dust job** is one that creates dust and debris that will spread beyond five feet from the area that you are working on. Conversely, a **low dust job** is one in which dust and debris will not spread beyond five feet from the work area.
- In general, jobs that involve only a small work area create less dust than jobs that involve a larger work area. However, in addition to the size of the job, the work practices (e.g., sanding), and equipment (e.g., power sander) used will affect how much dust is created. So, for example, using a power sander without a HEPA-filter vacuum attachment on a two square foot area could be considered a high dust job. Using power tools equipped with HEPA filtered vacuum attachments will create less dust than using power tools without these attachments.
- Examples of high dust jobs include:
  - Hand-scraping large areas
  - Using power sanders (e.g., orbital, belt) without HEPA equipped vacuum attachments and shrouds
  - Using electric planer without a HEPA equipped vacuum attachment and shroud
  - Removing paint with a heat gun and scraper
  - Using circular or reciprocating saw
  - Removing dry residue and paint after using chemical strippers
  - Demolishing painted surfaces using hand or power tools
  - Removing building components with painted surfaces that are in poor condition

## What Is Containment?

---

- ◆ **Keeping lead-contaminated dust in the work area**
- ◆ **Benefits of containment**
  - Protects residents and workers
  - Easier clean-up at the end of the job

6/11/03



2-3

### What is containment?

- In general, there are many degrees of containment, ranging from simple plastic sheeting on the floor surrounding a small work area to a fully sealed dust room (discussed later in this module). Some types of containment are more effective than other types. For example, a drop cloth might be considered a form of containment by some, but because it is reusable and can trap and hold dust and paint chips, it can transport lead-contaminated dust from one job site to another. It is not an effective form of containment for working in homes with lead-based paint.
- For purposes of this training, “containment” is anything that stops lead-contaminated dust from spreading beyond the work area to non-work areas.

### Benefits of containment

- **Reduces the risk to you and residents.** Following the work area set-up suggestions of this module will protect you, your co-workers, and residents from the negative health effects of lead while remodeling, renovating, or painting. Reduced risk to you and co-workers is also dependent upon wearing proper personal protection equipment.
- **Easier clean-up.** The pre-work set-up process is essential to keeping lead contaminated dust within the work area where it can be easily cleaned. Proper containment of the work area helps to limit the areas you need to clean up after the job is complete. This saves time and money for clean-up.



#### **In pre-78 properties that receive Federal housing assistance, containment is required.**

Most work that disturbs paint in pre-1978 properties that receive Federal assistance, such as assistance from HUD or the U.S. Department of Agriculture Rural Housing Service, requires that containment be set up as show in this training. For work in these properties, use containment or check with the agency administering the assistance. Also check with the agency administering the assistance to find out if the occupants will be relocated during some or all of the work.

## Current Interior Set-Up Practices Spread Lead-Contaminated Dust



6/11/03

- ◆ Reusable drop cloth
- ◆ Furniture and household objects in the room
- ◆ Open doors and windows
- ◆ Broom or shop vacuum

***Do not use these practices when lead is present!***



2-4

### Current practice for interior set-up typically involves

- **A reusable drop cloth** is an improvement over not using any drop cloth, but it can carry dust from one job site to other job sites, and contaminate vehicles and storage areas. Some of the dust captured by a drop cloth falls to the floor when folding the cloth to carry away. However, some of the dust stays with the drop cloth. When it is used again it may contaminate the new (clean) job site with lead-contaminated dust.
- **Allowing furniture and household objects to remain in the work area** while the work is being performed. Lead-contaminated dust may fall and remain on these furnishings and objects after the job is completed. Residents could easily come into contact with the lead-contaminated dust on them and get poisoned.
- **Allowing residents access to work area** while the work is underway. The residents are then exposed to the lead-contaminated dust and can track the dust to other parts of the building where it could linger. Again, residents could easily be exposed to the lead-contaminated dust on the furnishings and get poisoned.
- **Open windows and doors** allows lead dust to float into other parts of the building or over onto neighboring property.
- **Brooms and shop vacuums are typically used to clean up.** Both clean-up methods capture some dust, but shop vacuums especially can put more dust into the air than they clean up if the filters are dirty or inadequate. Vigorous sweeping may also put a lot of dust into the air. To be effective, containment must be practiced even when cleaning up after the job.

