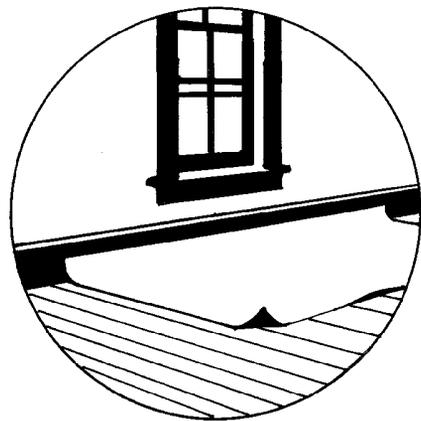


Lead-Based Paint Maintenance Training Program



Work Smart, Work Wet, and
Work Clean to
Work Lead Safe!

2003 Revised Edition
Instructor Manual



Originally Prepared by the
National Environmental Training Association
under a grant from the
U.S. Environmental Protection Agency and
U.S. Department of Housing and
Urban Development.

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Attachments:

1. Skills Assessment Checklist For Exercise

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Foreword

Scope of Training Program

This training program presents the procedures for minimizing lead dust generation and soil contamination during maintenance activities, as defined by the United States Environmental Protection Agency (EPA) and the United States Department of Housing and Urban Development (HUD). If these procedures are correctly implemented, the risk of lead exposure to maintenance personnel, children, residents, and the families of maintenance personnel can be minimized.

This training program does not train maintenance workers to do lead abatement. In addition, it does not fully discuss the employer's responsibility for worker health and safety. For example, topics that are not covered are:

- Exposure Assessment
- Respiratory Protection
- Medical Surveillance
- Lead-Based Paint Inspection or Risk Assessment
- Any applicable training required by OSHA 29 CFR 1910 and 1926 General Industry Standard and Lead in Construction Standard.

Students receive a manual that includes copies of slides and explanatory text. Students also receive a copy of the planning tool.

Qualifications of the Instructor

The instructor delivering this training program should have first attended this program in its entirety through a separate training provider. The instructor should have previous training experience or attend a train-the instructor course and should have additional lead-related experience and training.

Qualifications of the Maintenance Manager

The person in charge of maintenance jobs involving lead-based paint should have extensive work experience in maintenance and/or construction in addition to this training course. This background is necessary to answer the questions posed in the Planning Tool discussed in Module IV, and to make informed decisions regarding the selection of the proper equipment and procedures for each type of maintenance job.

Acknowledgments

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In particular, HUD would like to thank the following people who reviewed this edition and provided valuable feedback.

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Ms. Betty Weiner, Chemical and Management Division, EPA Office of Prevention, Pesticides and Toxic Substances, served as the Project Officer. **Mr. David Jacobs** and **Ms. Carolyn Newton** served as HUD's technical representatives for the project.

Carol L. Kinias, NETA Director of Training, managed and coordinated the project. Oversight management was by NETA's Executive Director **Charles L. Richardson**. The Training Guide was written by **Joan Ryan**, CET, of The Aulson Company, Inc., Middleton, MA; **Carol Kefford Eschelman**, CET, Group CK, Baltimore, MD; and **Carol J. Kinias**. The video was produced by NETA's Director of Media Services, **Pam Chase** and written by **Grant Williams**. **John Zilka**, Applied Systems Inc., Aliquippa, PA, developed the Planning Tool and served as primary technical consultant for the project. Instructional specialist was **Doris Adler**, National Asbestos and Environmental Training Institute, Ocean, NJ. **Geny Dombek** of Pro Design Graphics, Phoenix, AZ, created the graphics and desktop published the Planning Tool and the Training Guide.

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Introduction

Introduction

About This Course

This course was developed for the U.S. Department of Housing and Urban Development (HUD) and the U.S. Environmental Protection Agency (EPA). It is designed for maintenance supervisors and staff at multifamily rental properties built before 1978 that contain or may contain lead-based paint. This course meets the lead safety training requirements specified in HUD's Lead Safe Housing Rule (24 CFR Part 35).

This course was initially developed based on the recommendations of The Task Force on Lead-Based Paint Hazard Reduction and Financing. This national Task Force included representatives of the real estate, rental housing management, lending, insurance, and contracting industries, as well as advocates for affordable housing and lead poisoning prevention and staff of federal, state and local agencies. The Task Force's goal was to address the causes of childhood lead poisoning in residential housing. As part of its final report, the Task Force specifically mentioned the need for training for maintenance personnel in multifamily housing.

In the Fall of 1995, the National Environmental Training Association (NETA) received a grant from HUD and EPA to prepare a one-day curriculum and training materials on lead-based paint hazards for maintenance personnel. The following resources were developed and released in 1997.

- ❑ A Training Guide for those conducting the training,
- ❑ An interdependent Lead-Based Paint Maintenance Training Video that presents and reinforces main concepts of the training, and
- ❑ A Lead-Based Paint Maintenance Planning Tool for use by maintenance personnel during the training and on the job.

Since that time, HUD has published the Lead Safe Housing Rule (24 CFR Part 35) that requires training for individuals performing maintenance, paint stabilization, interim controls, and standard treatments in Federally-assisted housing. HUD approved this curriculum as one of several that meets the training requirements for the Rule.

In 2002, this curriculum was revised to incorporate advances in our knowledge of and techniques for addressing lead-based paint hazards. This new course also includes new information

on HUD requirements and an optional “hands-on” module for practicing the work techniques discussed in the course.

This curriculum is designed to enable professional training providers, maintenance supervisors, and others who have appropriate skills and experience to train workers at their sites. It helps workers and supervisors understand their role in preventing lead exposure in children, themselves, their co-workers, and residents of the dwellings they maintain. The Training Guide contains factual information on lead-based paint hazards. It also contains suggested methods for course delivery.

Individuals who successfully complete this course may elect to be listed as Lead Safe Workers by the Leadlisting at www.leadlisting.org.

**Notes to
Instructor**

Notes to Instructor

Program Design

Instructor Materials

The Instructor materials include this training guide, overhead slides (both electronic and hard copy), a video and a planning tool.

Training Guide

The **Lead-Based Paint Maintenance Training Course** contains information about procedures for minimizing and preventing exposure to lead-based paint hazards. It also suggests the best means of presenting this information, including training exercises and training aids.

It is divided into ten modules:

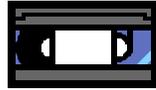
- I. Maintenance Work and the Health Effects of Lead Exposure
- II. Lead-Based Paint Hazards
- III. Lead Safety — Materials and Work Practices
- IV. Planning Lead-Based Paint Maintenance Jobs
- V. Doing Lead-Based Paint Maintenance Jobs
- VI. Optional Hands-On Exercises: Practice What You've Learned (optional)
- VII. Clearance: Making Sure the Job is Complete
- VIII. Regulatory Overview for Workers in Federally-Assisted Housing
- IX. Addressing Lead in Your Maintenance Program
- X. Taking this Message Home: Working Lead Safe Everyday

Modules I thru V teach what to do. Module VI offers participants the opportunity for hand-on practice in what they have learned. Modules VII thru X review clearance and regulations with an emphasis on incorporating lead safely in their maintenance programs.

Overhead Slides

Overhead slides highlight the key points covered by the course. Copies of the overhead slides are featured in this training guide

in the left column, across from the explanatory text. The overhead slides are provided electronically so that they can be loaded on a computer and shown with an LCD projector. They are also provided in hard copy so that they can be photocopied onto transparencies and shown using an overhead projector.



Video

The **Lead-Based Paint Maintenance Training Video** is designed to reinforce key messages and to motivate maintenance personnel to think about and use simple steps to prevent exposure to lead. It uses real life situations, step-by-step demonstrations, and humor to say, “The key to reducing lead exposure to yourself and those around you is using lead safe work practices.”

Lead-Based Paint Maintenance Planning Tool

The **Lead-Based Paint Maintenance Planning Tool** is designed to assist maintenance personnel to make decisions on the job to minimize exposure to lead-based paint hazards. It uses pictures to help workers learn even if they do not read English well.

Each attendee is to receive one copy of the **Planning Tool**. It may be photocopied. It is for use during the training and on the job upon completion of the training.

Student Materials

Students receive a student manual, similar to this Training Guide. It includes copies of the slides and the accompanying explanatory text but does not include the instructor notes (which appear in the Training Guide in shaded boxes). Students also receive a copy of the planning tool.

Instructor Guidelines

If you think of the instructors you have had in the past, you will probably remember those who stood out as rare instructors — the ones who motivated students and stimulated learning. Others, though they may have been knowledgeable, were unable to create a true learning experience for their students. The purpose of this section is to help you become one of the exceptional, effective instructors.

Adult Learners

To be effective, you need to motivate your students. Adults learn best when the instructor shares information with students as a partner in learning.

Adult learners usually like to:

- Understand the objectives for the class;
- Actively participate;
- Apply new material to what they already know;
- Solve problems;
- Receive respect from the instructor;
- Discover the answers themselves;
- Practice to reinforce learning; and
- Experience varied presentations, to learn by hearing, seeing and doing.

Instructor's Tips

Instructor's Tips are included throughout the manual. These include additional information, suggested questions, or thoughts on how to present the material. These tips are placed in shaded boxes throughout the manual.



Points that are important and should be emphasized are marked with an exclamation point in a triangle.

Classroom Presentation

Delivering your message involves a range of skills that deal with how you present the information and how you relate to your students — a combination of informing, motivating and entertaining.

Use the following information to help you present this training in the best ways for your students to learn.

Presentation Skills

The way to become a truly effective instructor is through practice. Before delivering this training, be sure to rehearse privately and in front of your family, friends, or fellow workers. Ask them to coach you. It is essential that you understand what you are teaching and how to communicate the information to the students.

You will probably experience some nervousness as your presentation approaches. It might help you to know that most Americans report feeling apprehensive about public speaking. Stagefright is a normal response that can actually be used to your advantage — you can transform that nervous tension into enthusiasm and energy.

Your most effective presentation style is to speak conversationally. Just be yourself, treat your students with respect, and allow time for them to participate. The overheads and the other instructor materials cover the topics that the class must learn.

A crucial component of an effective presentation is organization. Listeners should be able to follow your main points and have a sense of where you are in the talk. Use the overheads, flip charts, video, etc. to help your students focus.

When introducing and facilitating group activities:

- Be clear about objectives and instructions;
- Explain why you are doing the activity;
- Let participants know how much time they have; and
- Allow time for discussing the activity.

Don't be afraid to say, "I don't know" if someone asks a question you can't answer. If no one in the class knows the answer, tell the student you will find the answer to the question after class, and will communicate the answer.

Set the tone of the sessions. You should create an atmosphere that is relaxed, friendly, informal, and helpful rather than one that is overly rigid and stiff. Encourage participation right from the start by asking questions and getting everyone involved in discussion. Let students know that they are welcome to ask questions and suggest that they will get more out of the training if they participate.

Learner Participation

Instructors should involve students at every opportunity during the training. While lecture is sometimes necessary to provide information, adults usually learn a subject much better if they can take part in the learning process. In fact, adults enjoy participating.

The discussions and exercises in this training are designed to encourage group participation. When lecture is the primary means of presentation, include students by asking for questions and comments. This training will be most successful if everyone contributes.

Training Checklist—Ways to Involve Students

The following is a list of ways to involve your students when you prepare to deliver this training:

- Explain the purpose and importance of the session.
- Review the agenda with the participants.
- Treat participants with respect.
- Speak clearly.
- Use natural facial expressions and gestures to reinforce your message.
- Move around the room during lectures.
- Make eye contact, smile, and nod naturally.
- Vary voice tone and volume.
- Allow time for questions.
- Show enthusiasm.
- Use appropriate humor to maintain rapport.
- Vary your presentation with lecture, discussion, video, etc.
- Give participants choices (for example, working alone or in groups for some exercises).
- Encourage student participation.
- Ask the participants to answer questions and give comments, e.g. “What would you do?” or “What equipment would you suggest?”
- Use exercises so participants practice using what they are learning.
- Encourage discussion.
- Cover all the material.
- HAVE FUN!

Prior to Training Day

Plan the Delivery for Your Audience

Before you deliver a session, you need to know your audience and their learning needs. Review the participant list and confirm with the primary client the goals of the participants. Also review the proposed course agenda (provided on p. 13-14).

- If participants are taking the course specifically to meet the lead safety training requirements of HUD’s Lead Safe Housing rule, you must cover Module VII (on clearance) and Module VIII (on Requirements for HUD-assisted Housing). You must also administer a test at the end of

the session and keep records of student performance. **See the test materials, provided as an attachment to this curriculum for guidance on how to administer and grade the test.**

- If participants do not need to meet any state or Federal training requirements, then Modules VII and VIII and the test are optional. Please note that Module VII (on clearance), while optional, is highly recommended.
- If participants seek hands-on instruction, Module VI (Exercises) provides appropriate exercises. If you plan to include this hands on module preparation of a simulated deteriorated lead-based painted surface and assembly of supplies and equipment are required. Please see Module VI. While hands-on practice is not required, it is highly recommended to reinforce the work techniques that are taught in this course.

Check Materials

- I. Verify that all of the following items are included in your training package:
 - This Training Guide
 - Attachments listed in the Table of Contents
 - A copy of the Lead-Based Paint Maintenance Planning Tool
 - The Lead-Based Paint Maintenance Video
- II. Have one copy of the Planning Tool for each student.
- III. Order one copy for each student of “Protect Your Family From Lead in Your Home” from the National Lead Information Center at 1-800-424-LEAD. This document is available in three languages: English, Spanish and Vietnamese.

Thoroughly review all the training materials. As you go through the **Training Guide**, follow the viewgraphs and the **Planning Tool**, and watch each **Training Video** segment as it is introduced.

Gather Equipment

Gather the following training equipment:

- An overhead projector or LCD projector
- A VHS video player and monitor
- Blank transparencies (optional)

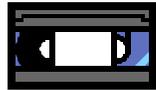
- Transparency pens (optional)
- Pens/pencils
- Scrap pieces of paper
- Flip chart and markers (optional)
- Blackboard (or grease board) with writing supplies (optional)

Gather materials and equipment to show and use for exercises:

- Poly film
- Tape
- All-purpose cleaner
- Rags
- Poly bags
- Towelettes/hand wipes
- Tack pads
- String mop heads
- Spray mister
- Stapler
- Scrapers
- Utility knife
- Broom
- Dust pan
- HEPA filtered vacuum
- Signs/barrier tape
- Mop handles (including self-wringing)
- Buckets (double-sided and single)
- Mini containment
- Protective eye wear
- Coveralls
- Latex/rubber gloves
- Disposable cotton gloves
- Disposable/recyclable clothing
- Respirator with HEPA filter

If an overhead projector is not available, then both the viewgraphs and students' responses can be written on a board or flip chart.

- Copy viewgraphs onto transparencies. This can be done on most copying machines.
- Copy hand outs and exercise sheets.



Prepare Video

Rewind the video so that when it is shown to the class it starts at the beginning.

Training Room Checklist

- Is the room isolated enough to minimize interruptions?
- Is the temperature cool?
- Can you adjust the lighting for different visual aids?
- Are there enough chairs?
- Are the chairs comfortable?
- Are there writing surfaces for the students?
- Are the tables and chairs or desks set up so participants can see and work together?
- Can everyone see the screen?
- Are coffee and other refreshments available?
- Do you have all audio-visual equipment you need (including extension cords, spare bulbs, etc.)?
- Have you practiced using the AV equipment? Does everything work? Is it in focus?
- Do you have flip charts, markers, etc.?
- Is there adequate space for hands-on exercises, if they are to be performed?

Training Day

Now that you've practiced and prepared thoroughly, you're ready to begin your training session.

Be the first person in the training room. Meet and greet trainees as they arrive. This helps you establish a friendly, informal rapport with trainees and shows them you care enough about the program to get there first.

Use the names of trainees whenever possible. Using first names builds rapport and communicates that you are interested

in each class member as an individual. Have everyone wear name tags or put “name tents” at their places to help them work together.

Involve students immediately. Explain what they need to know, why it’s important, and how they’ll be able to apply their knowledge on the job. If employees are required to attend the session, you must convince them why they need this training to do their job before they will learn. Grab their attention as soon as you can by answering the trainees’ question, “Why is this training important?”

Let people know what to expect during the session.

Provide a road map of what will be covered, an explanation of classroom rules (such as no smoking), and a discussion of class length, break times, restroom locations, and other logistics.

Establish credibility during the opening segment of the session. Trainees’ perception of your credibility is influenced as much by how you represent information (style) as it is by what you actually convey (content). To establish credibility:

- Be prepared and know your material;
- Find a common ground or communicate shared interest with trainees;
- Project sincerity, confidence and competence;
- Use relevant evidence to support your points;
- Structure your talk to make the organization apparent;
- Maintain eye contact with trainees;
- State directions with confidence and credibility, e.g., “Apply the label like this,” rather than “I think this might be the way to apply the label,” and
- Use inoffensive humor when appropriate.

Learning Objectives

The learning objectives are the backbone of the course design. They are listed here and again at the beginning of each section. They are a guideline for you. It is not necessary to read them at the beginning of each section, but they should be discussed.

Module I—Maintenance Work and the Health Effects of Lead Exposure (45 minutes)

Upon completion of this training unit, maintenance personnel should be able to:

- Describe the effects of lead exposure in both children and adults.
- Identify two ways lead enters the body in children and adults.
- Describe and explain the importance of the two roles of maintenance personnel in preventing lead exposure.

Module II—Lead-Based Paint Hazards (30 minutes)

Upon completion of this training unit, maintenance personnel should be able to:

- Explain where lead-based paint may be found.
- Define “lead-based paint hazard.”
- Locate and identify the various lead-based paint hazards commonly found in a dwelling unit.
- List the two approaches to addressing lead-based paint hazards.
- Describe ways to maintain lead-based paint so that it does not become a hazard.

Module III—Lead Safety — Materials and Work Practices (60 minutes)

Upon completion of this training unit, maintenance personnel should be able to:

- Discuss the need to notify and protect residents.
- Recognize materials, equipment and personal protective clothing used on lead-based paint maintenance jobs.
- Recognize proper work practices that minimize dust.
- List five prohibited work practices.
- List five unsafe work practices.
- State the importance of thorough cleaning of the work area, proper personal hygiene, and personal decontamination.

Module IV—Planning Lead-Based Paint Maintenance Jobs (60 minutes)

Upon completion of this training unit, maintenance personnel should be able to:

- Plan a lead-based paint maintenance job.

- Recognize an activity as either low risk or high risk.
- Choose appropriate materials and equipment for the job.
- Choose appropriate personal protective clothing and equipment for the job.

