



## CHAPTER 5

### CONTROLLING LEAD-BASED PAINT HAZARDS

Learning objectives .....	5-3
Skit: What do you need to know about lead? .....	5-4
Discussion questions .....	5-4
Reducing lead-based paint hazards .....	5-5
When does lead-based paint become a hazard? .....	5-5
Where is lead-based paint found? .....	5-7
Who will reduce the lead hazards? .....	5-8
How will lead hazards be reduced? .....	5-9
Title X's two-step plan for reducing lead hazards .....	5-10
Abatement .....	5-11
Interim controls .....	5-12
Education programs .....	5-12
Special cleaning methods.....	5-12
Repairs, repainting, and maintenance .....	5-13
An interim control plan for a house .....	5-14
In-place management .....	5-15
Holistic approach to lead-hazard control .....	5-16
Special cleaning methods .....	5-17
HEPA vacuum .....	5-18
How to use a HEPA vacuum .....	5-19
Wet cleaning .....	5-22
Key facts for Chapter 5 .....	5-25
For more information .....	5-27

---

---





### Learning objectives

In this chapter you will learn about

- Title X
- six situations where lead is a hazard
- who will reduce lead hazards
- lead-paint abatement
- interim controls
- special cleaning
- how to use interim controls for a home
- operations and maintenance programs
- the parts of a HEPA vacuum
- how to use a HEPA vacuum
- how to use the four-step system



### **Skit: What do you need to know about lead?**

Sandy and Tim are maintenance workers at a local elementary school. The school was built in 1960 and needs repair. Since summer is coming and school will be out, Sandy and Tim are told to take care of the lead-based paint in the building. The school district can not afford complete abatement.

**Sandy:** I'm a little concerned about this lead-based paint. That's all you read about in the papers.

**Tim:** Well, it should not be such a big problem. I hear the main thing to deal with is the windows.

**Sandy:** I don't know. I wish I knew more about it.

**Tim:** Don't make such a big deal. Look, we'll scrape the peeling paint, vacuum everywhere and then paint over it. That should take care of it.

**Sandy:** I'm not sure.

### **Discussion questions**

1. Do Sandy and Tim seem to know enough about lead-based paint to take on the job?
2. What should Sandy and Tim do before they begin any work?
3. What surfaces should be a high priority for Sandy and Tim?
4. What type of interim controls can they use on these surfaces?
5. What items are essential to a good Operations and Maintenance program?





### Reducing lead-based paint hazards

Children most often get poisoned by lead because they swallow lead dust. In the early 1990s the Congress of the United States found that

- more than 3 million children were estimated to be affected by low-level lead exposure;
- the most common cause of lead poisoning in children is swallowing lead in household dust;
- there were more than 3 million tons of lead in lead-based paint in the total number of houses built before 1980.

In October 1992, Congress passed a law called the Housing and Community Development Act. This Act includes Title X of the Residential Lead Based Paint Hazard Reduction Act of 1992 (Public Law 102-550). The purpose of this act is to reduce lead-based paint hazards.

Since the passage of Title X, EPA, HUD, and OSHA, have implemented several regulations aimed at reducing worker's and the public's exposure to lead-based paint hazards. The number of homes with lead-based paint and lead-based paint hazards has been reduced. Additionally, CDC estimates the number of children with too much lead in their blood has also been reduced (from more than three million to just over 400,000). While these reductions are impressive, there is still a lot of work to be done to reduce lead-based paint hazards in housing and lead poisoning of children and workers. You play an important role in that effort!

#### **When does lead-based paint become a hazard?**

EPA has defined the conditions under which lead-based paint in a dwelling or child-occupied facility becomes a hazard:

- **lead-based paint on any friction surface that rubs against another surface and creates a lead-dust hazard**

A friction surface is any surface that rubs against another surface. Windows and floors are friction surfaces.

- **lead-based paint that is damaged or deteriorated on any impact surface**

An impact surface is any surface that receives forceful contact over and over again. Windows and doors have impact surfaces; floors and stairways are impact surfaces.

- **any chewable lead-painted surface on which there is evidence of teeth marks**

The child chews on the surface and swallows the lead particles. These surfaces are also called accessible surfaces. An interior window sill is an example of a chewable surface.

