

## Lead Safety for Renovation, Repair, and Painting Work

Workers performing work that falls under the Lead-safe Renovation Regulations are required to be trained. If the workers have not received training as a Deleader-supervisor, Deleading worker, or Lead-safe Renovation (LSR) supervisor, the DLS regulations require that they receive training from the LSR supervisor assigned to the project prior to the workers engaging in the work.

To facilitate the worker training, the New England Lead Coordinating Committee (NELCC), a consortium of New England states that work to eliminate lead poisoning, and funded by EPA, developed a PowerPoint presentation that EPA Certified Renovator supervisors can use to train to their workers to meet EPA-RRP requirements. Because of the differences between the EPA and DLS regulations, DLS edited certain slides to include specific Massachusetts requirements. DLS now offers the PowerPoint slides in both English and Spanish to LSR Contractors and Supervisors to aid them in providing untrained renovation workers the required training.

## Massachusetts Work Practices for Lead-safe Renovation



### *Renovation Worker Training Course*

In Massachusetts, renovation workers are required to be **trained** under the Department of Labor Standards' **Deleading and Lead-safe Renovation Regulations (454 CMR 22.00)**

Adapted from the U.S. Environmental Protection Agency's training for certified renovators by the **New England Lead Coordinating Committee** (NELCC: [www.nelcc.uconn.edu](http://www.nelcc.uconn.edu)), within the Healthy Environments for Children Initiative, University of Connecticut, Department of Extension, in partnership with the Connecticut Department of Public Health

#### **Note to instructor**

This program has been designed for certified Lead-safe Renovator Supervisors to use in training other renovation workers who, under the U.S. Environmental Protection Agency's *Lead: Renovation, Repair, and Painting Program* and the *Massachusetts Department of Labor Standards' Deleading and Lead-safe Renovation Regulations 454 CMR 22.00*, must be **trained** but are not required **to be certified**. Unless workers have received the training specified in the 454 CMR 22.00 for Deleader-workers, Deleader-supervisors, or Lead-safe Renovator supervisors, these non-certified workers must be trained by, and work under the direction of, a RRP certified renovator supervisor or a Massachusetts Lead-safe Renovator supervisor. This course is adapted from materials in EPA's Lead Safety for Renovation, Repair, and Painting course, which is the model course for certified renovators.

This training should focus on teaching learners to perform the tasks necessary to work lead-safe on the job. Emphasize the practical skills and activities, using as much hands-on instruction as possible. Hands-on exercises should include setting up barriers and signs, practice cleaning procedures, and similar activities. The course developers recommend that non-certified workers view the entire presentation, to help them understand where their individual tasks fit within the overall requirements for lead safety.

**Before the class begins**, make copies of EPA's booklet entitled *Steps to Lead Safe Renovation, Repair, and Painting* for all members of the class. Distribute copies at the beginning of the class.

- The English version of this booklet can be downloaded from <http://www.epa.gov/lead/pubs/steps.pdf>. It is also found in Appendix 5 of the student manual for the curriculum *Lead Safety for Renovation, Repair, and Painting*, EPA-HUD's model certified renovator initial training course, which can be downloaded at [http://www.epa.gov/lead/pubs/initial\\_renovator-student\\_oct2011.pdf](http://www.epa.gov/lead/pubs/initial_renovator-student_oct2011.pdf).
- The Spanish version of this booklet can be downloaded from [http://www2.epa.gov/sites/production/files/documents/rrp\\_8hr\\_app5\\_jul12\\_spa.pdf](http://www2.epa.gov/sites/production/files/documents/rrp_8hr_app5_jul12_spa.pdf).

You can sign up for email updates on EPA's RRP at [http://service.govdelivery.com/service/subscribe.html?code=USAEPA\\_426](http://service.govdelivery.com/service/subscribe.html?code=USAEPA_426).

NOTE: This training does not cover requirements of the Occupational Safety and Health Administration (OSHA), which may also apply to the renovation, repair, and painting work that is covered by EPA's RRP.

## Lead Safety for Renovation, Repair, and Painting Work

Photo source: U.S. Environmental Protection Agency, Office of Chemical Safety and Pollution Prevention, *Small entity compliance guide to renovate right: EPA's lead-based paint renovation, repair, and painting program*. EPA-740-K-10-003, September 2011.

## Who should take this course?

Take this course if you will

(1)

Work on renovation, repair, and painting jobs in homes, childcare facilities, and some schools **built before 1978**

*and*

(2)

Work under the direction of a **Mass Lead-safe Renovator Supervisor (LSRS)**



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### Explain

Everyone who is paid to do renovation work on homes, childcare facilities, and some schools built before 1978 must have some training in working safely around lead paint.