Module V—Doing Lead-Based Paint Maintenance Jobs (80 minutes)

Upon completion of this training module, maintenance personnel should be able to:

- Explain lead safe work practices: Work Smart, Work Wet, Work Clean.
- Use cleanup procedures for low risk and high risk jobs.
- Use steps to remove carpet.
- Explain decontamination of self and equipment.
- Complete a quality assurance checklist.

Module VI — Optional Hands-On Exercises: Practice What You've Learned. (60 minutes)

Upon completion of this training module, maintenance personnel should be able to:

- Use the planning tool to plan a job.
- Set up the worksite for a lead safe job.
- Use lead safe work practices.
- Clean-up the worksite.

Special note: *Module VI is optional, but highly recommended for all audiences.*

Module VII — Clearance: Making Sure the Job is Complete (10 minutes)

Upon completion of this training module, maintenance personnel should be able to:

- Explain the basic steps involved in clearance testing.
- Explain how clearance testing affects their job performance.

Special note: *Module VII is required for audiences that must comply with HUD's Lead Safe Housing Rule. It is highly recommended for all audiences.*

Module VIII — Regulatory Overview for Workers in Federally-Assisted Housing (30 minutes)

Upon completion of this training module, maintenance personnel should be able to:

- List the major Federal agencies responsible for regulating lead-based paint and associated activities.
- Recognize that the Lead Safe Housing Rule requires lead safe work practices and clearance in HUD-assisted housing.
- Explain interim controls — their purpose and how they relate to maintenance.
- Explain the key points of EPA's Pre-Renovation Education Rule
- Explain the key points of OSHA rules that protect workers from exposure to lead.

Special note: *Module VIII is required for audiences that must comply with HUD's Lead Safe Housing Rule. It is not recommended for other audiences.*

Module IX—Addressing Lead in Your Lead Maintenance Program (20 minutes)

Upon completion of this training module, maintenance personnel should be able to:

- Explain management's role in a lead maintenance program.
- Outline the fundamental components of a lead maintenance program.
- Effectively communicate with residents.
- Recognize procedures currently used that need to be modified to assure lead safe work practices are followed for lead-based paint work on the job.

Module X—Taking this Message Home: Working Lead Safe Everyday (30 minutes)

Upon completion of this training module, maintenance personnel should be able to:

- Answer correctly questions posed after four standard scenarios on working safely with lead.

Agenda

Lead-Based Paint Maintenance Training Program

7:30 — 8:00 REGISTRATION

MODULE I—MAINTENANCE WORK AND THE HEALTH EFFECTS OF LEAD EXPOSURE

8:00 — 8:15 Course Introduction

8:15 — 8:45 Lead Exposure

MODULE II—LEAD-BASED PAINT HAZARDS

8:45 — 9:15 Where You Find Lead-Based Paint
Recognizing Lead-Based Paint Hazards
Controlling Lead-Based Paint Hazards
Managing Lead-Based Paint

9:15 — 9:30 BREAK

MODULE III—LEAD SAFETY — MATERIALS AND WORK PRACTICES

9:30 — 10:30 Resident Notification
Preparation
Hygiene and Work Practices
Cleanup
Decontamination

MODULE IV—PLANNING LEAD-BASED MAINTENANCE JOBS

10:30 — 11:30 Lead-Based Paint Management Planning Tool
Lead Job Checklist
Materials and Equipment
Personal Protection

11:30 — 12:00 LUNCH

MODULE V—DOING LEAD-BASED MAINTENANCE JOBS

12:00 — 1:20 Work Practices
Cleanup
Carpet Removal
Decontamination
Quality Assurance

1:20 — 1:30 BREAK

**MODULE VI — OPTIONAL HANDS-ON EXERCISES: PRACTICING
WHAT YOU'VE LEARNED**

1:30 — 2:30 Planning and Executing a Job

2:30 — 2:45 **BREAK**

**MODULE VII — CLEARANCE: MAKING SURE THE JOB IS
COMPLETE**

2:45 — 2:55 What is clearance?
Who can do it?
What does it mean for maintenance personnel?

**MODULE VIII—REGULATORY OVERVIEW FOR WORKERS IN
FEDERALLY-ASSISTED HOUSING**

2:55 — 3:25 Title X
Lead Safe Housing Rule
Interim Controls and Paint Stabilization
Lead Dust Standards and Clearance Requirements
Visual Assessment
Renovation and Remodeling
EPA
OSHA
State

**MODULE IX—ADDRESSING LEAD IN YOUR MAINTENANCE
PROGRAM**

3:25 — 3:45 Integrating Lead-Based Paint Maintenance Into Your
Existing Maintenance Program
Working Lead Safe Everyday

**MODULE X—TAKING THIS MESSAGE HOME: WORKING LEAD
SAFE EVERYDAY**

3:45— 4:15 Four Scenarios

CLOSING

4:15 — 4:45 TEST

4:45 — 5:00 Review

Course
Introduction

Course Introduction

Module time: 15 minutes

Lead-Based Paint Maintenance Training Program

Work Smart, Work Wet, and Work Clean
to Work Lead Safe

Greet Participants

Introduce yourself. Talk briefly about your training and experience with lead-based paint maintenance jobs. Tell the class why you are teaching this course.

Ask the class to individually introduce themselves.

Tell about their experience working with lead-based paint.

Discuss what they would like to learn today.

Sign-In/Sign-Out Sheet

You may save time by asking people to sign in before the class starts or pass the sheet while people are introducing themselves.

Have all participants complete the sign-in/sign-out sheet.

Collect the sign-in/sign-out sheet after everyone has signed in.

Announcements

- Review the safety information about the training room, such as where to exit during an emergency, etc.
- Tell the participants where they can find the restrooms, coffee or other drinks, telephones, message center, etc.
- Notify participants of any smoking policy.
- Tell participants how much time is allowed for breaks and lunch, and when the class will end.

Emphasize how important it is to return from breaks and lunch on time. Extended breaks and lunch will result in failure to complete this training program in its entirety. Use a friendly, fun sound, like a bell or horn to reconvene the class quickly.

To start the class, first show Segment 1 of the videotape called "What Do You Know About Lead?"

This first segment of the video is designed to catch the students' attention, to interest them in the course, and to motivate them to want to change unsafe work practices. It emphasizes the importance of handling lead-based paint safely and presents effects of lead on real individuals. It is recommended that you play the tape before any discussion.

Show Video 1



This course is about preventing childhood lead exposure from lead-based paint. Approximately 434,000 children under the age of six have levels of lead in their blood that is too high. These children are more likely to have trouble in school, have

health problems, and encounter problems with the law later in their lives. Unless something is done to address the lead-based paint in people's homes, this problem is likely to grow.

While lead was banned from household paint in 1978, most homes built before then still have lead-based painted interior and exterior surfaces. The problem is complex, and the responsibility for fixing it is broad. It will be managed and corrected through a combination of efforts from government, business, housing owners and managers, insurance companies, parents, and you who maintain the painted properties.

This course only deals with your part. It teaches you proper procedures for reducing risk from lead during typical maintenance tasks. It assumes you already know how to do your job when you don't run into lead-based paint. It just teaches you what to do differently when you work on lead-based painted surfaces.

Review with the class the agenda for the training session.

COURSE TOPICS

- Lead Exposure
- Lead-Based Paint Hazards
- Lead Safety
- Planning and Performing Lead-Based Paint Maintenance Jobs
- Your Lead Maintenance Program

The course topics that will be covered are:

- The effects of exposure to lead-based paint in children and adults and how to avoid exposure.
- Lead-based paint hazards: What they are and where they are commonly found in a dwelling unit.
- Lead safety.
- Planning lead-based paint maintenance jobs and using lead safe work practices that don't create and spread lead dust.
- Integrating what you learn here into your lead maintenance program.

Module I —Maintenance Work and the Health Effects of Lead Exposure

Module time: 30 minutes

Lead Exposure and Maintenance Work

In this module, it is important to emphasize that lead exposure often has no identifiable symptoms and that a blood test is the only sure way to determine lead exposure.

MODULE I - MAINTENANCE WORK AND THE HEALTH EFFECTS OF LEAD EXPOSURE

Learning Objectives

- Describe the effects of lead exposure in both children and adults.
- Identify two ways lead enters the body in children and adults.
- Describe and explain the importance of the two roles of maintenance personnel in preventing lead exposure. I-1

When we complete this module, you should be able to:

- Describe the effects of lead exposure in children and in adults.
- Identify two ways lead enters the body in children and in adults.
- Describe and explain the importance of the two roles of maintenance personnel in preventing lead exposure.

Ask participants to quickly list maintenance activities they routinely perform.

Place a blank transparency on the overhead projector or use a flip chart. Write down the answers as they are given.

Then ask them which activities may involve disturbing lead-based paint or creating lead dust (for example, patching a hole in a wall painted with lead paint).

This course will give you information on how to perform these and other tasks to minimize lead exposure to residents and to protect workers and their families.

The Health Effects of Lead Exposure

- It is very effective to have a health professional present the health effects. If possible invite a nurse, doctor, or health department official to talk to the class.
- Review the points listed on the slides. The following information is provided to give you additional background and answer student questions.
 - Lead can enter the body quickly in large doses or slowly, over time.
 - Chronic exposure. A constant low level of exposure to lead often results in symptoms that are not immediately recognizable because they are similar to the effects of other illnesses, such as the flu.

EFFECTS OF LEAD EXPOSURE

Children



- Learning Disabilities
- Behavior Problems
- Slowed Growth
- Hearing Problems
- Anemia

I-2

- Acute exposure. Exposure to a large amount of lead in a short period of time (e.g. persistent ingestion of lead-based paint chips) can have dramatic symptoms, such as abdominal pain, vomiting, or seizures that are immediately obvious.
- The Center for Disease Control (CDC) set up a scientific standard for a “level of concern.” The CDC determined that any blood lead level above 10 µg/dl is a level of concern.
- The Lead Safe Housing Rule introduces the term “Environmental Intervention Blood Lead Level” (EIBLL). While all children with elevated levels of lead in their blood require monitoring and follow-up, children with higher blood lead levels trigger environmental interventions, such as evaluation of their homes and lead hazard reduction. The level at which this intervention takes place is called the environmental intervention blood lead level and is defined as:
 - A blood lead level of 20 µg/dl (micrograms per deciliter) of whole blood or above for a single test, or
 - Blood lead levels of 15-19 µg/dl in two tests taken at least three months apart.

The effects of lead exposure are varied and can be severe and permanent. They affect both children and adults.

Children. Children under the age of six are at the highest risk for lead exposure. This is because a child’s body absorbs more lead and their developing brain and nervous system are more susceptible to permanent damage. At very high levels, lead can cause coma, convulsions and death.

The most common effects of lead exposure in children at lower levels are:

- Learning disabilities, reduced IQ and attention span
- Behavior problems, such as hyperactivity and delinquency
- Slowed growth
- Hearing problems
- Anemia

Adults. Lead exposure in adults can cause:

- High blood pressure
- Digestive problems
- Nerve disorders

EFFECTS OF LEAD EXPOSURE

Adults



- High Blood Pressure
- Digestive Problems
- Nerve Disorders
- Anemia
- Reproductive Problems

I-3

- Anemia
- Reproductive problems

Emphasize the following points that are important to everyone:



Adult males. Lead exposure can cause the following effects on the male reproductive system:

- Abnormal sperm
- Low sperm count
- Low sex drive
- Difficulty in having children
- Impotence

Women of Childbearing Age and Pregnant Women.

Women of childbearing age and pregnant women are particularly at risk. When a pregnant woman is exposed to lead, her unborn child may suffer neurological damage, low birth weight, and some women experience miscarriage or stillbirth.

Symptoms. Unfortunately, there are usually no identifiable symptoms of lead exposure. Children with lead exposure may also show vague symptoms of being distractible, hyperactive, or belligerent. Because many of the symptoms of lead exposure are vague or similar to flu symptoms, parents may not get immediate medical attention. This is critical for young children because the longer lead remains in the body of a young child, the higher the risk of permanent damage. It is also possible for a child to have an elevated blood lead level and show no signs of lead exposure at all.

Although there are no specific symptoms that you can definitely say are from lead exposure, people with lead exposure sometimes complain of these common problems:

- Headache
- Stomachache
- Irritability
- Fatigue
- Loss of appetite
- Pain in joints
- Inability to concentrate

Remember: Blood testing is the only reliable way to confirm lead exposure.

SYMPTOMS OF LEAD EXPOSURE

- Headaches
- Stomachache
- Irritability
- Fatigue
- Loss of appetite
- Joint pain
- Unable to concentrate



I-4

TESTING FOR LEAD POISONING

- No specific symptoms
- Blood test needed



I-5

How Lead Enters the Body

Sources of Lead

Lead is found naturally in the ground. It has also been used to make thousands of consumer products including the following:

- Lead plumbing fixtures and solder
- Imported plastic mini-blinds
- Gasoline

Largest Source

However, the largest single source of lead in our environment is lead-based paint in older homes. Lead-based paint is found on the walls, woodwork, windows and exterior surfaces of homes and apartments built before 1978. (The amount of lead that was permitted in paint for residential use was lowered to a safe level in 1978.) When this paint deteriorates or is damaged, it creates lead-contaminated dust and paint chips. This dust and chips are the primary causes of childhood lead poisoning.

Pathways

Because lead is in our living environment, we are all at some risk of lead exposure. Lead can enter the body by ingestion (swallowing) or inhalation (breathing). Lead exposure most commonly occurs from inhaling or unintentionally ingesting lead dust, not from eating lead paint chips. In most instances, hands won't look dirty or show signs of lead dust.

Ingestion (Swallowing)

Ask the class for examples of how children and adults may get lead dust into their mouths. You may place a blank transparency on the overhead projector and write the answers on it as they are given, or write them on a flip chart or blackboard.

Examples may include the following (add any that are not quickly suggested by class members). Emphasize the importance of dust. While paint chips and fumes can be a problem, most people consume dust.

HOW LEAD ENTERS THE BODY: SOURCES OF LEAD



- Plumbing fixtures and solder
- Imported mini-blinds
- Gasoline
- **Lead-based paint**

I-6

HOW LEAD GETS INTO THE BODY: PATHWAYS

- It is about the DUST
- Ingesting (Swallowing)
 - Hand-to-Mouth Activity
 - Eating paint chips
- Inhaling (Breathing)
 - Dust from routine maintenance activities
 - Fumes from burning lead-based paint

I-7

Children:

- Sucking, chewing or mouthing lead-contaminated objects, including thumbs and pacifiers.
- Ingesting lead-based paint chips.
- Putting dirty hands (from playing in contaminated soil or crawling on floors covered with lead dust) in their mouths.
- Playing with toys coated with lead paint or lead dust.
- Playing in lead-contaminated soil (from play areas).
- Using lead painted furniture and woodwork.
- Being exposed to dust from clothing (worker's family is particularly at risk).

Adults:

- Putting dirty hands (from working in areas that contain lead dust) in their mouths.
- Putting cigarettes, coffee cups, food, nails, and toothpicks contaminated from dirty hands in their mouths.
- Participating in hobbies such as those that use weights, ammunition, fishing weights (split shot), and stained glass solder.
- Having occupational exposure to lead.

Inhaling (Breathing)

Ask the class to name sources of lead dust that can be inhaled. Place a blank transparency on the overhead projector and write the answers on it as they are given.

Examples include the following:

Both children and adults are at risk of inhaling lead dust. The following increase the risk of inhaling lead dust:

- Routine maintenance activities such as scraping, sanding, and cleanup. (Lead dust generated by these activities can be inhaled, remain in the residence, and get on clothing.)
- Burning of lead-based paint.
- Dust created through industrial activity.

Review the material by asking students what this means to them as maintenance workers.

Points that should be mentioned are listed below:

YOUR ROLE IN PREVENTION

- As maintenance workers, we can:
 - PROTECT by preventing or eliminating lead dust
 - INFORM by telling residents about your lead-safe work practices

I-8

Roles of Maintenance Personnel

Roles Maintenance Personnel Play in Preventing Lead Exposure

As a maintenance worker, you play two roles in preventing lead exposure: protecting and informing.

Protecting

The most important ways maintenance workers can help to prevent or eliminate lead exposure is by repairing lead-based paint and by not creating lead hazards while doing repairs.

- ❑ By performing tasks according to the procedures in the **Lead-Based Paint Maintenance Planning Tool**, you are the first level of defense. By practicing proper procedures for managing lead-based paint, you can protect the residents of the dwelling unit, yourself, your co-workers, and your own family.
- ❑ By steering clear of activities that are not appropriate maintenance tasks — such as “abatement” activities, you will also help protect yourself and residents. We’ll talk more about what constitutes an “abatement” activity later.

Informing

As maintenance workers, you also help to inform residents each time you answer residents’ questions about the work you are doing. Residents are often curious about the maintenance job. Even more questions may arise as they see you using different equipment and procedures for work they have seen done differently before.



It is important for you to explain that you are using procedures that reduce exposure to lead to protect yourself and the residents. However, it is not your job to provide technical, medical, legal or any other advice.

Show the copy of “Protect Your Family From Lead in Your Home” included with your course materials. You may provide copies for participants. Explain that the pamphlet is for tenants to learn about lead health effects, hazards, and protecting their families.

Why Maintenance Personnel are Critical in Preventing Lead Exposure

You play a major role in protecting children from lead exposure in this country. Keep in mind that lead-based paint is usually a problem only when:

- The paint or the substrate (the wall surface underneath the paint) deteriorates, or
- When you break through or otherwise disturb the paint to do other jobs.

Maintenance personnel who perform their everyday tasks using lead safe work practices minimize the generation and dispersal of lead dust and debris. This decreases the chance of lead exposure to the children living in the units, their own children, themselves, and their co-workers.

Review the main points of this section by asking a class member to summarize their two roles in prevention of lead-based paint hazards.

The maintenance person plays two roles in preventing lead exposure:

- Protecting residents, yourself, and your family from lead exposure, and
- Informing residents at the time of the maintenance activity.

This is accomplished by:

- Fixing deteriorated paint safely,
- By not creating new lead hazards while performing other tasks, and
- By informing residents of the reasons for the safety precautions that are being followed.

Role-play communication with the tenant. Pretend to be a concerned tenant and ask students to respond to questions about lead exposure.

Module II—Lead-Based Paint Hazards

Module time: 30 minutes

MODULE II-LEAD-BASED PAINT HAZARDS

Learning Objectives

- Explain where lead-based paint may be found.
- Define “lead-based paint hazard.”
- Locate and identify the various lead-based paint hazards commonly found in a dwelling unit.
- List the two approaches to addressing lead-based paint hazards.
- Describe ways to maintain lead-based paint so that it does not become a hazard.