**As a lead abatement worker, you play an important role in reducing lead-based paint hazards in housing.**



- **damaged lead-based paint**

All building materials get damaged and deteriorate. All building materials with lead-based paint can create lead dust.

- **dust-lead hazard**

Dust anywhere in the home that is at or above the standards for floors and window sills that have been established by EPA. There are two sets of dust standards—*dust-lead hazards* and *clearance lead-dust levels*. The clearance levels must be met after abatement or federally-assisted rehabilitation/renovation activities have been performed (these levels were discussed in Chapters 3 and 4).

- **soil-lead hazard**

Lead-contaminated soil is bare soil with lead at or above the levels set by EPA (these levels were discussed in Chapters 3 and 4).

A lead-based paint hazard is possible wherever lead dust can be created. When lead dust is created, you can breathe or swallow it. It is a hazard to your health.

Your supervisor or employer is required to make sure the project is in compliance with the applicable standards.



## Where is lead-based paint found?

Lead-based paint may be found in buildings built before 1978. That includes our homes, schools, community centers, libraries, hospitals, and other public and commercial buildings built before 1978. Today, it can still be used on bridges and steel structures. Lead-based paint is almost always found on bridges and steel structures because it prevents corrosion. Any time there is bridge repair, lead dust is likely to be created. Any time an older house is renovated there is a potential lead hazard. Any time demolition is done on an older building, there is a potential lead hazard.

**Lead-based paint may be found in any building built before 1978.**



**Many different people will work to reduce lead hazards.**

### Who will reduce the lead hazards?

Reducing the lead-based paint hazards in the United States is a huge job. It will take many years and a lot of resources. Many different people will work to help reduce the lead hazards:

- **Certified small contractors** will abate homes using trained certified workers.
- **Certified large contractors** with trained certified workers will abate large building complexes, facilities, and steel structures.
- **Community organizations and tenant associations** will have members trained to reduce lead hazards in the homes, playgrounds, and community facilities.
- **Public employees** of schools, housing, and state and municipal agencies will be trained to provide lead-safe facility maintenance and custodial care.
- **Homeowners** who get training often work in their own homes.
- **Contractors, supervisors, and workers** should also be licensed to conduct lead-related jobs.
- **Trained renovation, rehabilitation, and maintenance workers** using lead-safe work practices.





### How will lead hazards be reduced?

Title X gives a detailed plan to reduce lead hazards. Here are some of the important parts of Title X's plan:

- EPA, OSHA, and HUD are working together and have developed standards, regulations, and funding to reduce lead hazards.
- The federal government is educating the public about lead hazards.
- If a property seller or landlord knows about lead hazards on the property, he or she must inform potential buyers or renters about them.
- Home buyers have the right to get a lead inspection or risk assessment of that home.
- There are state, tribal, and federal rules which require training and certification/ licensing for lead abatement contractors and workers.
- There are minimum work practices which must be followed when doing lead-based paint abatement.
- There are specific work practices which are prohibited when working on lead-based paint in housing or child-occupied facilities.
- Renovators and remodelers must give out a lead information pamphlet to consumers before renovation or remodeling begins.



**Title X has a two-step plan:**

- **evaluate for lead hazards;**
- **reduce lead hazards.**

### **Title X's two-step plan for reducing lead hazards**

- **Evaluate the lead hazards.**

Evaluating lead hazards will help answer very important questions:

- Which homes need to be taken care of first?
- Who in the home might get poisoned?
- What actions will reduce lead hazards?

The information gathered in the inspections and risk assessments (Chapter 4) will help answer these questions.

- **Reduce the lead hazards.**

Once the lead hazards are identified they need to be reduced. Reducing lead hazards means getting rid of the lead that is dangerous to an individual's health. Title X states two ways of reducing lead hazards. They are called **abatement** and **interim controls**.



### Abatement

Lead-based paint abatement is a set of actions that permanently eliminate lead-based paint hazards. HUD has defined “permanent” as lasting at least 20 years. Some of these actions are permanent as long as the protective material stays intact. These actions are sometimes called abatement strategies. Abatement includes, but is not limited to:

- replacement
- removal
- enclosure
- encapsulation; and
- the removal or permanent covering of soil.