The next slide explains the difference between certified Lead-safe Renovation supervisors and non-certified workers.

Certified?	Non-certified?
<p><b>A Mass Lead-safe Renovator Supervisor (LSRS)</b> is a person who has been certified in lead-safe work practices by the Massachusetts Department of Labor Standards (DLS)</p>	<p>This course is for <b>non-certified workers</b></p> <p>It explains the skills you need to work lead-safe (under the direction of a LSRS) <b>but</b></p> <p>It does <b>not</b> meet the training requirements to become a certified LSRS.</p>
<p>Lead-safe Renovator Supervisors must take a different course than workers.</p>	

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### Explain

DLS has defined two categories of workers who must be trained: Lead-safe Renovator Supervisors and non-certified workers.

1. Lead-safe Renovator Supervisors (LSRS) have successfully completed an 8-hour Massachusetts or EPA-accredited training course in lead-safe work practices for renovation, repair, and painting. LSRS training is required by DLS Lead Safety Regulation 454 CMR 22.00. LSRS are permitted to provide on-the-job training to other workers.
2. Non-certified workers can be trained by and work under the direction of a LSRS. They do not need to complete a DLS or EPA-accredited training course, but they must have on-the-job or classroom training with hands-on practice so that they can perform all of their assigned tasks in compliance with the Lead-safe Renovation regulations.

This training is designed for the certified renovator supervisor to use in training non-certified workers. The certified renovator supervisor can:

1. Use the slides in this course to train non-certified workers in a classroom, in combination with hands-on training, *or*
2. Print the slides and distribute them as a summary of the on-the-job training.

Use EPA's *Steps to Lead Safe Renovation, Repair, and Painting* as a reference during training and as a field guide during RRP work.

### Emphasize

The present course can be used to train other (non-certified) workers.

It does **not** meet the training requirements to become an EPA-certified renovator supervisor or Mass LSRS.

## Why should you take this course?

- To meet the requirements of **Massachusetts DLS Lead-safe Renovation Regulations** if you work on homes, child-care facilities, and many schools built before 1978
- To learn how to protect yourself, your family, your customers, and your community from lead poisoning



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### Explain

The U.S. Environmental Protection Agency's Renovation, Repair, and Painting Rule (RRP) and the Mass DLS Lead-safe Renovation Regulations (454 CMR 22.00), which became effective in 2010, requires that renovators who work in homes, child-care facilities, and many schools built before 1978 must be trained in and must follow work practices that are designed to prevent lead poisoning.

Note that the fines for violating the Lead-safe Renovation Regulations may be up to \$5,000 per violation.

## Why 1978?



- Structures built before 1978 may contain **lead paint**
- If you do not handle lead paint safely  
You, the residents, their neighbors, your co-workers, and your own family can become **lead poisoned**
- This training will teach you how to work lead-safe

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### **Explain**

Lead paint was banned for residential use from 1978 on.

## What's the connection between lead poisoning and renovation?

When renovation, repair, or painting jobs disturb lead paint, the paint often turns into lead dust

If people breathe or swallow lead dust, they can become lead poisoned

Lead poisoning can harm you, your family, your co-workers, the residents of the home, and their neighbors

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### Explain

As noted earlier, paint in homes, childcare facilities, and schools may contain lead. Renovation, repair, and painting jobs that disturb such paint can create dust that contains lead.

The following activities often create a lot of lead dust:

- Preparing painted surfaces
  - Hand scraping
  - Power sanding
  - Using heat guns above 1100 degrees Fahrenheit
  - Open-flame burning
- More complicated tasks
  - Removing building components
  - Demolishing walls

## What harm does lead poisoning do?

### In young children



Lead can cause serious, permanent problems with **learning, behavior, and health**

### In adults

Lead can cause serious problems with **blood pressure, sexual function, digestion, and other illnesses**



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### Explain

Although lead poisoning is especially dangerous for young children, adults too can become lead poisoned.

In children, lead can cause

- Damage to the nervous system
- Decreased IQ
- Learning disabilities
- Attention deficit disorder
- Damage to the kidneys
- Damage to hearing

In pregnant women, lead can pass from the mother to the unborn baby and cause

- Miscarriage or premature birth
- Brain damage to the baby
- Low birth weight

In adults, lead can cause

- High blood pressure
- Fertility problems in men and women
- Sexual problems
- Digestive problems
- Muscle or joint pain
- Nervous system disorders (causing problems with thinking and concentrating, for example)

The symptoms of lead poisoning are not always obvious. The only way to know if someone has been lead poisoned is through a blood test.