II-1

WHERE YOU FIND LEAD-BASED PAINT



- Most houses built before 1978
- Interior and exterior surfaces

II-2



RECOGNIZING LEAD-BASED PAINT HAZARDS

- Lead contaminated dust
- Deteriorated (chipping and peeling) lead-based paint
- Friction surfaces
- Impact surfaces
- Chewable surfaces
- Lead contaminated soil

II-3

When we complete this module, you should be able to:

- Explain where lead-based paint may be found.
- Define “lead-based paint hazard.”
- Locate and identify the various lead-based paint hazards commonly found in a dwelling unit.
- List the two approaches to addressing lead-based paint hazards.
- Describe ways to maintain lead-based paint so that it does not become a hazard.

Where You Find Lead-Based Paint

Most homes built before 1978 are likely to contain some lead-based paint. **This is key. Remember this date.** Lead-based paint was used on the exterior of homes, especially on porches, windows and doors because it withstood weather changes. It was used in interiors on woodwork, walls, floors, windows, doors, and stairs because it stood up to wear and tear. The most likely interior places are trim areas and all surfaces in kitchens and bathrooms. The older the home, the more lead there is likely to be. **Remember that not all lead-based paint is a hazard. Let’s look at what makes it a hazard.**

Recognizing Lead-Based Paint Hazards

As you list these, show surfaces in the room as examples, and discuss how they pose a threat to children, like where they are located and how children reach them or adults impact them.

A lead-based paint hazard is a condition in which exposure to lead from the following sources could have an adverse affect on human health:

- Lead-contaminated dust—the worst culprit
- Deteriorated (chipping and peeling) paint
- Friction surfaces like windows—the movement wears away the paint and grinds it to dust on sills and troughs
- Impact surfaces like doors, walls that get hit and banged, corners that stick out

- ❑ Surfaces children can chew, like window sills and railings
- ❑ Lead-contaminated bare soil—from past lead in gasoline and deteriorated exterior paint where children play

Lead-based paint becomes a health hazard when it chips or peels or when it turns into dust or contaminates soil through inadequate maintenance work practices. Unsafe work habits such as dry sanding or scraping create dust that can be tracked throughout a home. If left behind after the work is finished, this dust could be a hazard to residents. **If lead-based paint is maintained and monitored, and not disturbed, it is not a hazard.**

Where are Lead-Based Paint Hazards Most Likely to be Found and What do They Look Like?

Ask the class to describe lead-based paint hazards they know about or would expect to find in their buildings.

Place a blank transparency on the overhead projector. Write the answers on it as the class gives them.

Trim	Bare soil
Doors	Bathrooms
Windows	Kitchens
Window sills	Imported mini-blinds

Addressing Lead-Based Paint Hazards

When people think about addressing lead-based paint, they usually think about abatement. But abatement is a specialized set of treatments that permanently removes or encloses the lead-based paint and that must be done by a certified professional.

There are many other simpler measures that we can take to protect children and workers from lead-based paint. As maintenance personnel, you present the first line of defense against lead-poisoning. By maintaining painted surfaces and by working safely on surfaces that you know or presume have lead-based paint, you can minimize the amount of lead-contaminated dust that is created and left in a home. This course teaches you how to do that.

Abatement of Lead-Based Paint Hazards

Abatement projects are specifically designed to remove lead-based paint using highly controlled procedures. The intent of

ADDRESSING LEAD-BASED PAINT HAZARDS: ABATEMENT

- Abatement is:
 - Highly controlled
 - Done by a certified contractor
 - Not maintenance work
- This course does not teach you abatement methods.

II-4

abatement is to permanently remove or control lead-based paint and lead-based paint hazards. (Note that “permanent” is defined as lasting at least 20 years.) Only certified abatement personnel can perform abatement. This training does not train you to perform the abatement of lead-based paint hazards. Persons who do lead abatement need to attend a separate course, pass a test, and become certified.

ADDRESSING LBP HAZARDS: MAINTENANCE

- Maintenance avoids lead hazards
- Maintenance includes:
 - Repairing painted surfaces
 - Repairing rotted or defective plaster or wood
 - Revolving or controlling dust
 - Covering or isolating contaminated soil
 - Repairing damage to walls
 - Rehangng doors

II-5

Maintaining Lead-Based Paint

In units where lead-based paint remains, we need to **maintain the paint to avoid lead hazards**.

Maintaining lead-based paint may involve:

- Repairing painted surfaces (keeping the paint intact)
- Repairing rotted or defective plaster and wood that will cause the paint to blister, chip and peel
- Removing and controlling dust
- Covering bare soil with sod, grass, or other temporary ground cover or limiting access in such ways as planting bushes
- Repairing damage to walls from impacts by doorknobs and other moving building components
- Rehangng a door to eliminate friction points and dust generation

In this course, you will learn to work proactively to maintain lead-based paint intact and to use lead safe work practices when working on painted surfaces. You will learn to “**work smart, work wet, and work clean**” to minimize lead dust during your maintenance jobs that involve lead-based paint. These good work practices will control the risk of lead exposure to yourselves, your co-workers, your families, and to residents living in the units you maintain. In other words, you will learn to **work safe**.

Module III—Lead Safety—Materials and Work Practices

Module time: 60 minutes

This module emphasizes the importance of personal, residential, and family safety.

The video pieces are short scenarios that show workers using unsafe work practices. The goal is for the students to identify and discuss usual work practices that are not safe when working with lead-based paint.

After the participants have seen the video piece, stop or pause the tape. Discuss with them the key points listed in the manual. These scenarios are designed to get people thinking about the consequences of their routine activities and to review some of the information covered earlier. The next module explains in detail how to do the jobs safely.

If there is debate over any point, don't spent time arguing. Instead:

Agree that the student has made a point that should be looked at more carefully later in the program,

Agree to get more information, or

Agree to take the point up with management, if appropriate.

Go over the following learning objectives with the class.

MODULE III - LEAD SAFETY: MATERIALS AND WORK PRACTICES

Learning Objectives

- Discuss the need to notify and protect residents.
- Recognize materials, equipment and personal protective clothing.
- Recognize proper work practices that minimize dust.
- List five prohibited work practices.
- List five unsafe work practices.
- State the importance of thorough cleaning.

III-1

When we finish Module III, you will be able to:

- Discuss the need to notify and protect residents.
- Recognize materials, equipment, and personal protective clothing used on lead-based paint maintenance jobs.
- Recognize proper work practices that minimize dust.
- List five prohibited work practices.
- List five unsafe work practices.
- State the importance of thorough cleaning of the work area, proper personal hygiene, and personal decontamination.

Why Use Lead Safe Work Practices?

This module will introduce you to the additional protective clothing and specific equipment, materials, and work practices to be used when you do lead-based paint maintenance jobs.

WHY USE LEAD SAFE WORK PRACTICES?

- Protect residents of the dwelling unit
- Protect yourself
- Protect fellow workers
- Protect your family

III-2

These extra steps are needed to:

- Protect the residents of the dwelling unit.
- Protect yourself.
- Protect your fellow workers.
- Protect your family.

The five short videos that accompany this training highlight correct and incorrect work practices dealing with lead-based paint. First, we'll meet Drake. Look for practices that may expose him and the residents to lead-based paint hazards, especially dust.

Before the Job

Show Safety Video 2A



After viewing the video, ask the class what they believe was done incorrectly. Students should pick up these problems in the video:

- Mom not notified
- No drop cloth
- Didn't try to minimize or contain dust
- Children and toys allowed in work area
- Poor worker hygiene
- Be sure to address the following points:
- Resident notification
- Roles of the maintenance person protecting and informing residents
- Resident traffic/access into work area
- Site preparation (drop cloth/poly film)
- Hygiene and contamination

Emphasize that the procedures discussed below are all important to protect both workers and residents.

There are a number of steps to take before the job to make it safe for residents and workers. There include coordinating with the residents, containing the area, and bringing proper materials, equipment, and clothing.

Coordinate with Residents

It is very important to have the residents out of the immediate work area. If allowed in the area, they can be exposed to lead dust and can track lead dust from the work area to other parts of the dwelling unit.

Only you who are doing the maintenance should be in the work area. The work area is that part of the dwelling unit in which you cover the floor area with the heavy duty poly film. Residents' belongings should also be covered with poly film.

BEFORE THE JOB: COORDINATE WITH RESIDENTS

- All residents should be out of the immediate work area
- Only maintenance personnel in the unit
- Management should:
 - Notify residents of upcoming maintenance or other work
 - Ask them to move their belongings as needed
 - Relocate residents when necessary

III-3

Residents should not enter the work area until after the area has been properly cleaned.

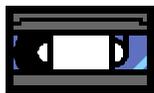
For high risk work, residents, especially children and pregnant women, must be out of the dwelling unit until after the work area has been thoroughly cleaned.

Management is responsible for coordinating with residents to protect them from lead exposure as a result of maintenance work. Management should notify residents when they must refrain from entering the unit and to move their belongings. Management is also responsible for relocating residents when necessary.

Preparation to Minimize Lead Dust

Now meet Tony and Freddie and look for clues on preparing for a lead-based paint maintenance job. Remember: preparation is the key to minimizing lead dust.

Show Safety Video 2B



Ask the class what they believe was done incorrectly. They should mention:

- The old dusty drop cloths
- The drop cloth on resident's bed
- The drop cloth does not cover the entire area to the wall
- Resident's furniture is still in the room and not covered well
- Putting equipment on resident's furniture
- Personal protective equipment (coveralls, goggles)
- Electric sander, reciprocating saw
- Specifically, point out:
 - Role as protector (protect resident's belongings)
 - Work site preparation (cover or remove furniture)
 - Use of appropriate materials/equipment, heavy duty poly film, heavy duty poly bags, cleanliness, security
 - Personal protection appropriate to the level of risk (gloves, coveralls, etc.)
 - Hygiene (carrying dust home or elsewhere)
 - Prohibited work practices (sander, reciprocating saw)

Remind the class that following good practices—**work smart, work wet, work clean**—is key to reducing exposure to lead.

When preparing for a lead-based paint job, be sure to take the following steps:

- Contain the area
- Cover area with poly film
- Move or cover residents' belongings
- Bring appropriate materials and equipment

Materials and Equipment That Help Keep Maintenance Jobs Safe

In addition to the typical tools and equipment used by maintenance personnel, some familiar items used to do lead-based paint maintenance jobs safely are:

- Spray bottle** with water to mist down work area (water keeps the dust down),
- Rags** for cleanup,
- Cleaner** (all purpose or one made specifically for lead, which picks up lead dust better than plain water), and
- Tape and staples** to fasten poly film.

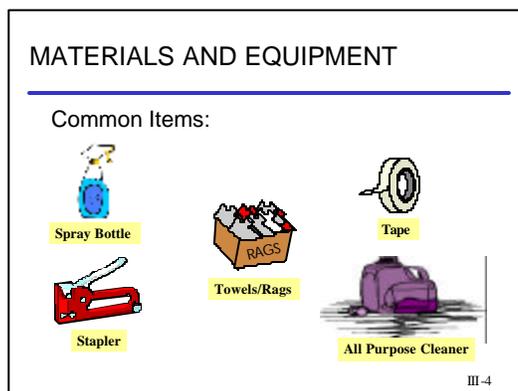
These items can be found around the maintenance shop and even the home. There are special uses for all of those that we will discuss in detail later. Some items are specific and critical to lead-based paint maintenance. We will introduce them now, and you will learn all about them throughout the day.

Heavy duty poly film is polyethylene (or equivalent) thick plastic that is more resistant to tears and punctures than many ordinary plastic drop cloths. It is used to isolate the work area and contain the lead dust and debris. It is also better than a drop cloth because it is disposable and won't drag lead dust to the next dwelling.

Heavy duty poly bags are much thicker than household trash bags (which are usually only one mil) and more resistant to tears and punctures. They are used to dispose of contaminated materials and debris.

HEPA-filtered vacuum is a vacuum fitted with a special filter called a HEPA filter. HEPA stands for high efficiency particulate air. This filter is capable of trapping 99.96% of dust, including lead dust, that is not visible to the human eye. Most conventional household vacuums and shop vacuums do not have this filter. Thus, fine dust that is collected may escape through the exhaust of conventional vacuums. **Fine dust is more dangerous because it can more easily enter the body and be absorbed.** All manufacturers' instructions for the HEPA-filtered vacuum must be followed, including instructions for assembly, use, cleaning, maintenance, and bag replacement in order for the vacuum to work properly.

The HEPA-filtered vacuum is required for large, high risk jobs and is helpful for smaller jobs.





HEPA-filtered vacuums come in different sizes, and with dry or wet capabilities. A small one that is easy to carry from one job to the next is available for under \$500 from maintenance supply stores.

What Protective Clothing Is Used During Maintenance Jobs?

Show examples of personal protective clothing shown on Viewgraph III—6.

The protective clothing and equipment needed during lead-based paint maintenance jobs depends upon the size and extent of the project and the amount of dust. You need to know what to use to protect yourself from lead exposure. You may use any or all of these:

- Eye protection
- Coveralls (disposable or recyclable)
- Disposable cotton gloves
- Latex/rubber gloves (when using detergent)
- Respirator with HEPA filter (N-100 or higher)

Notice the arrow for ↑ high risk in the planning tool. High risk work requires the use of disposable or recyclable coveralls, gloves, and respiratory protection. You may use as little as none, or as much as all of these, depending upon the risk involved in the particular maintenance or repair project.

The OSHA lead standard requires workers to wear respirators if lead in the air exceeds the permissible exposure limit (PEL). The PEL for lead in the air is 50 micrograms per cubic meter of air for an eight-hour time weighted average.

Protective clothing is designed to protect the person who is performing the work and is closest to the lead dust. However, protective clothing does not protect the residents. And while proper use and disposal of protective clothing will protect you during the job, not taking contaminated clothing home will keep you from bringing the lead home to your family.

Hygiene and Work Practices—During the Job

Here they are again (Tony and Freddie). How are they doing on protecting themselves and residents during the job? Also look for prohibited work practices.

Show Safety Video 2C



Ask the class what they believe was done incorrectly. They should notice:

- Using the torch on lead-based paint
- Using coveralls and goggles
- The soda can
- Smoking on the job
- Tracking dust to other areas of dwelling
- Using resident's phone

Specifically, the following points should be addressed:

- Personal hygiene (eating, smoking, drinking)
- Prohibited work practices
- Contamination beyond the work area
- Protecting role

Emphasize that personal hygiene and decontamination are very important.



DURING THE JOB: HYGIENE

- No smoking
- No eating, drinking, chewing gum or tobacco
- No applying cosmetics
- Wash hands and face with soap (or towelettes) before eating, drinking or smoking

III-7

Personal Hygiene

You can minimize your risk of lead exposure by following proper personal hygiene practices during and after performing the job. Personal hygiene during maintenance work involving lead-based paint includes the following:

- NO smoking
- NO eating or drinking, chewing gum, or tobacco
- NO applying cosmetics

Performing these activities with lead contaminated hands puts you at risk of lead exposure.

For all jobs, before eating, drinking, or smoking, and at the very end of the job, wash your face and hands thoroughly with soap and water or a towelette. This ensures that any lead dust that might be on your skin has been removed. For very small jobs, you may use a disposable baby wipe.

Lead Safe Work Practices— An Introduction

This course will teach you specific work practices to follow to protect yourself, residents, and your own family when performing jobs that involve lead-based paint hazards. By using these lead safe work practices, you will:

- Protect residents and their belongings,
- Minimize lead dust, and
- Do your best to protect your own, your fellow workers' and your family's safety.

General Principles. After lunch we will get into specifics, but for now, remember this phrase: **Work smart, work wet, and work clean** to work safe. You will protect residents by keeping them away from lead dust during and after your job.

Prohibited Practices. In contrast to the work practices recommended in this course, there are certain activities that are **prohibited** when working in areas that might contain lead-based paint. They create dangerous levels of lead dust or fumes. **Never remove unknown, or suspected, lead-based paint by these methods:**

- Open flame burning or torching (including propane-fueled heat grids) and heat guns operating above 1,100°F release toxic fumes,
- Machine sanding or grinding without HEPA local vacuum exhaust tool creates lead dust,
- Abrasive blasting, or sandblasting without HEPA local vacuum exhaust tool creates lead dust,
- Using methylene chloride paint removal products releases carcinogenic fumes, and
- Extensive dry sanding or scraping creates lead dust (dry scraping is permitted near electrical circuits).

LEAD SAFE WORK PRACTICES: AN INTRODUCTION

- Work Smart
- Work Wet
- Work Clean

}

Work Safe

III-8



DURING THE JOB: PROHIBITED PRACTICES

- No open flame burning, heat gun hotter than 1,100° f, or welding/flame cutting
- No mechanical grinding/sanding without HEPA attachments
- No abrasive blasting, or sandblasting
- No methylene chloride based strippers in poorly ventilated spaces.
- No extensive dry sanding or scraping above de minimus levels






Methylene Chloride Stripper

III-9

Show Safety Video 2D



End of the Job— Cleanup at the Jobsite

Let's check in on Drake as he cleans up after installing the new thermostat.

Safe Cleanup

Ask the class what they believe was done incorrectly. They should discuss:

- Improper cleanup (dry sweeping)
- Improper disposal (resident's trash)
- Dust not minimized with water
- Children in work area

Specifically, the following points should be addressed:

- Proper cleanup (dry sweeping, improper disposal of debris, etc.)
- Unsafe work practices
- Role as protector

Cleaning is the last line of defense against lead contamination. Lead dust is very fine and may not be visible to the naked eye. Thorough cleaning is critical.

Safe Cleaning. Wet wiping the area with an all purpose cleaner or a cleaner made specifically for lead is a very important step in minimizing dust. At a very minimum, the area where you have been working must be wet wiped with a cleaner and then with rinse water. On a very small job, you may want to use two disposable baby wipes, one to wash and one to rinse. All of the cleaning materials (rags, sponges, or mops) must be put into a heavy duty poly bag for disposal or rinsed thoroughly so lead dust will not be spread to the next unit. They should not be reused. The areas should be vacuumed with a HEPA-filtered vacuum.

Unsafe Clean-Up Practices. When you are finished, close, seal, and label the poly bags. Remove all materials, tools, and bagged debris from the work area and residence. Properly dispose of all bagged debris. Wet wipe all tools.

An easy jingle to remember good cleanup practices is “wet, wipe, and toss.” You will learn more about this later.