## Overview of Interior Set-Up Steps

---

- ◆ **Step 1: Limit access**
- ◆ **Step 2: Cover belongings that can not be moved**
- ◆ **Step 3: Cover floors**
- ◆ **Step 4: Close windows, doors, and HVAC system**
- ◆ **Special consideration for high dust jobs**

6/11/03



2-5

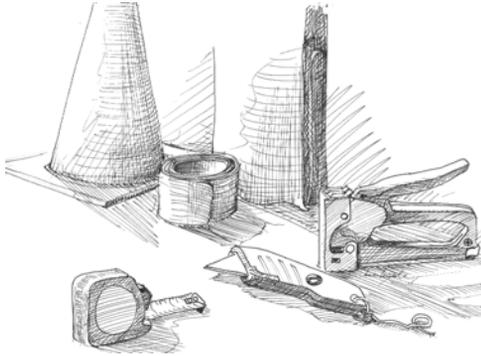
### Overview of interior set-up steps

- Details for these steps are on the following several pages. These four steps will help contain lead dust to the work area for interior jobs.
- See page 13 in the *Lead Paint Safety Field Guide* for additional information. Appendix 1 contains a copy of the text from the *Lead Paint Safety Field Guide*.

## Set-up Toolkit

---

- ◆ Barriers and signs
- ◆ Coverings for furniture, fixtures, plants, or outdoor play areas
- ◆ Other set-up containment items



6/11/03

2-6

## Typical items for work area set-up to contain lead-contaminated dust

### Barriers

- Rope or other barrier
- Tape (bright color preferable)
- Saw horses
- Orange cones or other similar marker
- Signs

### Coverings for Furniture, Fixtures, Plants or Out door Play areas

- Duct tape, painters tape, or masking tape
- Stapler
- Heavy plastic sheeting
- Utility knife or scissors
- Disposable mesh materials such as burlap, cheesecloth, or landscaping mesh

### Other Set-Up Containment Items

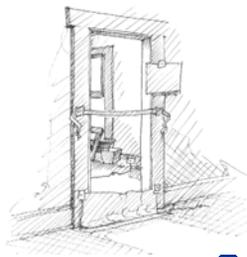
- Tack pad (sticky pad for walking on to remove dust from soles of shoes)
- Small disposable towels or wipes
- Misting bottle

**Ask your trainer if you have questions about where to find these supplies.**

## Interior Set-Up Step 1: Limit Access

---

- ◆ Instruct residents to stay away from work area
  - ◆ Do not allow small children (under 6 years) or pets near work area
  - ◆ Place a barrier or tape across entrances
  - ◆ Post a sign
- ◆ Do not allow eating, drinking, or smoking in the work area



6/11/03

2-7

### **Restrict access to the work area and ask residents to stay away while work is underway**

- Restricting access to the work area will avoid unnecessary exposure of residents, especially children, to lead dust and minimize its spread to non work-areas.
- Before the job starts, tell the residents to stay away from the area as much as possible. Residents and pets coming and going can easily track lead-contaminated dust throughout the home and into areas that are not being worked on and therefore to areas that are unlikely to be cleaned up promptly.
- This is especially true for small children under six years old. Be sure to explain to residents that this is for their own protection and that small children are most at risk of health problems from exposure to lead.
- You may need to provide an indication of how long you will be working in a particular area so that residents can plan ahead to obtain items that they may need before you begin working.
- Post a sign instructing people to stay out of the work area.
- The sign should be in the residents' native language if possible.