EPA's definition of abatement also includes all preparation, cleanup, disposal, and post-abatement clearance testing activities associated with these measures.

Enclosure and encapsulation of lead-based paint are included as abatement methods. However, enclosure and encapsulation do not remove the lead-based paint; they abate the lead-based paint hazard by covering it.

Lead abatement must be done with special work practices, skill, and care. This training provides you with the basic information you need to know for lead abatement. You will read more about abatement actions in Chapters 7, 8, 9 and Appendix A of this manual.



**Interim controls only remove the lead hazard temporarily.**

**Interim controls keep the lead dust levels down.**

**Community members, building occupants, and workers need to know about lead hazards.**

**You must use special cleaning methods.**

### Interim controls

Interim controls are actions that reduce the lead hazard temporarily. They are a temporary solution. They can be very helpful. They keep the lead dust levels down and can prevent lead poisoning. Areas where interim controls are being used need to be regularly inspected to make sure the controls are still working. HUD has developed a schedule for monitoring each interim control activity. Interim controls include the following:

- education programs
- special cleaning
- repairs, repainting, and maintenance.

### Education programs

Anyone who uses interim controls should have special training. You create lead dust when you use interim controls. You will move lead dust around. This creates a hazard. You need to know how to work safely with lead. This course is an example of such training.



Other education programs would be lead hazard awareness training for building occupants and workers who will not be doing lead work. Both groups need to be aware of lead hazards. They need to know where the lead-based paint surfaces are and what is being done to control them.

### Special cleaning methods

Special cleaning can be used by itself to control lead dust. Special cleaning **must** be used with all abatement methods. Research shows that there are two cleaning methods that work well to reduce lead dust:

- HEPA vacuuming
- washing with an all-purpose cleaner or a cleaner made just for lead cleanup

These cleaning methods work best when they are used together, one right after the other. You will learn more about special cleaning methods later in this chapter.



### Repairs, repainting, and maintenance

The purpose of interim controls is to reduce the lead hazard until the hazard can be abated. Repairing lead-painted surfaces and repainting them with a non-lead-based paint combine to reduce lead dust until those surfaces can be abated. You must monitor and maintain any surface that you repair or repaint. Many actions are included in the repair and maintenance of lead-painted surfaces.

#### A small repair job at home

A heavy mirror was hung on the wall of your bathroom. The weight of the mirror caused the hook and nail to pull out of the wall. The mirror fell onto the sink. Fortunately, it did not break. The wall now has a hole as wide as a penny and an inch deep where the nail use to be. The paint around the hole is chipped.

This small and simple repair could include

- wet washing the paint dust and chips
- wet scraping the chipped paint
- repairing the hole with caulk or putty
- repainting the surface
- wrapping and disposing of debris

**Monitor any surface you repair or repaint.**

**Make sure the surface remains in good condition.**



**Make sure the interim controls you use are legal in your city and state.**

**Look in Appendix A for step-by-step instructions on interim controls and abatement in housing.**

## **An interim control plan for a house**

Here is a set of actions that can be used as interim controls for a home. Combined, these actions can reduce lead exposure. Make sure interim controls are allowed by state and city laws before using them.

Before you begin, make sure you contain the area. Set up signs and barrier tape to keep nonworkers out of the area. Wear appropriate protective gear until you are ready to repaint.

- **Do a special cleaning.**

Vacuum the whole house with a HEPA vacuum. Then use an all-purpose cleaner or a cleaner made just for lead cleanup to wash the entire house. Pay special attention to the areas that are not frequently cleaned (e.g., window troughs, above doors and windows, etc.).

- **Do small repairs to the windows to reduce lead dust.**

Cut a piece of sheet metal or plastic the same size as the window trough. Back caulk the piece and nail it in place. This repair will enclose the trough and create a cleanable surface. It will reduce the lead dust the paint on the window creates and make the window easier to clean later on.

- **Wet scrape edges and loose paint.**

Wet scrape the leading edge of the interior window sill. Wet scrape any other loose, peeling paint.