The following work practices are unsafe and can increase resident's risk of lead exposure long after the job is finished:

- Using a resident's shop vacuum or household vacuum
- Disposing water in resident's sink/bathtub or yard area
- Washing in the resident's sink or lavatory
- Using water near electrical outlets/fixtures
- Disposing waste in the residential dwelling or community dumpster

CLEAN-UP: GOOD PRACTICES

DO'S

- Use a HEPA-Filtered vacuum
- Wash in buckets
- Dispose of waste water in toilet or offsite
- Keep water away from electrical outlets/fixtures
- Dispose of waste at appropriate facilities

DON'T'S

- No vacuuming with household vacuum
- No washing in resident's sink
- No disposal in resident's sink, bathtub, or yard
- No water near electric outlets/fixtures
- No disposal of waste in resident trash

III-10

Emphasize that waste disposal is an important issue and that they should educate themselves about local rules for waste disposal.

Large scale projects may be subject to State and local disposal laws. In general, small single unit jobs will fall under the household exemption.

After the Job—Decontamination

Show Safety Video 2E



In the next video clip, Tony and Freddie create serious lead hazards as they leave their job.

Ask the class what they believe was done incorrectly. They should mention:

- No personal decontamination
- Debris in thin bag
- Putting debris on top of food and toys in truck
- Eating, smoking
- Wearing clothing contaminated with lead dust home

Specifically, cover the following points:

- Improper procedures for disposal (dumpster)
- Improper handling of drop cloth, bag of debris
- Contamination (clothing, equipment, taking dust away from site, personal vehicle)
- Hygiene (smoking, eating, drinking)
- Role to protect own family

Emphasize that cleanup, proper disposal of debris, and decontamination are just as important as working safely at the site.



AFTER THE JOB: DECONTAMINATION

- Wash hands and face with soap and water
- Remove dust from clothes with HEPA-filtered vacuum
- Shower immediately after leaving job, before leaving the facility, or upon arriving home

III-11

The extent of decontamination after the job depends upon the amount of dust generated during the job. At a minimum, you will ensure that you don't ingest dust or carry dust to the next job or home. So, wash off your face and hands with soap and water.

If you don't shower immediately after the job, then shower either before leaving the facility or immediately upon arriving home.

Any dust that has gotten on your clothes can be removed using a HEPA-filtered vacuum. If disposable or recyclable coveralls are not worn, change clothes prior to leaving the work site. You don't want to carry dust home or into your car.

Emphasize these points in your module review. Ask class members to give examples for each of the main points.



Summary

Point #1: Lead-based paint maintenance jobs require specific protective clothing, equipment, and procedures to protect you, residents in your building, and your family from lead exposure.

Point #2: Procedures have been developed to protect you, residents in your building, and your family when you do lead-based paint maintenance jobs. There is an easy way to remember the work practices for performing the actual activity and the cleanup after the activity:

- ❑ **Work Smart**—Be alert; prepare for the job; and take precautions for yourself and residents. Pay attention to all activities occurring in and out of the work area. Do not use prohibited and unsafe work practices.
- ❑ **Work Wet**—To work wet means to keep the surface damp, so that sanding, scraping, planing, etc., do not generate and spread dust. Use a spray mister to lightly mist the surface just before you work on it.
- ❑ **Work Clean**—Minimize spreading lead dust and debris by containing the area and by cleaning as you go and at the end of the job.

Following these work practices will help minimize the amount of lead dust created, which in turn minimizes the risk of tracking the lead dust to other parts of the dwelling unit.

Cleaning the work area after the activity is completed is also important. If the cleanup is incomplete or inadequate, any remaining lead dust or debris puts the residents at risk of lead exposure long after the maintenance person has completed the activity and has moved on to the next assignment. On some jobs in Federally assisted housing, a clearance examination (a dust test) is required and must be passed for the job to be complete. You will learn more about this in “Module VII: Clearance: Making Sure the Job is Complete”.

Point #3: Avoid practices that are prohibited or unsafe.

Ask the class to list the prohibited and unsafe work practices. Write them on the blank overheads provided.

Please learn these 2 lists! If you only learn one thing today, be sure you **avoid these prohibited and unsafe work practices**.

SUMMARY

- Use protective clothing, equipment, and procedures when doing lead-based paint maintenance.
- Work smart, wet, and clean to protect you, residents, and your family.
- Avoid practices that are prohibited and unsafe.

III-12

Prohibited Work Practices

- Open flame burning or torching (including propane-fueled heat grids) and heat guns operating above 1,100°F release toxic fumes
- Machine sanding or grinding without HEPA local vacuum exhaust tool creates lead dust
- Abrasive blasting, or sandblasting without HEPA local vacuum exhaust tool creates lead dust
- Using methylene chloride paint removal products releases cancer causing fumes, and
- Extensive dry sanding or scraping creates lead dust.

Unsafe Work Practices

- NO vacuuming with household vacuum
- NO misting of water near electric outlets/fixtures
- NO uncontained high-pressure washing
- NO washing in resident sink or lavatory
- NO disposing water in resident sinks/bathtubs or yard areas
- NO disposing waste in resident trash

Module IV—Planning Lead-Based Paint Maintenance Jobs

Module time: 60 minutes

This and the following modules are designed as practice sessions to ensure that students learn to perform lead-based paint maintenance jobs as shown in the **Planning Tool**. Emphasize that the cards in the **Planning Tool** have been laminated so that the supervisor can circle the items needed for each job and the worker can check off after completing the work. You may use a dry ink marker or grease pen on the laminated card, or copy the card and make marks on the paper copy.

The planning video shown in this module is the first of the five video segments used to teach how to perform the following activities:

- Planning
- Preparation
- Performing the Task
- Cleanup
- Carpet removal

The videotapes feature a narrator discussing the best way to perform lead-based paint maintenance jobs and people performing various tasks using the **Planning Tool**.

During the discussions of the videos, have students refer to their copies of the **Planning Tool**. This will ensure that they become comfortable with it. Activities are included that have the students working in groups using the **Planning Tool** to prepare for a lead-based paint maintenance task.

We are now going to learn the game plan. Vince Lombardi is credited with creating the concept of the game plan, and we borrow the idea from him and apply it to how we deal with lead-based paint.

Read the module objectives to the class.

MODULE IV-PLANNING THE JOB

Learning Objectives

- Plan a lead-based paint maintenance job.
- Recognize an activity as either low risk or high risk.
- Choose appropriate materials and equipment for the job.
- Choose appropriate personal protective clothing and equipment for the job.

IV-1

When we finish this module, you should be able to:

- Plan a lead-based paint maintenance job.
- Recognize an activity as either low risk or high risk.
- Choose appropriate materials and equipment for the job.
- Choose appropriate personal protective clothing and equipment for the job.

Distribute and introduce the **Planning Tool**.

The Lead-Based Paint Maintenance Planning Tool

This **Planning Tool** is designed to help you learn the safe way to do jobs that involve lead-based paint. The **Planning Tool** is a set of instructions for minimizing the generation of lead dust and potential lead exposure when performing a variety of maintenance jobs. It is to be used in the field by all maintenance personnel.

When used properly, the **Planning Tool** can be as important as the other tools you carry in your toolbox. It will assist you in performing lead-based paint maintenance jobs effectively and safely. Its use can prevent loss of time decontaminating a dwelling unit due to improper procedures. Using it can also protect your health and help prevent lead poisoning of children residing in the dwelling unit or your own children.

Ask students to follow you through the pages of the **Planning Tool** as you briefly describe the use for each card.

The lead job checklist, the series of guide cards, and the quality assurance checklist take you through the job from start to finish. The cards are used prior to starting a job, during the evaluation and planning stages, and all the way through to the end of the job. The appropriate cards/checklists can then serve as a job record when they are filled out for each job as it is completed.

The **Planning Tool** contains the following ten cards, each of which is discussed below:

- Lead Job Checklist**—Six questions to help identify lead activities, determine risk, and decide how the job should be done.
- Materials Card**—disposables used for lead jobs.
- Equipment Card**—list of tools and equipment needed for lead jobs.
- Personal Protection Card**—clothing and equipment used for lead jobs.
- Work Practices Card**—how to work smart, wet, and clean.
- Prohibited and Unsafe Work Practices Cards**—what not to do.
- Cleanup Cards**—step-by-step procedures for low risk and high risk jobs.

- Carpet Removal Card**—steps for safe carpet removal.
- Decontamination Card**—decontamination practices.
- Quality Assurance**—questions to ensure the job has been done right.

This afternoon we will learn to use this **Planning Tool** and follow proper procedures—work safe, work wet, and work clean. To help us do that, we will watch and discuss a series of videos. The narrator in these films is great. He teaches serious material, but keeps it light.

Two guys, Ben and Scott, are doing a huge high risk job repairing peeling paint in a whole room. Kirby, in contrast, does a low risk job patching a hole in an alcove over a bookcase. In the video, watch for:

- The decisions made on whether the job involves lead-based paint,
- The decisions made on whether the job is high or low risk,
- The differences in personal protection used by Ben and Scott doing high risk work and Kirby doing low risk work, and
- The different materials and equipment used for high and low risk jobs.

**Show Planning
Video 3**



Have the students look at the Lead Job Checklist Card in their **Planning Tool**. Review with them the questions that are on the checklist. Point out that this checklist is primarily designed for the person responsible for scheduling jobs. If they think a task could involve lead they should ask if the checklist has been completed.

There are six questions to ask prior to starting any maintenance job. They are normally answered by the supervisor or a worker who has been through this training, and who has the authority to answer the questions and assign personnel to do the task. Every worker should be familiar with the contents and the intent of the checklist.

Lead Job Checklist

Start with the first page of your Maintenance Planning Tool. At the top of the page is a place to fill in the resident's name, phone number, address or apartment number, and the job number. This information will help you to inform the resident, and resident manager, and to coordinate this checklist with the general work order. In fact, the checklist should be attached to the work order. If it becomes

LEAD JOB CHECKLIST

1. Was the building built before 1978? Yes No

If you don't know when the building was built, treat the paint as lead-based paint. If the building was built after 1978, then lead-based paint is probably not present and this is not a lead job.

If the building was built before 1978, then treat the paint as lead-based paint, unless a paint inspection report says that no lead-based paint is present.

IV-2

LEAD JOB CHECKLIST

2. Could this job: (Y=Yes, N=No)

- Create dust that may contain lead? Y N
- Disturb known or suspected lead-based paint? Y N
- Require cleanup of dust or debris that may contain lead? Y N
- Disturb known or suspected lead contaminated soil? Y N

IV-3

LEAD JOB CHECKLIST

3. If "Yes" to any of the above, or if you don't know the answer to any of the questions, assume you are dealing with lead-based paint, and circle the level of risk below.

LOW RISK =

- Low levels of dust expected to be generated, and
- Surface and paint in good condition, and
- Less than two (2) square feet.

HIGH RISK =

- High levels of dust expected to be generated, or
- Surface and paint in poor condition, or
- Greater than two (2) square feet.



IV-4

LEAD JOB CHECKLIST

LOW RISK =

- Low levels of dust expected to be generated, and
- Surface and paint in good condition, and
- Less than two (2) square feet.

IV-5

separated, this identifying information will help you keep the record straight. Following completion of the work, the checklist becomes a permanent record of the lead safe precautions taken during the job.

Now, we are going to walk through each of the six questions in the checklist, in order.

1. Was the building built before 1978?

If you don't know when the building was built, treat any paint as lead-based paint. If the building was built on or after 1978, then lead-based paint is probably not present, and this is not a lead job.

2. Could this job:

- Create dust that may contain lead?
- Disturb known or suspected lead-based paint?
- Require cleanup of dust or debris that may contain lead?
- Disturb known or suspected lead contaminated soil?

3. If "Yes" to any of the above, or if you don't know the answer to any of the questions, assume you are dealing with lead-based paint, and circle the level of risk below.

Remember that earlier, in the first module, we discussed some of the hazards associated with lead exposure. It's now important to understand the levels of risk associated with various maintenance jobs that you may perform on lead-based painted surfaces. In general, the level of risk can vary greatly and is based upon how much lead dust is generated.

The risk associated with lead-based paint maintenance activities is generally referred to as low risk or high risk. The *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing 1995*, give more detailed guidance for low risk and for high risk.

The red icons in the Planning Tool indicate practices and tools that should be followed for high risk jobs.

Low Risk and High Risk Lead -Based Paint Maintenance Jobs

To understand Question #3, we need to understand the conditions that make a low risk or a high risk job.

**LOW RISK
MAINTENANCE JOBS**

- Repair window panes
- Repair doors
- Replace or repair door locks
- Repair radiator leaks
- Patch walls
- Grounds keeping
- Routine vacancy preparation

IV-6

The key to determining risk is primarily the amount of dust and debris that will be created.

A “low risk” job is one in which:

- Minimal lead dust will be generated, and
- The coating (paint, varnish) and substrate (wood, plaster, drywall, metal, masonry) are in good condition, and
- Less than two square feet of surface area is involved.

Examples of typical low risk maintenance jobs include the following:

- Repairing window panes
- Repairing doors
- Replacing or repairing door locks
- Repairing radiator leaks
- Patching walls with small holes
- Grounds keeping
- Routine preparation for re-occupancy of vacant units if it doesn't involve major repairs

Ask students to identify other low risk activities.

LEAD JOB CHECKLIST

- High Risk =
- High levels of dust expected to be generated, or
 - Surface and paint in poor condition, or
 - Greater than two (2) square feet.



IV-7

High risk maintenance jobs are jobs in which:

- Large amounts of lead dust will be generated, or
- The coating (paint, varnish) and substrate (wood, plaster, drywall, metal, masonry) are in poor condition, or
- The activity disturbs over 2 square feet of surface area.

Examples of potentially high risk rehabilitation jobs include:

- Stabilize large amounts of badly deteriorated paint
- Knock out walls
- Replace windows
- Replace old or worn carpet
- Kitchen/bath remodel
- Replace kitchen cabinets

**POTENTIALLY HIGH RISK
REHABILITATION JOBS**

- Stabilize large amounts of badly deteriorated paint
- Knock out walls
- Replace windows
- Replace old or worn carpet
- Kitchen/bath remodel
- Replace kitchen cabinets

IV-8

**HIGH RISK MAINTENANCE JOBS
BEYOND SCOPE OF TRAINING**

The following high risk jobs are beyond the scope of this training:

- Replacing major building components
- Demolition
- Major Renovation
- Fire Restoration

IV-9



The following high risk maintenance jobs are beyond the scope of this training program:

- Replacing major building components
- Demolition
- Major renovation
- Fire restoration

Important: You can have an effect on the risk level of the job. For example, an area larger than two square feet can be handled with low risk if good work practices can control the dust. With this training, good judgment, and common sense, you can determine the risk and use appropriate practices and precautions to control the risk during low risk and many high risk activities.

Preparing for Re-Occupancy

A good example of reducing risk is to handle lead-based paint problems during vacancy preparation for re-occupancy. Vacancy presents a great opportunity. It is easier to do maintenance work and address lead-based paint problems in a vacant unit, because access is limited and there are no concerns about contaminating occupants' belongings or exposing occupants during the work. This is the optimal time to stabilize the paint.

In your usual preparation, you remove debris and repair damage to walls, woodwork, and fixtures. This is the time to do a careful visual assessment for paint deterioration. Then follow the work practices and cleanup procedures you will learn today to protect yourself and the next occupants from lead exposure.

4. Who will do the job?

Personnel must be trained, properly skilled for the activity, and medically qualified. If they have to wear a respirator, they must be fit-tested and properly trained.

What Additional Training is Required for These Jobs?

Large jobs where dust cannot be controlled and all other high risk maintenance jobs require additional training that includes:

- Personal exposure monitoring,
- Respiratory protection, and
- Medical surveillance.

LEAD JOB CHECKLIST

4. **Who will do the job?** *Personnel must be properly trained and skilled, if they will have to wear a respirator, they must be medically qualified, fit-tested, and trained.*

Name _____ Name _____

IV-10

These topics are not covered in this training program.

There are several resources available that provide information on these and other topics pertinent to high risk work.

U.S. Department of Housing and Urban Development (HUD)—*Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* is available from HUD USER at 800-245-2691.

U.S. Environmental Protection Agency (EPA)—EPA has the following courses:

- Residential Lead-Based Paint Abatement Model Training Course (for workers)
- Lead Abatement Training for Supervisors and Contractors
- Lead Inspector Training: U.S. Environmental Protection Agency Model Training Course Curriculum
- Lead-Based Paint Risk Assessment Model Curriculum

The Occupational Safety and Health Administration (OSHA) —General Lead Industry Standard (29 CFR 1910.1025) applies to maintenance activities that involve making or keeping a structure, fixture, or foundation in proper condition in a routine, scheduled, or anticipated fashion.

OSHA also has a Lead Construction Standard (29 CFR 1926.62). These standards include employee health and safety information that is similar to that found in the HUD Guidelines.

National Institute of Building Sciences (NIBS)—*Operations & Maintenance Work Practices Manual for Homes and Buildings*, including specific procedures for high risk maintenance jobs and interim controls. This document is available by calling NIBS at 202-289-7800.

State or Local Departments of Public Health or Departments of Labor—Some states may require training for lead-based paint-related activities, including those activities performed by maintenance personnel. The state agency regulating training requirements, such as the Department of Public Health or Department of Labor should be contacted for state requirements.

LEAD JOB CHECKLIST

5. How will residents be notified and affected?
 Notification: Phone _____ Letter _____ Time _____ Date _____

Work area instructions to residents
 Job scheduled: FROM: Time/Date ____ TO: Time/Date ____
 Resident asked to leave unit: FROM: Time/Date ____ TO: Time/Date ____
 Resident asked to move personal items? Yes No
 Temporary accommodations needed for resident? Yes No
 If "Yes" accommodation provided? Yes No
 If "Yes" WHERE _____ PHONE # _____

IV-11

5. How will residents be notified and affected?

It is the responsibility of the person who has had this training to properly notify the residents of the upcoming work. This notification procedure can be the same as the notification procedure of any maintenance-related activities already established by the facility. However, it should be modified to include the following information:

- Date the notification was delivered to the residents
- Date the work will take place and the time required to complete the work
- Instructions to the residents for moving personal items out of the work area
- Resident protection requirements (if any), including location of temporary accommodations (as determined by the trained individual).

LEAD JOB CHECKLIST

6. How will work be performed to minimize exposure to lead? *Circle specific cards to use for this job:*

Materials Card	Cleanup Cards
Equipment Card	Carpet Removal Card
Personal Protection Card	Decontamination Card
Work Practices Card	Quality Control Card
Prohibited and Unsafe Practices	

IV-12

6. How will work be performed to minimize exposure to lead?

Actions that minimize exposure start with planning. The supervisor (or other worker trained in lead safe work practices) should go through the Lead Safe Maintenance Planning tool and mark off the items that apply to this job.