### **Place a barrier across entrances**

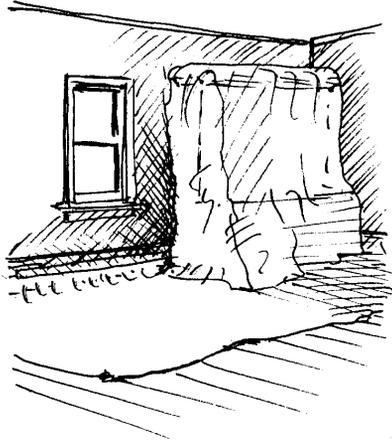
- A physical barrier, such as a cone or masking tape, should be placed across doorways to remind residents to stay away, especially in buildings where more than one family lives. The barrier serves as a reminder to residents that people and pets should not enter the work area, and also signals that the area has not yet been cleaned up.

### **Do not allow eating, drinking or smoking in the work area**

- This is primarily a protection for workers, but is also important if residents are living in or near the work area. Post signs that prohibit eating, drinking, or smoking in the work area. Dust in the air can land on food or be breathed when smoking. If food is set on an unwashed surface, it can easily pick up lead-contaminated dust, which is swallowed when eating the food.

## Interior Set-Up Step 2: Remove and Cover Belongings

---



6/11/03

- ◆ Remove belongings
- ◆ Cover furniture and objects in protective sheeting
  - Furniture
  - Carpet
  - Lamps, pictures, and other fixtures



2-8

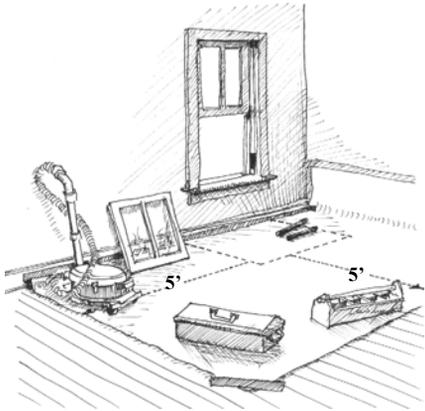
### Remove belongings

- For low-dust jobs, removing small items and covering furniture should adequately protect residents belongings. For high-dust jobs, see Page 2-11.

### Cover furniture and other objects in the room with protective sheeting

- Cover all objects that were not removed from the room in protective sheeting. Completely cover all non-movable furniture, carpets, and other personal items with protective sheeting. Secure the protective sheeting to the floor with tape so that no dust can get onto the covered items. Optimally, everything should be removed.
- Protective sheeting such as heavy duty plastic sheeting is commonly used in many remodeling jobs. Protective sheeting can be bought at many hardware stores.
- If it is a high-dust job, remove all furniture from the work area.

## Interior Set-Up Step 3: Cover Floors



6/11/03

### ◆ Cover floors with protective sheeting

- At least five feet on all sides of work area
- 2nd smaller layer if using chemical strippers
- Place a tack pad at edge of protective sheeting, lay protective sheeting on frequently used walking paths to outdoors and bathrooms



2-9

## Cover Floors

- Use protective sheeting to cover the floor. The protective sheeting should extend at least five feet to the left, right and front – and in some cases to the back – of the work area. It should be tightly secured to baseboard or flooring using duct tape, painters tape, or masking tape. The corner edge of the protective sheeting should be reinforced using duct tape or a staple.
- A second smaller layer of protective sheeting should be used with chemical strippers. This second layer should be taped to the top of the first layer. Place the second layer immediately below the work area. This layer will capture any waste and aid in cleaning up.
- Tools that are used frequently should be left within the work area throughout the job to avoid tracking dust to non-covered areas.
- Consider covering shoes with removable shoe covers, wiping off the tops and soles of shoes with a damp paper towel each time you step off the sheeting, or using a “tack pad” that removes dust from the soles of shoes. Immediately place used paper towels in a covered garbage bin. A tack pad can be found at most hardware stores or bought through a supply catalog; it is a sticky pad that you walk on to remove dust from the soles of your shoes. The tack pad can be taped to an outer corner of the sheeting.