- **Wash the entire house with the cleaning solution again. Then HEPA vacuum the entire house again.**

- **Have an inspector or risk assessor do clearance dust wipe tests.**

- **Repaint the wet-scraped surfaces with non-lead-based paint.**

These actions will reduce the amount of lead dust in the home and make it a safer environment for both children and adults. The home will still need to be monitored for lead hazards on a regular basis. Step-by-step instructions for doing interim controls and abatement in housing are located in Appendix A at the end of this manual.



### In-place management

In-place management is necessary whenever you use interim controls. Keeping a lead-based paint surface in good condition prevents damage and dust. Controlling lead dust and paint chips during routine cleanup and maintenance activity also helps reduce lead hazards.

Custodians and maintenance personnel clean and repair schools, hospitals, and other public and commercial buildings. Any facility that has lead-painted surfaces should have an in-place management program.

A good in-place management program can help prevent lead poisoning. It can help make and keep a building lead safe. A good program should include at a minimum the following:

- an education program for workers and building occupants to make them aware of lead-based paint hazards, where the lead-painted surfaces are located, and what actions are being taken to make the building lead-safe;
- safe work practices training for the custodians and maintenance workers;
- a written program for each building that identifies all sources of lead exposure;
- a lead program manager who is in charge of all activities related to lead and who communicates with workers, outside contractors, and occupants regularly;
- ongoing monitoring and checking of the condition of lead-painted surfaces;
- records of all inspections, work activities, maintenance, ongoing monitoring, worker medical exams, exposure monitoring, waste disposal, and other activities.

EPA and HUD have developed courses on how to reduce lead-based paint hazards during maintenance and renovation or remodeling. These courses presents the steps maintenance or renovation workers can take to minimize lead dust generation and soil contamination during activities which affect lead-based painted surfaces.

Everyone in the building is involved in preventing lead hazards when an in-place management program is working.

**A good in-place management program can help prevent lead poisoning.**



### Holistic approach to lead-hazard control

**The goal of planning and doing lead-hazard control is to create a safe environment at an affordable price.**

Lead work should always be a part of a maintenance approach. Maintenance work should always be done as part of lead in-place management or abatement work. Lead-based paint work should never be done without looking at long-term maintenance issues. Consider the following issues:

- It makes no sense to replace windows if the replacement does not benefit energy conservation. Energy-efficient replacement windows will increase the value and efficiency of the building.
- Moisture problems can cause lead-based paint failure and may result in termite damage or structural problems. Repair all sources of moisture before or during abatement.
- Carpets can store lead dust as well as bacteria and mold that cause respiratory disease. Bacteria, mold, and lead dust are almost impossible to clean out of carpets. Whenever possible, carpets should be removed and replaced. If that is not possible, the best cleaning methods include steam cleaning (with beater bar attachment) off-site or dry cleaning area rugs.





### Special cleaning methods

Special cleaning can be used by itself to control lead dust. Special cleaning **must** be used with all abatement methods.

Research shows that HEPA vacuuming and washing with an all-purpose cleaner or a cleaner made just for lead cleanup are the methods that work well to reduce lead dust. They work best when used together, one right after the other:

- HEPA vacuum all surfaces.
- Wash all surfaces with an all-purpose cleaner or a cleaner made just for lead cleanup.
- HEPA vacuum all surfaces again.

**For best results:**

- 1. HEPA vacuum;**
- 2. Wet wash;**
- 3. HEPA vacuum again.**



## HEPA vacuum

**Always use a HEPA vacuum on a lead job.** A HEPA vacuum is an industrial strength vacuum cleaner with a HEPA filter. HEPA stands for “High Efficiency Particulate Air.” HEPA filters can catch lead dust. A regular shop vacuum will not filter out the lead dust. A shop vacuum just blows the lead back out into the room.

**Always use a HEPA vacuum on lead jobs.**

### True story:

#### What can happen if you don't use a HEPA-vacuum

Mr. B. and his wife stripped all the lead-based paint from their home in New York. The family lived in two rooms of the house while work was done on the rest of the home.