On each instruction card the supervisor will circle all items and work practices the worker will use to safely perform the work. The cards are then attached to the work order.

For the rest of today, as we talk about how maintenance jobs are done, we will refer to each of these cards and discuss how they relate to the job. Right now, we are going to discuss the first three—materials, equipment, and personal protection. (These are three items that must be addressed before you go to the job site to ensure that all appropriate materials and equipment are there when you need them.) Each of these instruction cards is discussed throughout the day. The other cards will come later, in other modules.

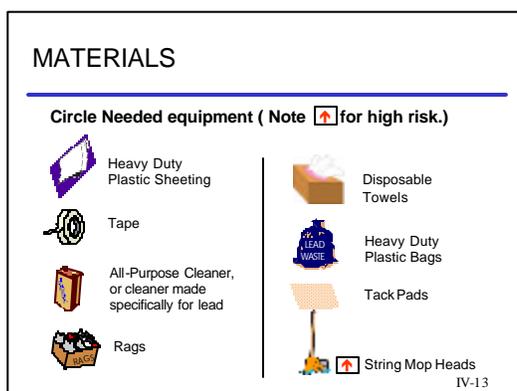
Note that the checklist requires English reading proficiency to answer the questions and keep records. The remaining cards are designed for workers who may not read English well to learn or recognize symbols for the procedures.

Materials

Have three piles of examples of all of the items on the materials, equipment and personal protection cards in the front of the room. Hand out the items or ask students to pick them up as you discuss each card. Have the students refer to the Materials and Equipment Cards. As the students to explain the purpose of each item on the Materials and Equipment Cards.

One training technique for involving all participants is to toss a foam rubber ball or a wadded paper ball to someone in the class. Whoever is holding the ball explains the item they are holding and then tosses the ball to the next person. (If they don't know the answer, they can just toss the ball on to someone else.) This technique gets everyone involved, includes some physical action that helps learning, and puts the responsibility of choosing the next responder on the class. Make sure all of the points below are covered by the class. Add anything they miss.

These are the disposable items that are used up and thrown away after the job.

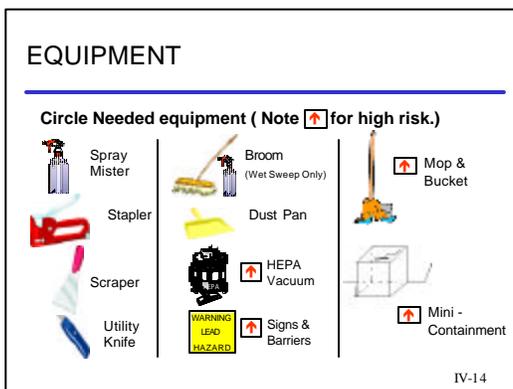


- Heavy Duty Poly Film**—To cover the floor immediately under the surface to be addressed. Area covered will range from an area 5 feet by 5 feet to the whole floor. Poly is also used to cover furniture, windows, vents, and any area that can collect or transmit dust.
- Tape**—To secure poly film and to seal the disposal bags. Duct tape works well and special blue masking tape is also easy on paint.
- All Purpose Cleaner or Cleaner Made Specifically for Lead**—To clean both the surface that is being repaired and the floor. Use according to the manufacturer's instructions.
- Rags**—To cleanup dust and debris.
- Heavy Duty Poly Bags**—To hold all waste.
- Towelettes**—To wash hands and face upon completion of work. They can also be used to cleanup after very small jobs.
- Tack Pads**—To collect dust in small or tight work areas. These are sticky sheets about 2 feet by 3 feet that catch dust and are disposed of following the job.

- ↑ Mop Heads**—To clean large floor areas on high risk jobs.

All materials listed on the Materials Card are disposable items that will be used and disposed of after the task is completed. Even if the material, like a mop head or rag, is still in good condition, it should be disposed of before leaving the job site to keep from contaminating the next residence. In a sequence of jobs with minimal cleanup, rags and mop heads may be thoroughly rinsed between jobs and disposed of at the end of the day.

Continue the tossing game so everyone in the class has an opportunity to discuss an item on the card until all items have been discussed.



Equipment

All of the items on the equipment card may be used again as long as they have been properly cleaned after each job.

- Spray Mister**—To mist work area to keep the dust down.
- Stapler and Staples**—To secure polyethylene sheeting and signs/barrier tape. Staple about every six inches.
- Scrapers**—To remove loose paint while misting.
- Utility Knife**—To score the edges of painted hardware.
- Broom**—For sweeping up moistened dust and debris.
- Dust Pan**—For collecting and disposing of moistened debris.
- ↑ HEPA Filtered Vacuum**—To pick up large amounts of lead dust on work surface, floor, and workers' clothing. Required for high risk work.
- ↑ Signs/Barrier Tape**—To mark off the work area. Required for high risk activities.
- ↑ Mop Handles**—To attach to mop heads to wet mop and rinse large areas.
- ↑ Buckets**—To hold water, cleaner, and wringer buckets for the three bucket system used on high risk jobs.
- ↑ Mini Containment**—To minimize the size of the work area for high risk activities.

Personal Protection

Ask students to refer to their Personal Protection Card. Ask them to explain the purpose of each item on the Personal Protection Card. You may again use real items for the class to show and describe.

The supervisor will decide what personal protection is needed for the job and will circle the pictures and words on the card. The decision is based on the size and location of the job, the amount of dust that may be generated, and the possible risk of lead exposure to the worker.

No personal protection may be needed on very small jobs if you use good work practices that minimize the dust. Then it is just common sense that the need for protection increases as the size and the extent of lead-based paint disturbance increases.

All personal protection icons that are circled on the personal protection card are needed for the maintenance job.

- Protective Eye Wear**—To keep dust and debris out of your eyes.
- Coveralls**—Disposable or recyclable protection for your clothes. Coveralls are generally recommended for low risk work, although some jobs are so small they are not needed. If you don't wear them, you should change into clean clothes before you go home.
- Latex/Rubber Gloves**—Protect your hands from strong cleaners, which can dry out and irritate your hands if used repeatedly over a long period of time.
- Disposable Cotton Gloves**—Keep gross amounts of lead debris off your hands. (Gloves must be worn while doing high risk activities.) If gloves are not worn, extra care should be taken when you wash your hands to remove all lead dust from beneath your fingernails.
- Disposable Full-Body Coveralls/Recyclable Clothing**—Clothing required for high risk work when gross amounts of lead dust would adhere to your hair and street clothes, so that lead dust is not carried home.

PERSONAL PROTECTION

Circle needed protection (Note:  for high risk)



Protective
Eye Wear



Latex/ Rubber
Gloves



Disposable
Cotton
Gloves

IV-15

**PERSONAL PROTECTION -
CONTINUED**

Circle needed protection (Note:  for high risk)



•Disposable Full-Body
Coveralls/Recyclable
Clothing



Respirators
w/HEPA Filters 





IV-16

- ❑ **Respirators with HEPA Filters (N100 or higher)**—
Respirators are used to prevent inhaling airborne lead while doing high risk work that creates large amounts of dust based on the result of employer's assessment of worker exposures. Workers using respiratory protection during high risk work must be trained, fitted, and have medical clearance.

Module V—Doing Lead-Based Paint Maintenance Jobs

Module time: 80 minutes

MODULE V - DOING LEAD-BASED PAINT MAINTENANCE JOBS

Learning Objectives

- Explain lead safe work practices: Work Smart, Work Wet, Work Clean.
- Use cleanup procedures for low risk and high risk jobs.
- Use steps to remove carpet.
- Explain decontamination of self and equipment.
- Complete a quality assurance checklist.

V-1

Show Preparation Video 4



WORK SMART

Circle needed work practices
(Note:  for high risk.)

- Protect and inform residents
- Wear proper personal protective clothing
- Be alert to special situations
- Shutdown HVAC and/or isolate vents
- Remove and protect resident belongings
- Install heavy duty plastic firmly and securely
-  ▪ Isolate area with heavy duty plastic sheeting

V-2

When we complete this training module, you should be able to:

- Explain lead safe work practices: Work Smart, Work Wet, Work Clean.
- Follow cleanup procedures for low risk and high risk jobs.
- Follow steps to remove carpet.
- Explain decontamination of self and equipment.
- Complete a quality assurance checklist.
- Plan low and high risk jobs using the Planning Tool.

Video Segment 4 discusses the preparation steps before starting a lead hazards task. It shows how to work smart.

Have the students refer to the first Work Practices Card. You may use some of the following questions as you go through the first card. Ask students to talk about issues raised in the video. Make sure that everyone understands the reasons for the activities on the work practices card. Emphasize the key points on working smart on both inside and outside jobs.

All work practices that are circled must be done for each maintenance job, beginning with the first item circled and reading down to the last circled item.

Work Smart

Working smart means keeping your eyes open, using all the required materials and equipment correctly, and following the lead safe work practices in the **Planning Tool**.

- Protect and Inform Residents
- Keep residents out of the work area
- Minimize dust
- Cleanup thoroughly

Q: Why should you wear Protective Clothing?

Q: Has anyone ever suited up for a high risk job like the one shown in the video?

Q: Who at your workplace is qualified to wear a respirator?

- Q:** What are the requirements for being qualified to wear a respirator?
- A:** Training on use and care of the respirator and medical approval and fit-testing to wear a respirator.
- Be Alert to Special Situations—Be on the lookout for problems that could contribute to potential lead exposure.
- Q:** What are some—examples of special situations?
- A:**
1. Start a small job, and find that the substrate is in poor condition and more dust will be involved.
 2. Fix a fixture and find deterioration of the wall behind it.
 3. Children appear while you are working.
- Q:** Why isolate the work area for an exterior job?
- A:** It is important to isolate an exterior work area so lead hazards are not absorbed into the soil and not tracked into the unit.
- HVAC Shutdown and/or Isolate Vents with heavy-duty plastic where vents can be contaminated—Shut off the forced air HVAC system and/or seal the vents within the work area with heavy duty poly film and tape. On a very small job, where you can control the dust with lead safe work practices, you may not need to worry about the HVAC. Where some dust will be created, shut down the HVAC. On large jobs, shut it down and seal the vents.
- Q:** Why is it important to shut off the forced air HVAC?
- A:** To keep from spreading the dust to other rooms where it will settle and will need to be cleaned up to protect children in the residence.
- Q:** What are your reactions to the amount of dust it takes to create a lead hazard (refer to the packet of sweetener in video)?
- Q:** Are there any other tips that you have on securing the poly film?
- Q:** Has anyone in the class ever installed a poly barrier?
- Remove/Protect Resident Belongings—For low risk work, move all furniture, toys, and other items out of the immediate work area. For high risk work, furniture, toys, and other objects should be either moved to another room or covered with heavy duty poly film.

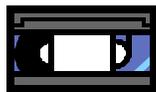
Q: How do you handle situations when the residents haven't removed their belongings?

- Securely Install Poly Film “Drop Cloth”—For low risk work, lay a piece of poly film on the floor, immediately under the area to be addressed. The poly film should be at least 5 feet by 5 feet and extend beyond the work area. If the low risk work is to be done on the ceiling, then the entire floor must be covered with the poly film.

Secure poly film with tape or staples to the floor so they will not damage the surfaces. If the work area will create dust across the room, secure poly over the entire floor.

For very dusty high risk work, the poly film should cover the entire floor of the room. The entryway should be covered with poly film. You may make a Z-fold partition to keep dust from going through the opening. Hang one sheet of poly over the entrance way. Secure the top and one side with tape or staples. On the other side of the entrance, seal the top and the opposite side. If you wipe your feet on the tack pad before exiting the area, you can then walk through without tracking or letting dust out of the room.

Show
Performing the
Task Video 5



Work Practices While Performing the Task

This video discusses ways to perform the task safely. The video will cover the second Work Practices Card—Work Wet and Work Clean.

Refer students to the second work practices card. Make sure each student is able to follow the icons and understand the activity.

WORK WET

Circle needed work practices
(Note: for high risk.)



- Mist work area with water
- Wet scrape, sand, pry, saw, plane, drill, and remove plaster / drywall
- Foam work area

V-3



Work Wet

To work wet means to constantly keep the surface damp by lightly misting the area with water. Misting is used for both low risk and high risk work. Keeping the area wet minimizes airborne lead dust that can be inhaled, could settle on skin or clothing, or could get tracked to other areas of a dwelling. Working wet is important for containing dust for both interior and exterior jobs.

- Mist Work Area with Water—Mist the area to be addressed with a spray mister containing water. The size and kind of sprayer depends on the size of the area to be repaired. This is not to be done on any surface in proximity to electrical outlets and switches. Instead, you can lightly dampen a sponge or rag and carefully apply it to the surface. Don't use too much water so that the sponge

drips. It should only be damp enough to hold the dust, and water should not run onto the floor.

- Wet Scrape, Sand, Pry, Saw, Plane, Drill, and Remove Plaster/Drywall—Mist the area prior to and during these activities to keep down dust.
- Foam Work Area—Spray a small amount of shaving cream on the area to be drilled. The dust will stick to the shaving cream so you can wipe it off the surface and drill.

Ask students if they have used any of these practices. Discuss successes and difficulties. Ask them to suggest other ways to work wet.

WORK CLEAN

Circle needed work practices
(Note: ↑ for high risk.)

-  Tack Pad
 - Use a tack pad
 - Install catch bags under work area
-  Clean As You Go
 - Use mini containment
 - Keep debris picked up
-  Minimize Dust Releases
 - Control settled dust
-  Dust Containment
 - Control settled dust

V-4

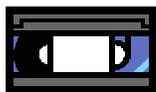
Work Clean

To work clean means to perform the work in such a manner as to generate as little dust and debris as possible, and to keep all dust and debris inside the work area on both interior and exterior jobs. To accomplish this the following are done:

- Use Tack Pad—Tack pads are especially useful to collect dust in very small areas. The dust adheres to the pad, so cleanup is easier. It does not work well if it gets wet.
- Install Catch Bag Under Work Area—A neat trick is to secure a heavy duty poly disposal bag directly underneath the area to be repaired, especially under a window. The bag will catch debris that is generated by drilling or cutting, as well as paint chips generated during paint stabilization.
- ↑ Use Mini Containment (high risk)—For a dusty high risk job, a mini containment system may help to contain dust while work is done. It is especially useful in high traffic areas, and to eliminate laying poly over a large clean area.
- Keep Debris Picked Up—It keeps you from tracking and spreading the lead dust and makes cleanup easier.
- Control Settled Lead Dust—For low risk jobs, you may mist the debris to control the dust and sweep it up with a broom and dust pan. For high risk work, pick up lead dust with the HEPA filtered vacuum. You may prefer to use a HEPA filtered vacuum on all jobs, if one is available.

Ask students to give additional examples or tips on how they work clean.

Show Cleanup Video 6



Cleanup

The next video discusses procedures for cleanup and decontaminating yourself and equipment after a lead-based

paint maintenance task. The video will cover the following cards from the Planning Tool: Cleanup, Decontamination, and Quality Assurance. Look for differences in cleanup for low risk and high risk jobs.

The cleanup cards outline the steps to properly cleanup after performing a lead task. The steps are numbered to follow in sequence, starting from the top and continuing downward to the last item.

While there is some concern of lead exposure to yourself during the cleanup of the work area, the main concern is for the residents. If the cleanup is incomplete or inadequate, any remaining lead dust or debris puts the residents at risk of lead exposure long after the job is completed.

Cleanup—General Principles

Although there are many steps to the cleanup process, you can remember them by grouping them into a four part system:

1. Bag all the debris and disposables you used.
2. Take care of your tools (clean or bag to clean later).
3. Clean the work surfaces and floor in the work area (interior).
4. Seal, label, and dispose of all debris.

Overall, the process is the same, whether the job is low risk or high risk. The larger and higher risk the job, the more cleanup and precautions you will use.

The **Planning Tool** has two separate cleanup cards:

- One for small low risk jobs, and
- One for larger high risk jobs that require additional steps and equipment.

Go through the activities on the low risk card. Point out that for a simple job there may only be a few tasks circled, e.g., wet wipe, rinse, place debris in poly bag, and dispose of properly. More will be circled for more complex tasks. Read through the steps and answer questions students may have.

Cleanup—Low Risk

1. Place large debris heavy duty poly bags. Do not fill more than 1/2 to 2/3 full.
2. Wet wipe tools.
3. Mist debris on work area poly film.

CLEANUP: GENERAL PRINCIPLES

- Bag debris and disposables
- Clean or bag tools
- Clean work surfaces and floor
- Seal, label, and dispose of debris



V-5

CLEANUP - LOW RISK

- Place large debris in 6 mil poly bags
- Wet wipe tools
- Mist debris on work area poly film
- Fold poly film "dirty side in" and place in poly bag and label
- Clean all surfaces in the work area
- Gooseneck seal and label poly bag
- Remove all materials, tools and debris from work area
- Properly dispose of bagged debris



V-6

4. Fold poly film “dirty side in.” Place in poly bag and label.
5. Clean all surfaces in the work area. Work from the top, down, cleaning the floor last. Include all vertical and horizontal surfaces.
 - Scrub all surfaces with detergent. Scrubbing (not simply wiping) is necessary to remove dust.
 - Rinse all surfaces with clean water—this is to remove any cleaner residue that holds the lead dust.
6. Gooseneck seal and label the heavy duty poly bag.
7. Remove all materials, tools, and bagged debris from work area and residents.
8. Properly dispose of bagged debris.

You may have questions about disposal of lead waste. Your state environmental agency can answer specific questions on lead waste disposal. Call the National Lead Information Center (1-800-424-LEAD) for the telephone number for your state agency. Regardless of whether lead waste is considered hazardous, you don’t want children, pets, and scavengers to get into it. It is best to bag, label, and secure it until the lead containing materials are removed from the property.

Divide the class into groups. In each group, have each student take a turn going through the steps for low risk cleanup using the equipment, while the others coach. Mention that low risk jobs will fall under the homeowner exemption for disposal of waste.

Cleanup—High Risk

1. Place large debris in heavy duty poly bags. Do not fill more than 1/2 to 2/3 full.
2. Place contaminated tools/equipment in poly bag and seal.
3. Fold poly film “dirty side in.” Place in poly bag and label.
4. Clean all surfaces in the work area. Work from the top, down, cleaning the floor last. Include all vertical and horizontal surfaces.
 - Vacuum all horizontal surfaces slowly with a HEPA-filtered vacuum. Vacuum all ledges, sills, stools, etc. Vacuum the floor of the work area. Use corner tools in corners, cracks of trim and between floor boards. Vacuum floors with a floor brush and carpets with a carpet tool.