## Interior Set-Up

### Step 4: Close Windows, Doors, HVAC

---

- ◆ Close all windows and doors
- ◆ Close and seal HVAC vents

6/11/03



2-10

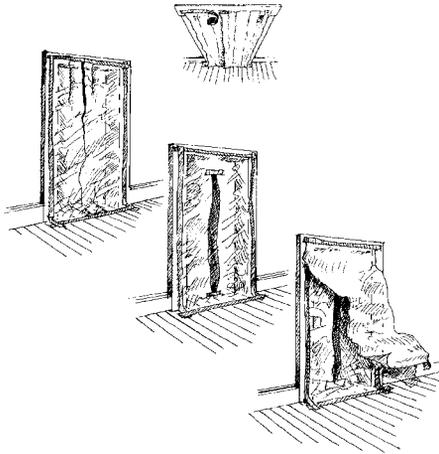
### Close and cover windows and doors

- Close windows (if no work is being done on the window) and doors, including closet and cabinet doors in the work area.
- For higher dust jobs, seal windows with protective sheeting to prevent dust from getting into the trough or on sill.
  - Cut plastic sheeting layer slightly larger than the window that you are covering.
  - Attach the plastic sheeting with tape over the window to completely seal it.
  - Make sure that the tape or the sheeting does not cover part of the area that you are working on.

### Close and seal HVAC vents

- Heating ventilating and air conditioning (HVAC) systems distribute air throughout the building and thus can allow dust to move to other rooms. Close the HVAC supply and return vents in the work area and then cover them tightly with plastic sheeting to prevent air from blowing the dust out of the contained work area and to prevent dust from getting into the HVAC system.

## Special Considerations for Interior High Dust Jobs



6/11/03

- ◆ Remove furniture, fixtures and belongings from work area
- ◆ Cover door openings with a 2 layers of protective sheeting to form an “airlock”
- ◆ Close and cover HVAC vents



2-11

### Remove rugs, draperies, and furniture from the work area when completing a high dust job

- Before starting work, request that the homeowner remove furniture and fixtures from the room. This will prevent lead-contaminated dust from getting into these items.

### Cover door openings with a 2 layers of protective sheeting

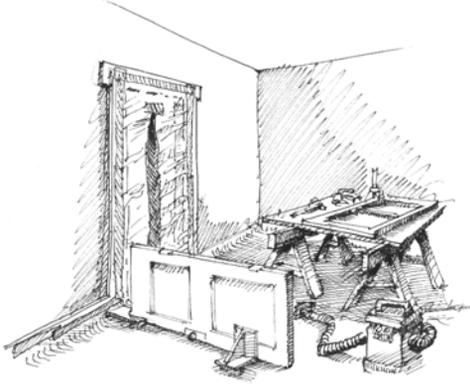
- Covering the door with this two-layer system will contain the dust within the work area. Follow the steps below:
  - 1) Cut first plastic sheeting layer slightly wider and longer (three inches) than door frame.
  - 2) Make small “s” fold at the top of sheeting and tape to top of door frame. Make a similar “s” fold at the bottom of the sheeting and tape to flooring. This will ensure that the plastic is not taut. Staple top corners for reinforcement.
  - 3) For exiting and entering the room, cut a long vertical slit in middle of protective sheeting; leave six inches at top and bottom uncut. Reinforce the top and bottom of the slit with tape to prevent the plastic from tearing.
  - 4) Tape a second layer of protective sheeting to top of door frame. This layer is cut slightly shorter than door frame so that it will hang down flat against the first sheet of plastic.
  - 5) Tape and staple top corners of second layer to door frame and first layer. Leave hanging over first layer.
- See Page 46 in the *Lead Paint Safety Field Guide* for more information on how to put the two layer system in place.

### Close and seal HVAC vents in the room

- If possible, turn off the HVAC system for work area. The vents should then be closed and covered with cardboard and protective plastic sheeting. After the work is complete the vent covers should be removed and washed. All filters for the HVAC system should be changed after any work that disturbs lead-based paint.