Mr. B. wanted to protect his infant daughter, Mary, from lead. He vacuumed the entire house every day. He used a regular vacuum. The regular vacuum blew the lead dust back into the area where his family was living every time he vacuumed. As a result, Mary's blood lead level went up to 37 µg/dL. She had to receive chelation therapy. Two years later her blood lead level returned to normal.

Blakelee, S. “Lead-Calcium Time Bomb.” American Health. November 1990.



### How to use a HEPA vacuum

1. Lightly mist area with water to keep dust levels down.

Some HEPA vacuums can combine a wet wash with the vacuum. Read the manufacturer's instructions on how to use it.

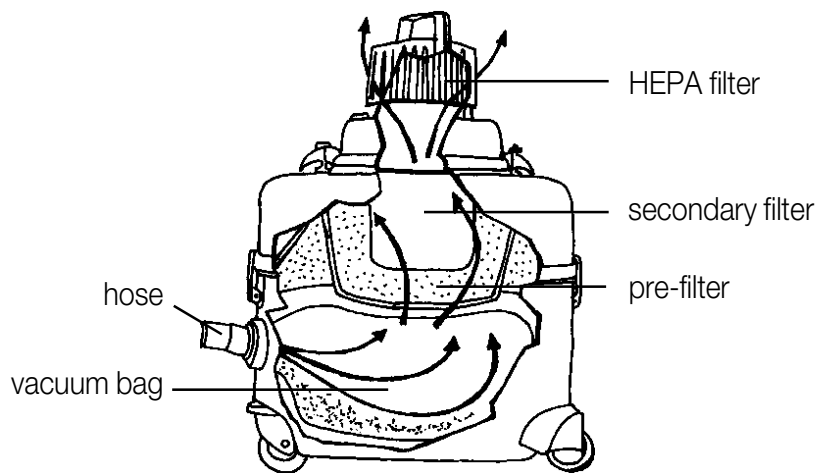
2. Move slowly.

Remember, lead dust sticks to surfaces. Vacuum slowly so the HEPA vacuum can pick up all the lead dust.

#### How a HEPA vacuum works

Most HEPA vacuums have three filters: a pre-filter, a secondary filter, and a HEPA filter.

1. Debris gets sucked in through the hose into the vacuum bag.
2. The air and dust get filtered through the pre-filter, the secondary filter, and the HEPA filter.
3. The HEPA filter captures the lead dust before the air is released into the work area again.



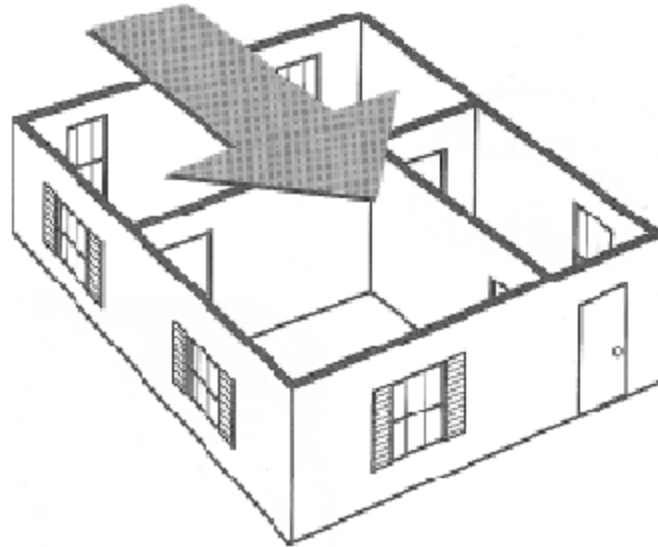
**Most HEPA vacuums have three filters.**



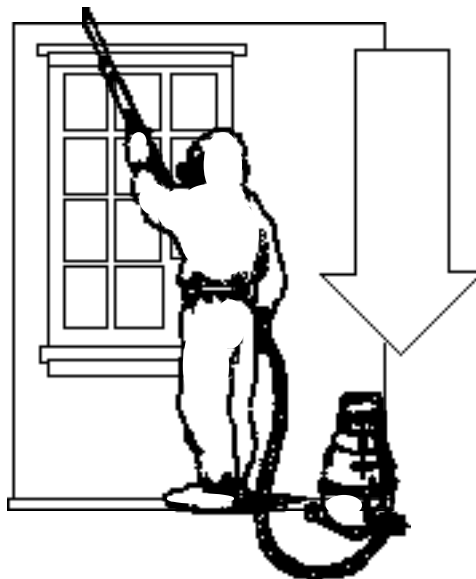
HEPA vacuum every surface.