By the end of this training, you will know how to



Prevent the spread of dangerous lead dust during renovation, repair, and painting work by

- Setting up the job properly to keep dust and debris from spreading
- Working so that you create as little dust as possible
- Cleaning up completely

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**Explain** the objectives of this class.

## You'll work under the direction of a DLS Lead-safe Renovator Supervisor (LSRS)

### Lead-safe Renovator Supervisors



- Perform lead-safe work as described in the EPA-RRP Rule and DLS Lead-safe Renovation Regulations.
- Train all non-certified workers in lead-safe work practices.
- Direct all non-certified workers during setup and cleanup.
- Are present at the work site during work
- Maintain proof of their own certification and training records for all non-certified workers.

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**Explain** the responsibilities of LSRS.

## Your responsibilities as a non-certified worker

- Cooperate with the LSRS in working lead-safe
- Use the lead-safe work practices that you are being taught
- Ask questions if you do not understand how to work lead-safe!
  - A LSRS must be on-site while the work is being performed.
  - A LSRS must perform cleaning verification at the end of the job and maintain job records.



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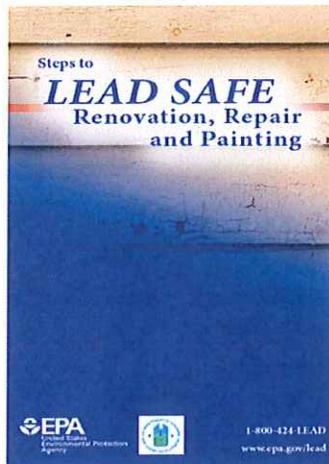
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**Explain** the responsibilities of the non-certified workers.

Encourage the participants to ask questions if there is anything they do not understand.

We'll explain what cleaning verification means later.

## EPA guidebook: *Steps to Lead Safe Renovation, Repair and Painting*



[www.epa.gov/lead/pubs/steps.pdf](http://www.epa.gov/lead/pubs/steps.pdf)

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### **Note to instructor**

Distribute copies of the publication shown. The English version of this booklet can be downloaded from <http://www.epa.gov/lead/pubs/steps.pdf>.

The Spanish version of this booklet can be downloaded from [http://www2.epa.gov/sites/production/files/documents/rrp\\_8hr\\_app5\\_jul12\\_spa.pdf](http://www2.epa.gov/sites/production/files/documents/rrp_8hr_app5_jul12_spa.pdf).

### 7 steps to lead-safe work

LSRS must	LSRS or non-certified worker must
1. Determine whether job involves lead paint	
2. Be on site at all times work is occurring	2. Set up safely
	3. Protect yourself
	4. Control the spread of dust
	5. Leave the work area clean
	6. Control waste
7. Verify cleaning or document clearance testing	

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**Explain** the 7 steps to lead-safe work

These are the 7 steps to lead-safe renovation, repair, and painting. The rest of this training will cover these steps in detail.

Note that Steps 1,2 and Step 7 are the responsibility of the **LSRS**. All of the other steps can be done by either a LSRS or a trained worker under the supervision of a certified renovator.

Remember, however, that a LSRS must be on-site.

<b>Step 1</b>	<b>Does the job involve lead paint?</b>
<b>The main idea</b>	<b>Why?</b>
<p>If lead paint is present</p> <ul style="list-style-type: none"><li>• <b>You must use lead-safe work practices</b></li></ul> <p>If you don't know whether lead paint is present</p> <ul style="list-style-type: none"><li>• You must assume that it is present, AND</li><li>• <b>You must use lead-safe work practices</b></li></ul>	<p>If you don't work lead-safe</p> <ul style="list-style-type: none"><li>• You, your family, or residents may become lead poisoned</li></ul>
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**Explain Step 1.**

Remind learners that the rule applies to homes, childcare facilities, and some schools built before 1978, when lead paint was banned.

## Step 1

### Does the job involve lead paint?

#### How will you know?

Only these people can determine whether lead paint is present:

- A LSRS (but not non-certified workers, including those who have taken this course)
- A licensed lead inspector
- A licensed lead risk assessor



A LSRS has been trained to

- Use an EPA-approved lead test kit *or*
- Collect paint chip samples for lab analysis

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#### Explain

Only a certified renovator supervisor (but not non-certified workers, including those who have taken this course), licensed lead-based paint inspector or risk assessor can determine whether lead paint is present.