## Special Considerations For Interior High Dust Jobs

---



6/11/03

- ◆ For work on removable objects that create lots of dust
- ◆ Select a room that can be easily closed off
  - Follow Steps 1 through 4 for interior set-up
  - Follow the procedures for high dust jobs



2-12

### **Consider setting up a work room (“dust room”) for high dust-generating work on components that can be moved out of their original room and into the dust room.**

- A dust room prevents the spread of lead-contaminated paint and dust to non-work areas and also makes clean-up easier.
- Use this technique for high dust activities, for example, planing and scraping doors or window sashes where you are maintaining the original windows.
- Set up a dust room if work is being done on components in a room that residents must have access to, such as the kitchen. Rather than keeping the resident out of the kitchen, remove the components to the separate dust room and complete surface preparation there. After preparation is complete, the components can be returned to the kitchen.
- You may also consider taking components off-site to work on them.

### **Select a room that can be easily closed off from the rest of the home to use as a dust room.**

- A dust room can be any room that can be closed off. Residents should not have to enter this space for the duration of the job. For example, a spare bedroom or other unused room that residents do not need to access during the time that the work is being performed. It should not be carpeted.
- The dust room should be close to the work area, if possible.
- Follow the four set-up steps for all work with minor modifications or additions: 1) limit access, 2) remove furnishings, 3) cover the floor, 4) seal windows, doors, and HVAC vents.
- Workers should wear protective clothing, NIOSH approved respirators (e.g., N-100), and safety goggles.
- Plan your work so that necessary supplies and equipment are in the room to minimize the number of trips outside the room while work is being performed.
- See Page 14 in the *Lead Paint Safety Field Guide* for more information.

## Current Exterior Set-Up Practices Spread Lead-Contaminated Dust

---



- ◆ Ground uncovered
- ◆ Reusable drop cloth
- ◆ Paint chips
- ◆ No barriers
- ◆ Windows and doors open

***Do not use these practices when lead is present!***



6/11/03

2-13

### Current practices for exterior set-up

- **Leaving the ground uncovered** allows lead contaminated dust to get into the dirt, washed into storm drains, and into nearby play areas.
- **Covering with reusable drop cloth.** Similar to the problems associated with using a reusable drop cloth for interior jobs, a reusable drop cloth for exterior jobs can carry dust from one job site to other job sites. Some of the dust captured by a drop cloth falls to the floor when folding it to carry away. However, some of the dust stays with the drop cloth to the next work site, thus potentially spreading lead-contaminated dust to a new work site.
- **Small paint chips** and piles of dirt are often overlooked. This poses a considerable hazard to small children.
- **Residents and passers-by usually have unlimited access to area.** Similar to interior work, residents and passers-by may come into contact with lead-contaminated dust and breathe or swallow it.
- **Windows and doors are left open** and may allow lead contaminated dust to enter the house.

## Overview of Exterior Set-up Steps

---

- ◆ **Step 1: Establish work area**
- ◆ **Step 2: Close windows and doors**
- ◆ **Special considerations for high dust jobs**

6/11/03

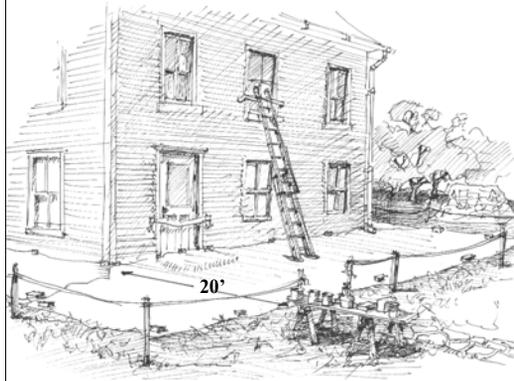


2-14

### Two steps for exterior set-up to contain lead dust

- Details for these steps are on the following two pages. These two steps will help contain lead dust to the work area for exterior jobs. These steps may be modified for high dust jobs.
- See page 22 in the *Lead Paint Safety Field Guide* for more information.