3. HEPA vacuum all surfaces.

Start at the end farthest from the main entrance/exit. As you vacuum, move towards the main exit and finish there.



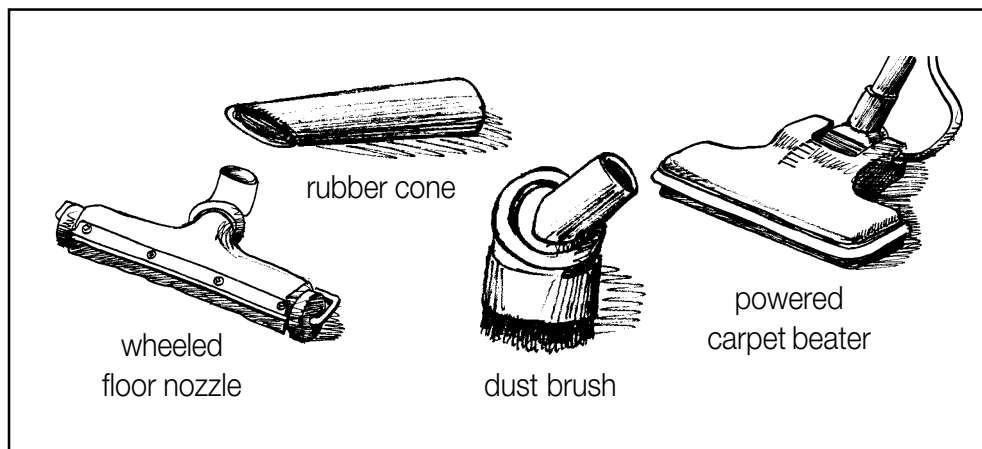
Begin at the top of each room and work down. For example, start with the top shelves, the top of the woodwork, and so on, and work down to the floor. Do every inch of the windows, especially the window troughs.





### 4. Use special attachments.

Use the rubber cone where the floor meets the baseboard and along all the cracks in the floor boards. Use the brush tool for walls and woodwork. Use the wheeled floor nozzle for bare floors and the carpet beater for rugs.



### 5. Maintain the HEPA vacuum.

Every now and then, you should check the HEPA vacuum for

- damaged wires
- worn gaskets and switches
- torn vacuum bag
- damaged and clogged filters

Whenever you repair the HEPA vacuum, wear protective clothing and your respirator. Repair and replace parts for HEPA vacuums in a contained work area. Replace parts as needed. Check the pre-filter often for dust and debris. Change the pre-filter when appropriate. This keeps the HEPA vacuum working properly. Use parts and filters that are the same make as the originals. Never use shop vacuum parts on a HEPA vacuum.

Wear protective clothing and your respirator. When checking the HEPA vacuum, clean it off using a second HEPA vacuum. Remember to clean up the area when you are done.

**Wear protective clothing and a respirator when you repair or clean the HEPA vacuum.**



### Wet cleaning

Recent studies have shown that cleaning with an all-purpose cleaner or a cleaner made just for lead cleanup is very effective in removing lead dust from contaminated surfaces.

Washing with these cleaners helps get dust particles out of cracks and crevices. Remember to rinse surfaces well after washing them with any cleaner if the directions tell you to.

Some detergents contain trisodium phosphate (TSP). Cleaners such as TSP should not be used on certain surfaces, such as finished furniture. Use a tack cloth (a soft, lintless cloth that has a sticky feel to it) on such surfaces.

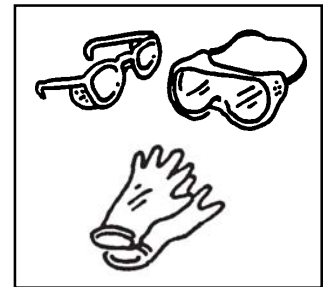
Phosphates such as TSP are harmful to the environment. A number of other lead cleaners may be used instead of TSP. Some states and local governments do not allow the use of TSP. Be sure to check your state and local laws.