CLEANUP-HIGH RISK

- Place large debris in heavy duty poly bags
- Place contaminated tools/equipment in poly bag and seal
- Fold poly film “dirty side in”. Place in poly bag and label
- Clean all surfaces in the work area
 - HEPA vacuum
 - Mist and scrub
 - Rinse the rag / mop
 - HEPA vacuum a second time



V-7

**CLEANUP-HIGH RISK -
CONTINUED**

- Gooseneck seal and label poly bag
- Remove all materials, tools and debris from work area
- Properly dispose of bagged debris



V-8

- ❑ Mist and scrub. Wet a rag or mop with detergent then wring out. Mist surface or rag as you clean. Scrub the surfaces (wiping is not sufficient to remove lead dust).
 - ❑ Rinse the rag/mop. Squeeze rag/mop into an empty bucket. Rinse out in a water bucket. Squeeze into the empty bucket. Repeat as needed. Change rinse water often. Use paper towels first if surfaces are very dirty. Replace the rag/mop when it looks dirty.
 - ❑ Make a second pass over all surfaces with a HEPA-filtered vacuum.
5. Gooseneck seal and label heavy duty poly bag. Be sure it is not more than 1/2 to 2/3 full, to leave room for gooseneck and seal.
 6. Remove all materials, tools, and bagged debris from work area and residence.
 7. Properly dispose of bagged debris.

You may have questions about disposal of lead waste. Your state environmental agency can answer specific questions on lead waste disposal. Call the National Lead Information Center (1-800-424-LEAD) for the telephone number for your state agency. Regardless of whether lead waste is considered hazardous, you don't want children, pets, and scavengers to get into it. It is best to bag, label, and secure it until the lead containing materials are removed from the property.

Divide into the same groups to practice going through the 15 steps in high risk cleanup like you did for the low risk job.

Removing Carpeting

**Show Carpet
Removal
Video 7**



Vacancy preparation for occupancy turnover often requires removal of old carpet. The next video segment shows Ben and Scott removing carpet. Carpet removal presents some special problems, which can create extreme hazards if not handled properly. Because carpets collect and hold lead dust carpet removal should be treated as a high risk job.

Note, this video sequence also shows a dust test. Dust testing is not required before removing carpet or before doing any other maintenance activity. However, it can be a useful tool in determining if a hazard exists before or after maintenance activities. It is shown here to demonstrate the steps involved in dust testing.

Review the Carpet Removal Card with the class.

CARPET REMOVAL 

CARPET

- Mist carpet
- Loosen wall-to-wall carpet from tack strips or glued areas
- Cut carpet into manageable portions with utility knife
- Roll carpet “pile side in” poly, seal with tap, and remove while misting carpet backing from area

PAD

- Cut padding into manageable portions with utility knife
- Roll pad while misting
- Wrap carpet & padding in 6 mil plastic sheeting, gooseneck seal with tape, and remove from the area

V-9

Carpet

1. Mist carpet.
2. Loosen wall to wall carpet from strips or glued areas.
3. Cut carpet into manageable portions with utility knife (about every 6 feet).
4. Roll carpet “pile side in” while misting carpet backing. Wrap carpet in heavy duty poly sheeting, or place in a heavy duty poly bag, gooseneck seal with tape, and remove from the area.

Pad

1. Cut pad to manageable portions with utility knife.
2. Roll pad while misting.
3. Wrap padding in heavy duty poly sheeting, or place in a heavy duty poly bag, gooseneck seal with tape, and remove from the area.

CARPET REMOVAL – CONTINUED 

FLOOR

- HEPA vacuum floor area
- Rinse/mop floor area and baseboards with cleaner
- Wet mop floor area and baseboards
- HEPA vacuum floor again

V-10

Floor

1. HEPA vacuum the floor area.
2. Wet mop the floor area and with all purpose cleaner or a cleaner made specifically for lead.
3. Rinse mop the floor area and baseboards.
4. HEPA vacuum floor area again.

Ask who in the class has removed carpet. Ask what they would now do differently to remove carpet that is contaminated with lead-based paint. What would they do differently from the way they removed carpet in the past.

DECONTAMINATION

Circle Needed equipment (Note  for high risk.)

PERSONAL

- Dry decontamination - HEPA vacuum clothing
- Wipe hands and face with towelettes
- Wash face and hands with soap and water
- Shower with soap
-  Recyclable coveralls go to the special laundry
-  Launder work clothes separately from family’s clothing

EQUIPMENT

- Wipe with towelettes or damp rags
-  Clean tools and equipment away from the work area

V-11

Decontamination

Have the students refer to the Decontamination Card.

Decontamination is performed after all the cleanup activities are completed.

Personal decontamination ensures that any lead dust on the face, body, and clothes is removed. This minimizes the risk of inadvertently ingesting lead while eating, drinking, or smoking; carrying lead dust to other parts of the dwelling unit; or taking the lead into your car or home.

Equipment decontamination ensures that any lead dust on equipment is thoroughly removed. This prevents contamination of other areas the next time you use the equipment.

The steps for decontamination are fairly simple. Again, follow items that are circled by your supervisor on your Decontamination Card.

Ask the students to explain the purpose of each item on the Decontamination Card.

Personal

- Dry Decontamination—HEPA vacuum clothing to remove dust before leaving the site if you do not wear protective clothing. You may also dry decontaminate between jobs if you wear protective clothing from one job to another.
- Wipe Hands and Face with Towelettes—Do a quick wash-up before leaving the job. Place the used towelettes/hand wipes in the disposal bag. Seal the disposal bag with tape.
- Wash Hands and Face with Soap and Water—Wash before eating, smoking, drinking or applying cosmetics, and at the finish of the job. If gloves are not worn, be sure to clean well under your fingernails.
- Shower—Shower on the job if feasible. It is necessary to shower after high risk jobs and recommended following low risk work. IF a shower is not available at work, a portable shower may be set up and used.
- Launder Personal Clothes/Coveralls Separately—Changing before leaving the work site is highly recommended. If the employer supplies recyclable coveralls, they are sent by the employer to a special laundry facility. The laundry must be informed that the clothes have been exposed to lead.

Equipment

- Clean All Tools
- For low risk jobs, clean tools by wiping them off with towelettes/hand wipes or damp rags at the site.
- For high risk jobs, tools may need to be sealed in plastic until they are cleaned at the shop after the job.

Ask students if they have any questions on the course so far.

QUALITY ASSURANCE

- Work properly completed
- Work area cleaned properly
- Contaminated debris bagged sealed and labeled
- Contaminated debris, tools, materials, and equipment removed from residence
- Residents belonging returned to original place
- resident notified of job completion
- Other “lead problems” noted and reported

V-12

Quality Assurance

Have the students refer to the Quality Assurance Card.

What is Quality Assurance?

Quality assurance is the last step of the maintenance job. It is a final check performed by the maintenance person or supervisor to see that the job was performed correctly and that the work area has been sufficiently cleaned. This check is done using the Quality Assurance Card.

The Quality Assurance Card is a checklist for inspection of the work and work area. It includes:

- Work properly completed as requested.
- Work areas cleaned properly.
- Contaminated debris properly bagged, sealed and labeled.
- Contaminated debris, tools, materials, and equipment removed from residence.
- Resident’s belongings returned to original place.
- Resident notified of job completion.
- Other “lead problems” noted.
- If yes, other lead problems reported.

You may choose to do an optional dust wipe test. This is one way of determining proper cleanup and that the amount of remaining lead dust is acceptable. We will talk more about this in Module VII. Note that a dust wipe is a part of the clearance examination that is required in HUD-assisted housing.

If the quality assurance check shows visible dust or debris in the area (or if a dust test shows lead contamination), this condition must be corrected. It is important to do the job right the first time. Correcting a condition may require you or another maintenance person to prepare the work area again, wear protective clothing, and/or repeat all cleanup and decontamination procedures.

When the condition is found to be satisfactory, the maintenance person or supervisor checks off the space next to the statement on the card. This procedure is repeated for each statement. A copy of the checklist may be kept with the work order as a permanent record of the precautions taken on the job.

Ask the class to give examples of experiences where work was done improperly and what had to be done to correct it.

Module VI—Optional Hands-On Exercises: Practicing What You've Learned

Module time: 60 minutes

MOD VI - EXERCISES: PRACTICING WHAT YOU'VE LEARNED

- Use the planning tool to plan a job.
- Set up the worksite for a lead-safe job.
- Use lead safe work practices.
- Clean-up the worksite.

VI-1

SCENARIO

You work in a 1950s apartment building. A leak in Unit #13 has caused serious damage to Unit #3 below. The leak has been fixed in Unit #13 but now you need to fix the wall in Unit #3. The wall is 10 x 8 feet and all the paint is damaged and peeling.

VI-2

LARGE GROUP QUESTIONS

- Is this a lead job?
- Is this a high risk or low risk activity?
- How many persons are needed for this job? Who can do the work?

VI-3

This hands-on exercise module is optional but highly recommended for all audiences. It was designed to reinforce the methods reviewed in earlier modules. This hands-on exercise takes some planning to make it work. Please see the Exercise Instructions, provided at the end of this module.

When we complete this training module, you should be able to:

- Use the planning tool to plan a job
- Set up the worksite for a lead-safe job.
- Use lead safe work practices.
- Cleanup the worksite.

Scenario

You work in a 1950s apartment building. A leak in Unit #13 has caused serious damage to Unit #3 below. The leak has been fixed in Unit #13 but now you need to fix the wall in Unit #3. The wall is 10 x 8 feet and all the paint is damaged and peeling.

You have your planning tool as well as some helpful checklists (Attachment 1: Skills Assessment Checklist for Exercise). Your supervisor (trainer) will be coming around to assess your work.

Large Group Questions

As a large group, answer the following questions:

- Is this a lead job?

Yes. The building was constructed prior to 1978, so assume presence of lead-based paint, unless paint testing confirms the absence of lead-based paint.

- Is this a high risk or low risk activity?

The job is typically high risk because of the size and location of the damage.

- How many persons are needed for this job? Who can do the work?

Two general maintenance workers who have been trained on lead-based paint operations and maintenance can do this job.

SMALL GROUP EXERCISES

- **Fill out the planning tool.** In your small group, fill out the planning tool for this job. You have 10 minutes.
- **Prepare the work area.** Collect the materials necessary and prepare the work area. The attached checklist gives you some guidance. You have 10 minutes.
- **Stabilize the paint.** Protect yourselves and work safely. The attached checklist gives you some guidance. You have 20 minutes.
- **Clean the area.** Clean the area so that it is ready for reoccupancy. The attached checklist gives you some guidance. You have 10 minutes.

VI-4

Small Group Exercises

Break into small groups to complete the following four exercises.

- 1 Fill out the planning tool.** In your small group, fill out the planning tool for this job. You have 10 minutes.
- 2 Prepare the work area.** Collect the materials necessary and prepare the work area. The attached checklist gives you some guidance (See Attachment 1: Skills Assessment Checklist-Paint Stabilization). You have 10 minutes.
- 3 Stabilize the paint.** Protect yourselves and work safely. The checklist (Attachment 1) gives you some guidance. You have 20 minutes.
- 4 Clean the area.** Clean the area so that it is ready for reoccupancy. The checklist (Attachment 1) gives you some guidance. You have 10 minutes.

Exercise 1: Planning Tool

Fill out your planning tool for this job. As you do so, think about the questions below.

Circulate throughout the room during the exercise to make sure people are progressing.

After five minutes, tell the groups to finish up. After ten minutes, do a quick debrief. Ask one group what they marked on each page of the planning tool and confirm that the rest of the groups agree with that answer. Clarify any misconceptions. Questions to cover include:

1. What materials (consumables) will you need? (Circle the proper icons on the Materials Card.)

Heavy duty poly film and bags
Tape
Cleaner
Rags
Mop heads

2. What equipment will you need? (Circle the proper icons on the Equipment Card.)

Spray mister
Utility knife

Scraper
Broom and Dust Pan
HEPA filtered vacuum
Signs/barrier tape
Buckets
Mop handles

3. What personal protection will you need? (Circle the proper icons on the Personal Protection cards.)

Protective eye wear
Cotton or latex gloves are optional
Full body coverall
Respirator (depending on exposure levels)

4. What work practices should you use to do this job? (Circle the proper icons on the Work Practices cards.)

Work Smart

Protect and inform residents.
Be alert to special situations.
Shut down HVAC in area and seal vents.
Install poly film, catch bag, or use tack pad.
Isolate work area by installing a “Z-fold partition” at doorway.

Work Wet

Mist work area.
Wet scrape, wet sand, etc.

Work Clean

Keep debris picked up.
Control settled dust.

5. Which procedures should you follow for the cleanup? (Circle the proper icons on the Cleanup Card.)

Follow the high risk cleanup, including wet wiping and HEPA filtered vacuuming the entire area if dust is noted throughout.

6. Who is responsible for completing the Quality Assurance Card?

The supervisor, because it is a high risk job (potentially large amounts of dust may be generated or exist from the damaged ceiling). The large work area may distribute dust/debris. It is an area where people eat and children play, therefore a quality job is very important and should be verified by the supervisor.

Exercise 2: Set Up

Circulate throughout the room during the exercise to make sure people are progressing. Use the checklist and note any problems with each group. Correct problems as you see them. After 5 minutes remind everyone to finish up. After ten minutes, do a brief debrief. Point out common problems in setting up work.

- Setting up the work area.** Work in your small group to set up the work area. Use your checklist (Attachment 1: Skills Assessment Checklist-Paint Stabilization)

Exercise 3: Work Safe

Circulate with a copy of the checklist and point out any problems with a group's performance. After 10 minutes, encourage them to finish up. After 15 minutes do a brief debrief to highlight any common problems

- Working safely.** In your small group, perform the paint stabilization. Refer to the skills assessment checklist (Attachment 1: Skills Assessment Checklist-Paint Stabilization) for guidance.

Exercise 4: Clean-up

Circulate with a copy of the checklist and point out any problems with a group's performance. After 5 minutes, encourage them to finish up. After 10 minutes do a brief debrief to highlight any common problems

- Cleaning up.** In your small group, clean your work area. Refer them to the skills assessment checklist (Attachment 1) for guidance.

Summary

Ask participants what they learned and what they found was harder or easier than they initially thought. Reemphasize key procedures.

- What did you learn from this exercise?
- What was the most difficult part?
- What was easiest?

Trainer Notes for this exercise

To make this exercise go smoothly, you need to prepare well and remain actively involved in the exercise during class time.

These instructions walk you through how to:

1. Prepare for the exercise
2. Introduce the exercise – large group questions.
3. Supervise small group exercises.

- Planning tool
- Worksite set-up
- Stabilizing paint
- Cleanup

4. Debrief the exercise

1. Prepare the exercise

Select an appropriate training location when conducting hands-on training. Because of size or other limitations, some training rooms are not conducive to hands-on activity.

Prepare the simulated deteriorated lead-based painted surface prior to the class, and allow time for paint to dry. Create deteriorated or damaged paint by using a heat gun or scraper. Use of old lead-painted components is not recommended for training.

Assemble all supplies and equipment needed to do the hands-on exercise before the training class. These include:

- Heavy duty poly film and bags
- Tape
- Cleaner
- Rags
- Mop heads
- Spray mister
- Utility knife
- Scraper
- Broom and Dust Pan
- HEPA vacuum
- Towelettes/hand wipes
- Signs/barrier tape
- Buckets
- Mop handles
- Protective eye wear
- Cotton or latex gloves are optional
- Full body coverall
- Respirator (Respirators may be used during this exercise at the trainer's discretion. If participants use respirators during the exercise they must be used safely. If participants

do not use respirators during the exercise, trainers should emphasize how and when they should be used on the job.)

2. Introduce the Exercise-Do large group questions.

Read the scenario aloud. In the large group, walk through the three introductory questions in the student materials (slide VI-3).

3. Supervise the three small group exercises.

Then, outline the rest of the exercise and break people into groups of 2–3. Tell them the time limits for each part.

4 Debrief the exercises.

When all parts of the exercise are complete, debrief the exercise by asking participants what they learned.

Module VII — Clearance: Making Sure the Job is Complete

Module time: 10 minutes

MODULE VII - CLEARANCE

Learning Objectives

- Explain the basic steps involved in clearance testing.
- Explain how clearance testing affects their job performance.

VII-1

WHAT IS CLEARANCE?

- Clearance ensures that a unit is safe for re-occupancy after work is done.
- Clearance testing has two parts:
 - Visual assessment
 - Dust sampling

VII-2



WHAT IS CLEARANCE?

- Clearance is required after certain renovation, remodeling or maintenance work, in HUD-assisted housing built before 1978.
- Clearance must be done by a person who did not perform the work.
- Clearance must be done by a qualified person.
- Clearance is performed in the work area.

VII-3

This module is required for HUD audiences but highly recommended for other audiences. Clearance must be done for HUD properties but should be considered for other work because it is the only way to show a unit is safe for occupancy.

When we complete this training module, you should be able to:

- Explain the basic steps involved in clearance testing
- Explain how your job performance affects the outcome of the clearance test

What is Clearance?

Performing “**Clearance**” means checking that the work area is not contaminated with lead dust after work is completed. Here are some important facts about clearance:

- 1. Clearance ensures that a unit is safe for re-occupancy after work is done.**
- 2. Clearance testing has two parts:**
 - Visual Assessment.
 - Dust sampling. This involves using a wipe (similar to a baby wipe) to wipe an area. The wipe is then sent to a laboratory for analysis. The analysis tells us if any of the dust picked up by the wipe contains lead.
- 3. Clearance is required after certain renovation, remodeling or maintenance work, in HUD-assisted housing built before 1978.**
 - We will talk more about this in the module on regulations.
- 4. Clearance must be done by a person who did not perform the work.**
 - To ensure that the work is properly inspected, the person who conducts clearance should not be someone who performed the work.
 - For HUD-assisted properties, this is a requirement.
- 5. Clearance must be done by a qualified person.**
 - HUD requires that clearance be performed by a certified risk assessor, certified lead-based paint inspector, or a certified lead sampling technician.

- ❑ Alternatively, HUD allows a trained lead sampling technician under the supervision of a certified risk assessor or lead-based paint inspector.
- ❑ In properties that are not HUD-assisted, training and certification is recommended but not required.