## Exterior Set-Up Step 1: Establish Work Area



6/11/03

- ◆ **Cover the ground with protective sheeting**
  - If space permits, extend at least 10 feet from work area
  - Cover nearby vegetable gardens and children's play areas
- ◆ **Limit work area access**
  - Establish a 20 foot perimeter around work area if space permits



2-15

### Cover the ground with protective sheeting

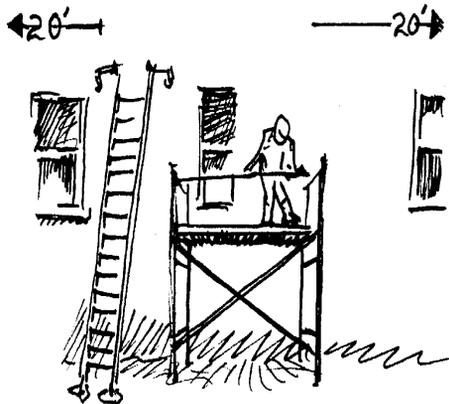
- If space permits, lay protective sheeting on the ground below the work area to at least 10 feet from the house. This creates a visible work area and helps remind residents and passers-by that they should not enter the work area unless they have a compelling need. Note: Plastic sheeting can kill plants.
- **Cover grass, shrubs, and gardens with a disposable mesh material** such as landscape fabric or burlap. Landscape fabric is an inexpensive plastic mesh that is often used by landscapers. It can be found in many plant nurseries or hardware stores. This covering will protect the soil and plants from lead contamination. Remember children often play in the dirt and may put their hands in their mouth while playing. Any dirt on their hands will go into their mouths and may be swallowed.
- **Remove toys and other items from work area** and cover all play areas including sandboxes.
- **Staple or tape the protective sheeting to the wall** of the building, or use a 2x4 wrapped in protective sheeting to hold the material next to the wall. Use heavy objects (e.g., rocks) to weight the other edges of the protective sheeting to the ground so that it won't blow in the wind.
- **When using ladders on plastic sheeting** consider placing a sturdy piece of plywood on the plastic and then setting the ladder on the plywood. This will prevent the ladder from puncturing the plastic and also will provide a stable surface for the ladder.

### Limit work area access

- Limit access to work area by placing orange cones, saw horses, or tape around a 20 foot perimeter of the work area. This will help to discourage residents and passersby from entering the work area.

## Exterior Set-Up Step 2: Close Windows & Doors

---



- ◆ Close nearby doors and windows within 20 feet of the work area

6/11/03



2-16

### Close and cover windows and doors

- All windows and doors within 20 feet of the work area should be closed to prevent dust from entering the home. Consider requesting that the neighbors also close their windows and doors.

## Special Considerations For Exterior High Dust Jobs

---

### ◆ For high dust jobs:

- Cover doors and windows with protective sheeting
- Use the two-layer protective sheeting system to cover the door
- For multi-story jobs, attach protective sheeting to scaffolding to cover house entrance

6/11/03



2-17

### Cover windows and doors with protective sheeting

- For high dust jobs, close, lock, and seal windows and doors with protective sheeting. Follow the procedures for sealing doors and windows that were described earlier for interior high dust jobs.
- Entrances that must be used while work is underway should be protected with a covering when performing high dust jobs. Either place the 2-layer protective sheeting flap system over the entrance or cover the entrance with protective sheeting that is attached to scaffolding.
- If working with water, consider using landscaping mesh on the ground as described on the previous page.
- Be aware of wind conditions. On high wind days, it is not advisable to perform dust creating activities.

## Exercise: Setting Up

---

- ◆ Work in groups of 2 or 3
- ◆ Choose the right tools and materials
- ◆ Set up the work area designated by the trainer
- ◆ You have 15 minutes

6/11/03



2-18

## Setting Up

This exercise gives you a chance to practice setting up. The slide provides basic instruction.

- Make groups of 2 or 3.
- Your trainer will assign you an area to set up for a job.
- Choose the right tools. Set up the work area to provide proper containment.

## Debrief: Setting up

---

- ◆ How did it go?
- ◆ What were some of the hard parts?
- ◆ What would you do differently for a larger job?
- ◆ A high dust job?

6/11/03



2-19

### Setting Up – A debrief

Consider the questions above. Discuss as a large group.

Your trainer will demonstrate some techniques.

## Now You Know

---

### ◆ How to set up for a job

- Interior containment
- Exterior containment
- High and low dust jobs

6/11/03



2-20

**Now you know how to set up for a job.** In the next module, we will discuss lead safe work practices during the job.