1. Use an all-purpose cleaner or a cleaner made just for lead cleanup.

You can buy all-purpose cleaners in most hardware or janitor supply stores. Cleaners made just for lead cleanup will likely come from a safety or abatement supply warehouse.

2. Wear gloves and eye protection, if appropriate.

Some cleaning products are skin and eye irritants. Always wear gloves and protective eye gear when you use them. Refer to the MSDS for appropriate personal protective equipment. A portable eye wash should also be on site.



3. Mix the cleaner with water.

Follow directions on the package to make the solution. Do not use it at concentrations stronger than the instructions say.

4. Wash the area in the same order you HEPA vacuumed it.

Wipe from the far end of the area to the entrance and from the top of each room to the floor. Wash and rinse each room one at a time.

5. Use the “four-step system.”

When you wipe down surfaces with the cleaner, you will need three containers: one to hold the wash, one to squeeze the rag or mophead into, and one with clean rinse water.

**There are four steps in washing with a cleaning solution.** (See next page.) Go through these steps for each room in the work area. Wash and rinse each room one at a time. **Rinse carefully and thoroughly.** Some cleaners leave behind a film. If you do not rinse it off once it dries, the cleaner can damage surfaces. It can also prevent new paint from bonding to the surface.

**Some cleaners can burn your skin and eyes! Wear eye protection.**

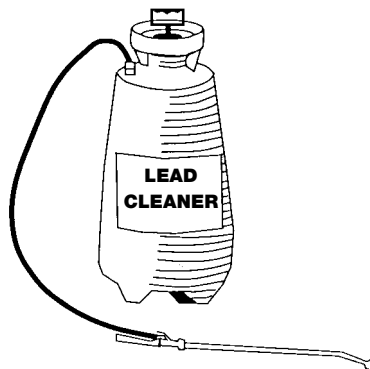
## Controlling Lead-based Paint Hazards



### The four-step system

#### Step 1: Spray or pour on the cleaning solution.

Use a plastic jug or a garden sprayer to hold the lead cleaner. Pour out the lead cleaner onto the rag or mophead. This will help avoid contaminating the cleaning solution.



#### Step 2: Wash surfaces with cleaning solution.

Use rags for woodwork and a string mop for floors. Sometimes a sponge mop is used for walls. Cloth rags may be used for all surfaces.

#### Steps for washing with lead cleaner:

1. Spray or pour on cleaning solution;
2. Wash surfaces;
3. Squeeze out rag or mop into empty container;
4. Rinse surfaces with clean water.

#### Step 3: Squeeze out the dirty rag or mophead.

Squeeze out the dirty rag or mophead into an empty container.

Replace the wash rag or mophead whenever it gets loaded with dust and debris.

Repeat Steps 1 through 3 until you finish washing one room.





**Rinse with a clean mophead or rag and clean water.**

**Rinse carefully and thoroughly.**

### **Step 4: Rinse the surfaces.**

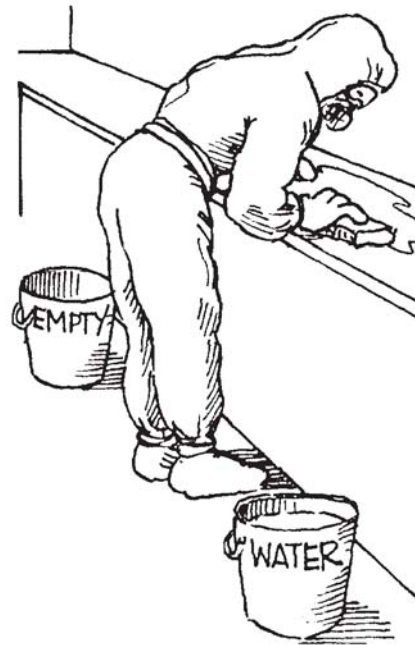
Fill a container with clean water. Use a clean rag or mophead, and rinse all the surfaces you washed.

Squeeze the rinse rag or mophead into an empty container. Replace it when you need to.

Repeat Step 4 until you finish rinsing the room you washed. Replace rinse water as often as necessary to keep it clean. Repeat all four steps for each room in the work area.