6. Clearance is performed in the work site.

- ❑ Clearance is performed to ensure that the work site is properly cleaned.
- ❑ Clearance ensures that no lead dust is left behind.

What Does Clearance Mean to the Maintenance Worker?

Generally, maintenance workers do not perform clearance. However, clearance is important to workers because in order to complete a job, they must clean the work area sufficiently to pass clearance.

To know how and where to clean, it helps to know about the procedures in a clearance test. Remember, clearance involves:

- ❑ A visual assessment to identify any visible dust or debris, and
- ❑ Dust sampling.

You can imagine that in order to reach a level of cleanliness required to pass this rigorous test, you must continue to scrub and clean surfaces even after they appear visibly clean. This specialized cleaning and clearance process is the key to ensuring that areas are safe from lead hazards after a maintenance activity, and why the cleanup procedures outlined in Module V are so important.

The rest of this module goes into more detail about clearance procedures.

Visual Assessment

The first part of the clearance test is a visual assessment. The clearance examiner will look for dust, debris, residue or deteriorated paint in the work area and beyond.

To check exterior maintenance work, the clearance examiner will look for any visible paint chips, or debris.

If any remaining deteriorated paint, dust, chips, debris or other residue is found, the clearance examiner will require that the area be cleaned again before proceeding with dust testing. The cleaning procedure is the same: HEPA-vacuuming and wet

WHAT DOES CLEARANCE MEAN TO THE MAINTENANCE WORKER?

- Generally, maintenance workers do not perform clearance
- In order to complete a job, workers must clean sufficiently to pass clearance

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VISUAL ASSESSMENT

- The clearance examiner looks for dust, debris, residue and deteriorated paint
 - In the work area and beyond
 - Inside or outside
- If dust, debris or residue is found, re-clean the area

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mopping. The clearance examiner checks how well you cleaned up. Any remaining deteriorated paint, dust, chips, debris or other residue should be identified as a problem because the area is unlikely to pass a dust test.

Ask students to discuss the importance of the visual assessment as a component of clearance testing.

Remember that for interior jobs, a visual assessment alone will not verify that a work area has been cleaned adequately, so checking visually is not enough. Some lead dust is not visible to the naked eye and will not be seen during this visual part of the clearance test.

DUST SAMPLING

- The clearance examiner takes samples from several surfaces in the work area
- Sampling done at least one hour after work has been completed, but no longer than 24 hours
- Samples sent to lab for analysis
- Wait for results

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Dust Sampling

Dust sampling is done to check the effectiveness of cleanup. For jobs that only include exterior work, no dust sampling is necessary, only a visual assessment needs to be performed.

- The clearance examiner will take samples from several surfaces in the area where work has been completed.
- This process should be done at least one hour after work has been completed to allow any remaining dust to settle before the test, but no longer than 24 hours later.

The results of the laboratory analysis will show the amount of lead found in the dust from the area sampled.

- Results are measured in micrograms of lead per square foot ($\mu\text{g}/\text{ft}^2$). A microgram is a millionth of a gram.
- The clearance examiner compares the results to acceptable levels established by EPA to determine if the area has passed, and then provides a written report with the results. You should also know that some states have different clearance standards.
- If the lab results show lead levels above the acceptable levels, the work area should be recleaned and retested until it passes.



Note: Cleanup should always be performed as if a dust wipe test were going to be done after job completion!

Module VIII—Regulatory Overview for Workers in Federally-Assisted Housing

Module time: 30 minutes

This module is required for HUD audiences only.

MOD VIII - REGULATORY OVERVIEW FOR WORKERS IN FEDERALLY-ASSISTED HOUSING

Learning Objectives

- List the major Federal agencies responsible for regulating lead-based paint and associated activities.
- Recognize that the Lead Safe Housing Rule requires lead safe work practices and clearance in HUD-assisted housing.
- Explain interim controls — their purpose and how they relate to maintenance.

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MOD VIII - REGULATORY OVERVIEW FOR WORKERS IN FEDERALLY-ASSISTED HOUSING

Learning Objectives, Continued

- Explain the key points of EPA's Pre-Renovation Education Rule.
- Explain the key points of OSHA rules that protect workers from exposure to lead.

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TITLE X

- The Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X)
- Set course for regulations developed by:
 - Department of Housing and Urban Development (HUD)
 - Environmental Protection Agency (EPA)
 - Occupational Safety and Health Administration (OSHA)

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When we complete this training module, you should be able to:

- List the major Federal agencies responsible for regulating lead-based paint and associated activities.
- Recognize that the Lead Safe Housing Rule requires lead safe work practices and clearance in HUD-assisted housing.
- Explain interim controls — their purpose and how they relate to maintenance.
- Explain the key points of EPA's Pre-Renovation Education Rule
- Explain the key points of OSHA rules that protect workers from exposure to lead.

Consider the following general notes on presenting regulations prior to delivery of this section. Cover the regulations in appropriate detail for the participants giving them a general understanding of the framework of regulations currently in place. Focus on specific items that they must know to do lead-safe work.

Title X (“Ten”)

Explain that the Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X) is the most significant lead poisoning prevention legislation because it created a housing based approach to receiving lead hazards. Title X was a road map for agencies to follow in developing a national approach to the lead problem.

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, ensure that federal policies incorporate lead hazard 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 Department of Housing and Urban Development (HUD), the Environmental Protection Agency (EPA), 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.

The rest of this module walks through some of the key actions taken by HUD, EPA and OSHA in this area.

HUD’s Lead Safe Housing Rule

Introduce the new HUD rule and outline 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.

The Lead Safe Housing Rule, also sometimes called “1012/1013” (Sections of Title X) covers Federally-owned and assisted housing built prior to 1978. This regulation is located at 24 CFR Part 35.

Some of the types of Federally-assisted housing covered by this regulation include public housing, privately-owned units occupied by families receiving tenant-based rental assistance (Housing Choice Voucher), units receiving project-based rental assistance, and housing receiving Federal rehabilitation assistance.

The requirements of this regulation depend on the activity and the type and amount of assistance received. The regulation became effective September 15, 2000.

Provisions of the rule that are interesting to the audience for this course are:

- ❑ **Lead Safe Work Practices.** Any maintenance, renovation, or lead hazard reduction work performed in HUD-assisted housing, on a surface known or presumed to have lead-based paint must be done using lead safe work practices. There is one exception to this rule — the “de minimis” (very small) amounts of paint— explained below.
- ❑ **Clearance.** After any maintenance, renovation, or lead hazard reduction work performed on a surface known or presumed to have lead-based paint, clearance is required. Like lead safe work practices, there is an exception for work on amounts of paint below the “de minimis,” as discussed below.
- ❑ **Interim Controls.** The Lead Safe Housing Rule recognizes a category of lead hazard reduction work called interim controls. They are described in detail below.

HUD’S LEAD SAFE HOUSING RULE

- Lead Safe Work Practices
 - “De Minimis” Standard
- Clearance
- Interim Controls

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Lead Safe Work Practices

The Lead Safe Housing Rule requires lead safe work practices, as described in this course, for any maintenance, renovation, or lead hazard reduction involving surfaces known or presumed to have lead. It specifies prohibited practices, requirements for protecting occupants, and preparing the work site. Special cleaning techniques must be used and clearance must be achieved.

The exception to this rule applies to disturbing very small amounts of paint, i.e., below the “de minimis.” HUD recommends, however, that lead safe work practices always be used.

The **de minimis** amounts are defined as less than:

- 20 square feet on exterior surfaces;
- 2 square feet in any one interior room or space; or
- for types of interior or exterior building components that are small, 10% of the area of the type of component.

Clearance

Clearance, as described in Module 5, is required by HUD after maintenance, renovation, and lead hazard reduction that are triggered by The Lead Safe Housing Rule. Some reminders about clearance:

- It consists of a visual assessment and dust testing.
- It is not required if work is below the de minimis, discussed above.
- It must be done by a certified risk assessor, lead-based paint inspector, lead sampling technician or by a trained lead sampling technician under the supervision of a certified risk assessor or lead-based paint inspector.
- Clearance must be done by a person who is independent from the people performing the work. Note that if an in-house maintenance team performs maintenance, the person who does the maintenance activity cannot also perform clearance on that activity.

Interim Controls

Discuss the components of interim controls with participants and what activities in their work may actually be interim controls. Cover appropriate State laws or regulations that may allow interim controls to be done by trained but uncertified individuals.

When people think about controlling lead-based paint, they tend to think about abatement. However, the Lead Safe Housing Rule recognizes less costly and complex measures that can be used to control certain less severe lead hazards. 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:

- Treating friction or impact surfaces by covering them or creating barriers to them.
- Treating chewable surfaces by covering them or creating barriers.
- Controlling dust-lead hazards, by creating smooth, cleanable surfaces, and maintaining the surfaces clean.
- Controlling soil-lead hazards, by using ground cover or fencing.
- Paint stabilization. This includes repairing the substrate and the cause of any damage before repainting.

A complete set of actions for addressing all presumed lead-based paint hazards in a unit is called standard treatments. Under the Lead Safe Housing rule, there is an option for owners to skip the testing step, presume that lead-based paint is present and then treat all potential hazards with this standard set of treatments. For example, all painted surfaces that may be subject to friction or impact are treated, all dust is cleaned up, surfaces are made smooth and cleanable, etc. See 24 CFR Part 35 for more information on standard treatments.

People who take this course are qualified to perform interim controls and standard treatments in HUD-assisted housing. Anyone who does not take this or another HUD-approved course must be supervised by a certified abatement supervisor and trained in accordance with OSHA’s Hazard Communication Standards.

More on HUD’s Lead Programs

If these rules apply to you, it is useful to keep a copy of the HUD Lead Rule. A copy of the Rule may be obtained from the National Lead Information Center by calling 1-800-424-LEAD or by downloading from the HUD Office of Healthy Homes and Lead Hazard Control Web site at www.hud.gov/offices/lead.

The HUD **Lead Hazard Control Grant Program** has completed lead hazard reduction in over 30,000 homes. Most of

HUD/EPA DISCLOSURE RULE

- Owners of pre-1978 properties must disclose information about lead to potential buyers or renters
- Homebuyers have 10 days to obtain an inspection or risk assessment
- Distribution of the HUD/EPA/CPSC pamphlet “Protect Your Family from Lead in Your Home” to all new buyers and renters

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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.

HUD/EPA Disclosure Rule

The Lead-Based Paint Disclosure Rule (also known as Section 1018 of Title X) requires that owners of pre-1978 properties disclose any known information about lead to potential buyers or renters. The Rule also allows a homebuyer 10 days to obtain an inspection or risk assessment. Finally, the Rule requires the distribution of the HUD/EPA/CPSC pamphlet “Protect Your Family from Lead in Your Home” to all new buyers and renters.

This requirement makes it easier for renovation and remodeling 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. It is important to assume lead-based paint is present if conditions are unknown and the house was built prior to 1978.

The pamphlet “Protect Your Family from Lead in Your Home” may be obtained from the National Lead Information Center by calling 1-800-424-LEAD or by download from www.epa.gov/lead or www.hud.gov/offices/lead

EPA'S ACTIONS ON RENOVATION AND REMODELING

- EPA Pre-Renovation Education Rule
 - The Lead Hazard Notification Pamphlet (“Protect Your Family”) must be provided no more than 60 days before starting remodeling or renovation work. (Note: This requirement does not apply to maintenance activities.)
 - Repairs of areas less than or equal to 2 square feet are exempt from this requirement.
 - Emergency actions are exempt.
- EPA Training

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EPA's Actions on Renovation and Remodeling

Title X required EPA to study and provide guidelines for conducting renovation and remodeling activities around lead-based paint. EPA was required to develop guidelines for the conduct of renovation and remodeling activities that may create a risk of exposure to dangerous levels of lead. EPA studied the extent to which people engaged in renovation and remodeling activities are exposed to lead, or disturb lead and create lead-based paint hazards. EPA also created a model lead safety curriculum for renovators and remodelers. HUD adapted this course and re-titled it: “Addressing Lead-Based Paint Hazards During Renovation, Remodeling and Rehabilitation in Federally-Owned and Assisted Housing.” This adaptation is available for download from the HUD Office of Healthy Homes and Lead Hazard Control Web site at www.hud.gov/offices/lead/lbptraining.cfm.

There may be regulations in the future for individuals performing this type of work around lead.

EPA Pre-Renovation Education Rule

EPA's Pre-Renovation Education Rule (also known as PRE or Section 406(b)) is an important part of Title X for companies performing renovation or remodeling work because it requires communication with the owner about lead before work begins. Specifically, it states that:

- The Lead Hazard Notification Pamphlet (“Protect Your Family”) must be provided no more than 60 days before starting remodeling or renovation work. (Note: This requirement does not apply to maintenance activities.)
- Repairs of areas less than or equal to 2 square feet are exempt from this requirement.
- Emergency actions are exempt. Emergencies are defined 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 and renovations to repair a pipe break in an apartment complex.

EPA Training

Sections 402 and 404 of Title X directs EPA to develop training and certification requirements for lead professionals. 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

Standardized training one way to ensure that certified lead professionals are competent in performing their jobs. The Environmental Protection Agency (EPA) has established training requirements and model curricula that constitute the basis of training in most states. Some states have their own training requirements that expand on EPA's requirements.

Your state may have specific requirements about certification or licensing of lead professionals. For more information, ask your supervisor to contact your State lead certification program regulator.

OSHA Regulations

OSHA REGULATIONS

- OSHA Hazard Communication Standards
- OSHA Lead in Construction Standard - Key Concepts
 - Exposure assessment
 - Competent person
 - Action level
 - Permissible exposure limit
 - Trigger tasks

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OSHA Regulations and the Use of Respirators and Protective Clothing

The material in this OSHA section is available below, the level of detail of discussion is left to the trainer's discretion. Before discussing specifics of the OSHA regulations, explain to participants that the OSHA Hazard Communication Standards require employees to receive information about lead if performing construction and maintenance work that involves lead hazards. Activities such as ongoing LBP maintenance, renovation, remodeling, rehabilitation, paint stabilization or standard treatments performed under the Lead Safe Housing Rule are considered this type of work, so the Hazard Communication Standards apply.

The Lead in Construction Standard requirements vary depending on the work being done and exposure potential as determined by the employer. If employees use the lead safe work practices they are being taught today, they can reduce their potential for exposure to dust and thus the additional effort required to comply with the Construction Standard may be minimal. In fact, they may not have to wear respirators or protective clothing on many jobs. Therefore, it would be incorrect to teach that all lead work requires a respirator and protective clothing. Each employer is responsible to tell employees how to protect themselves on specific jobs.

This section discusses two key OSHA rules:

- OSHA Hazard Communication Standards
- OSHA Lead in Construction Standard

Remember, you may be covered by one or more of these regulations if lead in your workplace is disturbed. If you use lead safe work practices, in many cases the requirements of the Lead in Construction Standard will be minimal.



Your employer is responsible for performing an assessment of potential for exposure, and complying with all applicable safety regulations.

OSHA Hazard Communication Standards [29 CFR 1926.59 for Construction and 29 CFR 1910.1200 for General Industry]

The OSHA Hazard Communication regulations require employers to give employees information about lead if they are

performing construction and maintenance work that involves lead hazards. Activities such as ongoing LBP maintenance, renovation, remodeling, rehabilitation, paint stabilization or standard treatments performed under the Lead Safe Housing Rule are considered this type of work, so the Hazard Communication Standards apply.

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, lead 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.

OSHA hazard communication training is the minimum training specified by HUD's Lead Safe Housing Rule for individuals performing ongoing lead-based paint maintenance, interim controls, paint stabilization or standard treatments in Federally-assisted housing. If hazard communication is all the training the employee receives, that employee must be supervised by a certified abatement supervisor.

The OSHA Lead in Construction Standard (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 includes (but is not limited to) the following activities:

- Maintenance operations,
- Construction and rehabilitation activities,
- Repair and renovation work,
- Demolition and salvage,
- Removal or encapsulation of components, and
- Installation of building components that contain lead.

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.



Important: The Lead in Construction Standard Rule does not apply only to lead-based paint. It includes lead in other things as well.

Discuss with participants “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, moving or transporting requirement.

Key Concepts

To understand the Lead in Construction Standard, it helps to know a few terms first.

Exposure assessment. 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. 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.

Competent person. 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.”

Action level. “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 of air 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 time weighted 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.
- Respirators, protective clothing, and other more restrictive procedures are NOT required AT THE ACTION LEVEL.
- Using lead safe work practices, worker exposure may remain below this level. Using lead safe work practices minimizes the risk of elevated exposure.

Permissible exposure limit. The “permissible exposure limit” (PEL) for lead is a level of lead in the air that an 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 the PEL.

- ❑ Employers may use objective or historical data to determine appropriate levels of personal protection. This means using exposure data collected from your industry or from previous jobs.
- ❑ 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 tasks until the exposure assessment shows that your exposure is below the PEL.
- ❑ The three groups of trigger tasks have a particular potential for exposure, with Group 1 trigger tasks 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.

Note: Group 1 activities, prior to initial assessments, require employee protection as if lead exposure is greater than the PEL, but not above 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, cleanup activities where dry expendable abrasives are used.

Note: Group 2 activities, prior to initial assessments, require employee protection as if lead exposure is greater than 10 times the PEL (above 500 $\mu\text{g}/\text{m}^3$).

- ❑ **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 (above 2500 $\mu\text{g}/\text{m}^3$).

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

OSHA REGULATIONS, CONTINUED

- OSHA Lead in Construction Standard - Requirements
 - Annual lead training program
 - Lead compliance plan
 - Written compliance plan for jobs exposing employees to lead in excess of the PEL without respiratory protection
 - Signs in the work area
 - Records of all employees and their exposure to lead
 - Employee rights to information and observation VIII-8

Requirements

An employer must provide a level of protection sufficient to keep employees exposure below the PEL. In keeping with this requirement, the following apply:

- ❑ 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.
- ❑ OSHA requires employers to develop a lead compliance plan stating how they plan to comply with the lead requirements. A sample lead compliance plan can be found in Chapter 9 of the “HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.”
- ❑ OSHA requires the development and implementation of a written compliance plan prior to the commencement of a 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. Signs must say:

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

- ❑ The employer must keep records of all employees and their exposure to lead. Refer to 29 CFR 1926.62(n) for specific information on what records must be kept.
- ❑ Employers must offer employees or their designated representative the opportunity to observe any monitoring of employee exposure to lead. Employees are entitled to an explanation of the measurement procedure and the right to record results or receive copies of results when returned from the lab.