Additional rules may apply if a licensed lead inspector or risk assessor performs the testing. Check with DLS or Mass Department of Public Health, Childhood Lead Poisoning Prevention Program at [www.mass.gov/dph/clppp](http://www.mass.gov/dph/clppp).

<b>Step 1</b>	<b>Does the job involve lead paint?</b>
<b>How will you know?</b>	
<b>If testing shows that <b>no</b> lead paint is present, workers are not required to use lead-safe work practices</b>	
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**Explain**

Only a certified renovator supervisor (but not non-certified workers, including those who have taken this course), licensed lead-based paint inspector or risk assessor can determine whether lead paint is present.

Additional rules may apply if a licensed lead inspector or risk assessor performs the testing. Check with DLS or Mass Department of Public Health, Childhood Lead Poisoning Prevention Program at [www.mass.gov/dph/clppp](http://www.mass.gov/dph/clppp).

<b>Step 2</b>	<b>Set up safely: Contain (isolate) work area</b>
<b>The main idea</b>	<b>Why?</b>
<b>Keep out</b> <ul style="list-style-type: none"><li>• People who are not working on project</li><li>• Pets that can track lead dust throughout the home</li></ul> <b>Keep in</b> <ul style="list-style-type: none"><li>• Dust and debris</li></ul>	<ul style="list-style-type: none"><li>• To protect workers and residents</li><li>• To prevent dust from spreading to rest of house</li><li>• To make cleanup easier at end of job</li></ul>
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**Explain Step 2.**

Here is what we mean by containing the work area.

**Keep out** people and pets until the final cleanup is complete.

It's important to keep people who are not working on the project out of the work area, so that they won't be exposed to lead dust or debris and won't track it around the house. It's especially important to keep children out of the work area.

It's also important to keep pets out of the work area to prevent them from tracking lead dust and debris throughout the home and to protect the pets themselves from lead poisoning.

**Keep in** dust and debris inside the Work Area!

**Step  
2**

**Set up safely:  
Contain (isolate) work area**

**Supplies and tools you'll need**

- Signs
- Barrier tape, rope, or fencing
- Cones
- Heavy-duty plastic sheeting
- Masking, duct, or painter's tape
- Stapler
- Utility knife or scissors



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**Explain**

Photo source: U.S. EPA, Region 1

**Step  
2**

**Set up safely:  
Keep people and pets out**

**How**

- Put up signs, tape, cones, fencing, or other barriers
- Use signs in residents' own language
- Ask owners to keep pets away from work area
- Explain that keeping out of the work area protects everyone from lead poisoning



**Note:** A LSRS must be on-site even while the work area is being set up.

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**Explain**

People are more likely to cooperate if they understand why it's important to stay out of the work area.

A LSRS must be on-site while the work area is being set up.

Photo source: U.S. EPA, Region 1

**Step  
2**

**Set up safely indoors:  
Keep dust and debris in**

**Protect furniture and other belongings**

- Take all moveable items out of work area
- Cover items that cannot be moved with heavy plastic sheeting, and tape securely
- Cover floors with heavy plastic sheeting at least 6 feet in all directions from work that will be done



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**Explain**

To keep the dust in, and people out, of your work area, you will need to take slightly different steps for inside or outside jobs.

First we'll talk about working indoors.

If you are using a vertical containment system (one that consists of impermeable barriers that extend from the floor to the ceiling, tightly sealed where it joins the floor, ceiling, and walls), floor containment may stop at the edge of the vertical barrier. (Impermeable barriers do not allow liquids, gas, or other fluids to pass through them.)

**Notes**

Refer to *Steps to Lead Safe Renovation, Repair and Painting* for more detailed information.

**Step  
2**

**Set up safely indoors:  
Keep dust and debris in**

**Seal off work area**



Close, cover with plastic sheeting, and seal

- All windows
- All doors (except for entry to work area)
- All air vents

If necessary, create  
airlock to enter and  
leave work area



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**Explain**

**Hands-on activity**

If possible, have learners set up a sample area, including an airlock for an entryway.