Check your state and local laws for instructions on how to dispose of the cleanup waste water, rags, mopheads, and debris.

**Remember to repeat the HEPA vacuum process.**







### Key facts for Chapter 5



#### **Lead-based paint hazards**

Lead-based paint-dust exposure is the major cause of childhood lead poisoning.

Lead dust can be found any place where lead-based paint is flaking or damaged.

Lead-based paint can be found in many buildings built before 1978.



#### **Title X (Residential Lead-Based Paint Hazard Reduction Act)**

U.S. Congress passed Title X in 1992 to reduce the hazard of lead-based paint.

Title X has a two-step plan for reducing lead hazards: evaluating and controlling lead hazards.



#### **Abatement means controlling the hazard.**

Title X states that abatement means “removing lead-based paint hazards permanently.”

Anyone doing lead abatement must be trained and certified.



#### **Interim controls reduce lead-based paint hazards temporarily.**

Interim controls keep lead dust levels down and may prevent poisoning.

Careful cleaning is important in abatement and interim controls.

A good in-place management program can help prevent lead poisoning.

Monitor any area that you repair to make sure it stays in good condition.

Make sure the interim controls you use are legal in your area.

Anyone using interim controls should be trained and certified.



#### **Community members, building occupants, and workers need to know about lead hazards in the building.**

They need to know what is being done to make a building lead-safe.



#### **Special cleaning requires HEPA vacuuming and washing with an all-purpose cleaner or a cleaner made just for lead cleanup.**

1. HEPA vacuum all surfaces in the work area.

2. Wash all surfaces with cleaning solution.

3. HEPA vacuum all surfaces again.



**Use a HEPA vacuum on lead jobs.**

HEPA vacuum all surfaces from top to bottom.

Wear protective clothing and a respirator whenever you use, repair, or clean the HEPA vacuum.



**Special cleaning methods must be used when abating lead.**

Special cleaning removes lead dust.

Special cleaning is one of the most important jobs in abatement.



**Use a cleaner on all surfaces.**

Use an all-purpose cleaner or a cleaner made just for lead to wash surfaces. Check what your state and local laws require.

Some cleaners can burn your skin and eyes, so wear gloves and eye protection when you use it and have an eye wash nearby.

Use three containers: (1) cleaner; (2) empty; (3) rinse water.

Use four-step system:

1. Pour or spray the cleaner from a jug or garden sprayer onto the rag or mophead.
2. Wash all the surfaces in a room with lead cleaner. Move from top to bottom, starting from the point farthest from the exit.
3. Squeeze out the dirty rag or mophead into empty bucket.
4. Rinse all surfaces very carefully. Use clean water, rags, and mopheads.

Wash and rinse each room—one at a time.

Check your state and local laws for instructions on how to dispose of the cleanup waste water, rags, mopheads, and debris.



**Special cleaning methods can be used as an interim control.**



### For more information

These publications have more information on the topics covered in this chapter. Your instructor will have a copy of some of the publications. You can order your own copies by calling 1-800-424-LEAD.

*Residential Lead-Based Paint Hazard Reduction Act of 1992* (Title X of the Housing and Community Development Act of 1992).

EPA, *Minimizing Lead-Based Paint Hazards During Renovation, Remodeling and Repainting* (September 2000).

EPA and HUD, *Addressing Lead-Based-Paint Hazards During Renovation, Remodeling and Rehabilitation in Federally Owned and Assisted Housing* (February 2001).

EPA and HUD, *Lead-Based Paint Maintenance Training Program* (1997).

EPA, HUD, and CDC, *Lead Paint Safety: A Field Guide for Painting, Home Maintenance, and Renovation Work* (June 1999).

EPA, HUD, and CPSC, *Protect Your Family From Lead in Your Home* (June 2003).

HUD, *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* (July 1995).

NIBS, *Lead-Based Paint Operations and Maintenance Work Practices Manual for Homes and Buildings* (May 1995).

Society for Occupational and Environmental Health, *Protecting Workers and Their Communities from Lead Hazards: A Guide for Protective Work Practices and Effective Worker Training* (1993).