Requirements for Exposure Above the PEL

If employees are: (1) exposed above the PEL, or (2) perform “trigger tasks” and the employer has not performed an initial exposure assessment, OSHA becomes more stringent with more protective requirements. These include engineering controls and work practice controls to reduce exposures below the PEL,

OSHA REGULATIONS, CONTINUED

- OSHA Lead in Construction Standard - Requirements for Exposure Above PEL
 - Housekeeping
 - Proper respirator
 - Hygiene facilities
 - Lead safe area for eating and drinking
 - Medical surveillance
 - Medical removal

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some of which require you to have additional specialized training. This protection includes:

- ❑ Good **housekeeping** including maintaining all workplace surfaces free of lead dust accumulations, cleaning floors and other surfaces with HEPA-filtered vacuums wherever possible. (Housekeeping prohibits the use of compressed air to remove lead from surfaces, unless the compressed air is used with a ventilation system designed to capture the airborne dust. NOTE: Housekeeping is required for all lead jobs.
- ❑ Emphasize the importance of minimizing and controlling dust.
- ❑ The **proper respirator for the job**, respirator fitting, and respiratory protection training. OSHA requires 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, and a closed container for used protective clothing.
- ❑ **Hygiene facilities** for hand and face washing, including showering if feasible. Food and beverages are not allowed in the work area. Tobacco products may not be present or consumed. Cosmetics may not be applied (such as lip balm.)
- ❑ A **lead safe area for eating and drinking** must be available and as free from contamination as practical.
- ❑ **Medical Surveillance:** Initial blood tests reviewed by a physician must be provided if you do any Group 1, 2 or 3 trigger tasks or are exposed at or above the action level on any one day. Ongoing medical surveillance, with additional blood tests, is required if you are exposed to lead at or above the action level for more than 30 days in a 12-month period. Medical surveillance is provided at no cost to the employee.
- ❑ **Medical Removal:** Removal from the lead work area if your blood level is too high without loss of pay or benefits. Some employees may have a blood-lead level above the medical removal level if they have been performing work involving lead exposure in the past, signs and symptoms are not apparent.

You should also know that the OSHA construction standard prohibits employers from giving employees chelation drugs to prevent lead poisoning (chelation means administering a chemical to remove lead from the body.)

For More on OSHA Regulations

It is important to know the requirements of other OSHA construction regulations (such as for scaffolding safety, ladder safety, electrical safety, etc.) Employers or company owners are responsible for compliance, and their having the regulations or summaries can help them comply. The OSHA Web site, www.osha.gov, is a good source of information, guidance and training materials.

Regulatory compliance will help protect workers from the hazards of lead. It will produce cleaner and safer places for employees to work.

For information on the OSHA Respiratory Protection Standard and other regulations, go to www.osha.gov.

Many OSHA regulations have similar requirements:

- Keep work area clean and free of hazards,
- Assess the job and protect employees,
- Use lead 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, and
- Provide employees access to medical and exposure records.

State Regulations

Instructor should cover specific State regulations at this point regarding at a minimum, the following:

- Local disposal laws
- Difference between State and Federal laws
- Contractor certification requirements
- Contact agencies and people for more information
- State pamphlet if available.

Module IX—Addressing Lead in Your Maintenance Program

Module time: 20 minutes

MOD IX - ADDRESSING LEAD IN YOUR MAINTENANCE PROGRAM

Learning Objectives

- Explain management's role in a lead maintenance program
- Outline the fundamental components of a lead maintenance program
- Effectively communicate with residents
- Recognize procedures that you currently use that need to be modified to assure lead safe work practices are followed for lead-based paint work on the job

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Upon completion of this module, you should be able to:

- Explain management's role in a lead maintenance program.
- Outline the fundamental components of a lead maintenance program.
- Effectively communicate with residents.
- Recognize procedures that you currently use that need to be modified to assure lead safe work practices are followed for lead-based paint on the job.

This module gives workers and supervisors a brief overview of management's responsibility for lead-based paint maintenance. Cover this module with as much detail as necessary for the participants. Supervisors need more detail than workers.

Why is a Lead Maintenance Program Important for Safe Housing?

Maintenance is critical to the control of lead-based paint hazards. The purpose of maintenance work is different from lead hazard control efforts — maintenance work is designed to simply keep buildings in good repair, while lead hazard control efforts are designed to prevent lead poisoning. However, while these two goals are different, they complement each other. For example, lead hazard control work often results in the creation of smooth, cleanable surfaces that are also easier to maintain. Similarly, good maintenance practices (such as repainting on a regular basis) can help maintain surfaces and thus prevent lead poisoning.

What Is A Written Lead Maintenance Program?

Your company should have a written lead maintenance program. It documents all steps necessary to minimize the risk of lead exposure when work is performed on lead-based painted surfaces, from purchasing the appropriate equipment to documenting the procedures to be used for each lead-based paint hazard activity.

WHAT IS A WRITTEN LEAD MAINTENANCE PROGRAM?

- Identification of lead-based paint surfaces
- Identification of low risk and high risk work
- Training of maintenance personnel
- Modification of work order forms and systems
- Education of residents
- Designations of persons in charge of lead work
- Methods for conducting quality assurance and quality control

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The written lead maintenance program consists of the following seven elements:

- Identification of lead-based paint surfaces
- Identification of low risk and high risk work
- Training of maintenance personnel
- Modification of work order forms and systems
- Education of residents
- Designations of persons in charge of lead work
- Methods for conducting quality assurance and quality control. (Dust testing is optional after high risk jobs; except for work performed in HUD-assisted housing when it is required.)

However, a plan is only as good as the people implementing it. You, the maintenance staff, directly influence potential lead exposure because you work directly with lead-based painted surfaces on both the interior and exterior of the dwelling unit. When working on lead-based painted surfaces, you must follow the work practices described in this training in order to decrease the risk of lead exposure to the residents of the dwelling unit, yourself, and your family.

How Is the Written Lead Maintenance Plan Implemented?

The plan is implemented by everyone who is involved in working with lead-based paint. Looking at the elements of a written lead maintenance plan and who is responsible for implementing them is a good way to summarize this training.

Ask students to discuss how lead jobs are handled at their work. Involve the students to prepare them to return to their jobs and apply what they have learned in the course.

- Who do you contact if equipment is needed?
- What changes are needed (if any) in your work orders?
- Who informs contractors about lead-based paint hazards?
- How is information passed to residents and other workers?

HOW IS THE WRITTEN MAINTENANCE PLAN IMPLEMENTED?

- Who do you contact if equipment is needed?
- What changes are needed (if any) in your work orders?
- Who informs contractors about lead-based paint hazards?
- How is information passed to residents and other workers?

IX-3

ELEMENTS OF A WRITTEN PLAN

- Identification of Lead-Based Paint Surfaces
- Identification of Low and High Risk Work
- Worker Training

IX-4

Identification of Lead-Based Paint Surfaces

It makes your job easier to know where the lead-based paint is located. So, testing painted surfaces is the best approach, but may not be the most feasible. If testing cannot be done due to time or financial constraints, or if previous testing was found to be deficient, an alternative approach is to simply assume any painted surface constructed prior to 1978 contains lead-based paint.

Identification of Low and High Risk Work

Prior to assigning tasks, management must determine if a task will be low or high risk. The Planning Tool Lead Job Checklist or other similar form will indicate the level of risk, who should perform the task, what equipment and materials are needed, how residents have been notified, and the work practices to be followed.

Remember, the factors that are used to determine the level of risk are the amount of dust that could be generated, the size of the job, and the condition of the surface or paint. If these conditions change at any time during a job, like a small hole in a ceiling becomes larger, you must notify management.

Worker Training

The written lead maintenance program should describe the steps followed when doing lead-based paint work, who will do the work, and how they will be trained.

The Planning Tool can be used to list lead-based paint tasks and the steps to be followed. This training program provides what the worker needs to know for most paint maintenance activities. Depending upon the task, workers may need to have additional training on hazard communication, respiratory protection, exposure monitoring, medical surveillance, and other pertinent topics.

Additional training may be required for lead-based paint maintenance jobs. This training program has focused on how to safely work in areas where there may be lead dust hazards. In the course of doing lead-based paint maintenance jobs, workers may need to use chemicals (cleaning materials) and respirators. Additional training programs are required by the Occupational Health and Safety Administration (OSHA) covering these areas. Chemical safety is covered by the Hazard Communication Standard or Right-to-Know (29 CFR 1910.1200 or 1926.59). Respirator safety is covered by the Respiratory Protection Program (29 CFR 1910.134).

Training opportunities that allow students to spend a half day in the field gives them a better opportunity to practice the processes and techniques learned in the classroom. It also gives the supervisor/instructor the opportunity to confirm that students have learned how to apply the learning on the job and to reinforce the importance of following the safety precautions.

Contractors also need lead safety training. All contractors bidding on jobs in housing constructed before 1978 should be informed of areas with lead-based paint before any job begins.

Modification of Work Order Forms and System

This course and the Lead-Based Paint Maintenance Planning Tool provide a system to address lead-based paint hazards to assign and document lead safe work practices as part of usual work orders.

Education of Residents

The resident's first introduction to lead-based paint maintenance jobs will most likely be the resident notification form. The resident notification should be written so that the resident can understand it.

Keep the form to one page and consider the reading level and language spoken and read by the residents.

The form should tell the resident:

- The nature of work,
- Length of work,
- Date and time work is to take place,
- Precautions to protect residents and their belongings,
- Temporary relocation requirements (if any),
- Brief description of work, and
- Methods for keeping children and pets out of the work area.

The Lead Job Checklist in the Planning Tool provides this information. Because you have completed this course, you can tell residents about the protective clothing, equipment, and procedures you use. If residents have questions regarding medical, legal, or other information, refer them to the appropriate facility representative. Such ongoing communication is very important to give residents a greater

ELEMENTS OF A WRITTEN PLAN, CONTINUED

- Modification of Work Order Forms and System
- Education of Residents

IX-5

understanding about minimizing lead exposure and to ensure that they are less likely to overreact.

Increasingly, residents will become more familiar with the “Protect Your Family From Lead in Your Home” brochure, as new residents will receive the brochure when they rent the apartment.

Designation of Persons in Charge of Lead Work

The Lead-Based Paint Maintenance Planning Tool Lead Job Checklist guides the supervisor to assign properly trained personnel to perform maintenance that may disturb lead-based paint.

Quality Assurance and Quality Control

The Planning Tool provides a checklist to follow and file with the work order to document that the job was performed properly. Dust wipe testing is recommended following the cleanup.

Documentation

Documentation should be maintained on the methods used to decide on the level of risk and the notification of residents.

Documentation for training should also be maintained and should include:

- Completed sign-in sheet,
- Copy of the training agenda,
- Copy of training certificates (if any),
- Examination grade for each attendee (if any), and
- Copy of the examination (if any).

ELEMENTS OF A WRITTEN PLAN,
CONTINUED

- Designation of Persons in Charge of Lead Work
- Quality Assurance and Quality Control
- Documentation

IX-6

Module X—Taking this Message Home: Working Lead Safe Everyday

Module time: 30 minutes

MOD X - TAKING THIS MESSAGE HOME

Learning Objective

- Answer correctly questions posed after four standard scenarios on working safely with lead.

X-1

FOUR SCENARIOS

- **Scenario 1:** Lunch Break
- **Scenario 2:** Managing Multiple Demands
- **Scenario 3:** Reporting a Potential Lead-Based Paint Hazard
- **Scenario 4:** Responding to Resident Requests to Do Additional Work

X-2

Show Working
Lead Safe
Video 8A



Show Working
Lead Safe
Video 8B



Upon completion of this module, you should be able to:

- Answer correctly questions posed after four standard scenarios on working safely with lead.

A Course Review

Use the scenarios in the Working Lead Safe Training Video to discuss how the learning from this course will apply to students' daily jobs. Ask what things will need to change.

To start this module, show the scenarios, one at a time, stopping after each scenario to discuss the issues presented. The discussions serve as a course review and raise issues about responsibility and applying the learning in the real world.

Now back to our friends that we caught creating hazards earlier today. Now they have learned how to work safe but they are still learning how to apply what they've learned on the job. See what you think.

Scenario 1: Lunch Break

Ask participants to discuss how these issues are or should be handled at their job. You may ask these or other questions.

Q: Will you need extra equipment to ensure that these tasks are handled safely?

Q: Do you have access to all the equipment you will need?

Scenario 2: Managing Multiple Demands

The following issues are raised in the scenario:

- Isolating residents from the work area
- Managing the conflict when asked to leave a work site in the middle of a job
- Taking safety precautions if you have to leave a task uncompleted
- Telling a resident of the importance of not disturbing a work area

Ask participants to discuss how these issues are or should be handled. You may ask these or other questions:

- Q: What precautions must be taken to isolate residents from the work area?
- Q: How do you manage a conflict when asked to leave a work site in the middle of the job? Should there be a discussion, prior to starting a lead-based paint job, on the procedures to be followed if there is a need to stop work before a task is completed?
- Q: Who should be a part of this discussion?
- Q: What safety precautions must you take if you have to leave a job before it is completed?

Show Working
Lead Safe
Video 8C



Scenario 3: Reporting A Potential Lead-Based Paint Hazard

The following issues are raised in this scenario:

- Managing lead-based paint to protect residents.
- Reporting lead-based paint conditions that are not listed on the work order.
- Telling the resident of a potential problem.
- Managing jobs that involve more risk than the work order describes.

Ask participants to discuss how these issues are or should be handled. You may ask these or other questions.

- Q: What is the best way to report a potential problem or conditions that are not listed on the work order?
- Q: Is this your responsibility?
- Q: How do you tell the resident of potential problems?

Show Working
Lead Safe
Video 8D



Scenario 4: Responding to Resident Requests to Do Additional Work

The following issues are raised in this scenario:

- Being asked to do work for which you are not qualified.
- Knowing the importance of using the proper equipment to perform a job safely.
- Explaining to a resident the importance of following lead safe work practices.

Ask participants to discuss how these issues are or should be handled. You may ask these or other questions.

- Q: What do you do if a resident (or management) asks you to do work that is not on your work order?
- Q: Do you respond differently based upon your qualifications to do the work or on the size of the task?
- Q: How do you tell a resident that you'd like to do that task, but it may involve lead-based paint and you're not prepared to do that type of job?
- Q: Should this be your responsibility?

Introduce the last video with the simple question:

“What is this all about?”

Think About the Children

After the video, finish the instruction with:

We have a big problem with lead exposure to our nation's children. But we have come a long way. In 1978 we had 4.5 million kids with excessive lead exposure, today the number is down to approximately 434,000 due to changes in gasoline, food packaging, and paint. Lead poisoning is preventable, and your work can continue to reduce that number.

Closing

Feedback

Ask the class:

- What was good/bad with this course?
- How can it be improved?

Test

If participants are taking this course to meet a regulatory requirement, they must take the test at this time. Administer the test in accordance with the directions on the test document.

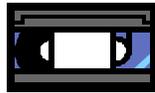
Sign-In/Out Sheet

- Thank students for their attention.
- Ask everyone to sign out so that they will get credit for attending.

Training Follow-Up

Put training materials back in order to get ready for the next class.

Show the last segment of the video



THINK ABOUT THE CHILDREN

- Progress has been made
- But we have further to go
- Lead poisoning is preventable
- You can help

X-3

Skills Assessment

ATTACHMENT 1
SKILLS ASSESSMENT CHECKLIST – FOR EXERCISE

PREPARE THE WORK AREA	Pass/Fail	Criteria/Comments (to be added by trainer)
1. Before you begin, ask... <ul style="list-style-type: none"> • Will a clearance test be required? • Have the residents been notified? • Are there any special situations in the unit? 		
2. Determine the work area. Make sure it is of the appropriate size and shape for the task.		
3. Select appropriate supplies and equipment. Place them in work area.		
4. Post warning signs in proper locations.		
5. Place warning tape around the perimeter, if needed. Secure it to non-movable objects.		
6. Put on respirator, protective clothing or shoe covers, if needed.		
7. Pre-clean if contamination and debris are extensive – pick up debris and HEPA vacuum.		
8. Move all movable furniture and belongings.		
9. Cut plastic sheeting to proper size.		
10. Cover floor/ground appropriately. Tape plastic securely to floor. Cover furniture if unmovable.		
11. Close and cover windows and doors as appropriate.		
12. Turn off ventilation system and seal vents if necessary.		

WORK SAFELY	Pass/Fail	Comments
<p>13. Stabilize the paint correctly</p> <ul style="list-style-type: none"> • Check for sources of paint deterioration (e.g. leaks, rotted substrate) and repair them. • Wet scrape or wet sand the deteriorated paint. • Clean the scraped surface. • Repaint the surface – prime and topcoat. 		
<p>14. Work Wet</p> <ul style="list-style-type: none"> • Use wet sanding, wet scraping. • Control dust by misting. 		
<p>15. Work Clean</p> <ul style="list-style-type: none"> • Pick up debris as it is generated. • Stay in the work area. HEPA vacuum off shoes or remove shoe covers if you must leave. 		
<p>16. Work Smart</p> <ul style="list-style-type: none"> • Avoid dangerous practices – e.g. power tools. • Do not eat or smoke in the work area. • Decontaminate yourself before you leave the work area. • HEPA vacuum clothes; place disposable suit in heavy duty poly bag. 		
CLEANUP THE WORK AREA	Pass/Fail	Comments
<p>17. Select the equipment needed to perform cleanup.</p>		
<p>18. Pick up large debris and sheeting</p> <ul style="list-style-type: none"> • Mist and sweep debris from plastic sheeting; place in heavy duty poly bag. • Fold plastic sheeting on itself and remove. • Put plastic sheeting in a heavy duty poly bag and label. 		

CLEANUP CONTINUED	Pass/Fail	Comments
<p>19. Do final cleanup in proper order: HEPA vacuum, wash, HEPA vacuum.</p> <ul style="list-style-type: none"> • Use HEPA vacuum correctly. • Vacuum all surfaces using proper attachments for each type of surface. • Start at ceiling and work down. • Clean floor last. • Start at the farthest point from the entry way and move toward the entryway door. 		
<p>20. Wash surfaces correctly</p> <ul style="list-style-type: none"> • Use detergent with proper dilution (per manufacturer's instructions). • Scrub surfaces completely. • Washing from ceiling down. • Wring out rag/sponge/mop into empty bucket before placing back in soapy water. • Rinse all surfaces using clean rag/sponge/mop and water. • Dispose of dirty water in toilet; not in sink or yard and rags/sponges/mop heads in heavy duty poly bags. • (Reminder: Do final HEPA vacuuming). 		
<p>21. Package and label waste.</p>		
<p>22. Decontaminate self, supplies, equipment.</p>		