Photo source: U.S. EPA, Region 1

**Step  
2**

## Set up safely indoors

Put all tools and supplies on plastic sheeting before starting work



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Photo source (right): *Don't Spread Lead: A do-it-yourselfer's guide to preventing lead poisoning by working lead-safe* [video], Connecticut Department of Public Health and University of Connecticut Healthy Environments for Children Initiative

Photo source (left): <http://www.epa.gov/pcbsincaulk/guide/guide-sect2.htm>

**Step  
2**

**Set up safely outdoors:  
General**

**Keep dust and debris out of home**

- Cover ground and plants with heavy-duty plastic sheeting or tarps
  - Extend sheeting/covering far enough to contain any dust and debris
  - Secure sheeting to building
- Within **20 feet of work area**
  - Close and seal windows and doors
  - Move or cover play areas
- Put tools and supplies on protective sheeting before starting work



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**Explain**

These precautions are designed to catch dust and debris and keep them from getting inside the home, onto the ground of the property, or onto neighboring properties.

Put all necessary tools and supplies on the protective sheeting before you begin work, so that you won't have to step off the protective sheeting before the work is complete.

**Notes**

To secure sheeting to building, use either tape or a wood strip and staples.

If you are using a vertical containment system, the plastic sheeting on the ground may stop at the edge of the vertical barrier.

Photo source: U.S. EPA, Region 1

<b>Step 2</b>		<b>Set up safely outdoors: Vertical containment</b>
Why?	<ul style="list-style-type: none"><li>• To ensure that dust and debris do not contaminate nearby buildings or properties</li></ul>	
When ?	<ul style="list-style-type: none"><li>• When work affects surfaces within 10 feet of property line</li><li>• Wherever necessary to prevent contamination of<ul style="list-style-type: none"><li>• Other buildings</li><li>• Other areas of the property</li><li>• Nearby buildings or properties</li></ul></li></ul>	
How?	<ul style="list-style-type: none"><li>• Set up vertical containment or equivalent precautions</li></ul>	

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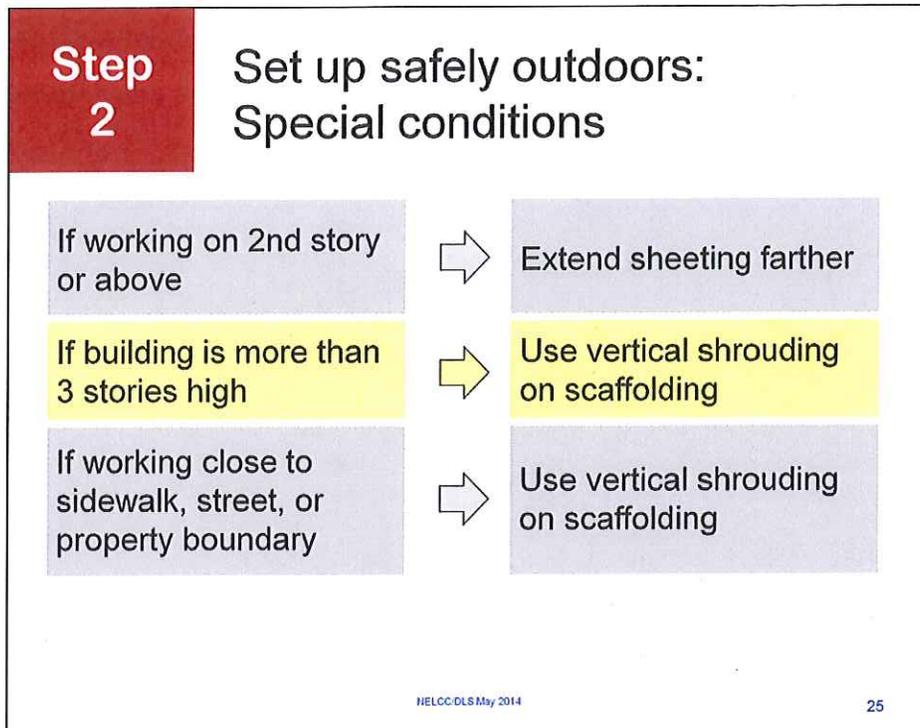
**Explain**

Vertical containment may be useful in these situations.

Vertical containment means a vertical barrier that isolates the work area. It consists of plastic sheeting or other impermeable material over scaffolding or a rigid frame, or an equivalent system.

Use shrouded power tools connected to HEPA vacuum cleaners to capture generated dust and debris at the source of generation.

Photo source: EPA course: Lead Safety for Renovation, Repair, and Painting, module 4, October 2011.



**Explain**

If you are working on the 2nd story or above, extend the sheeting farther out from the base of the home and to each side of the area where paint is being disturbed.

Use vertical shrouding on scaffolding if the building is more than three stories high or if the work is close to a sidewalk, street, or property boundary. Use shrouded

**Step  
2**

**Set up safely outdoors:  
Special conditions**

**If conditions are very windy**

Avoid working in high winds if possible



If you must work, be very careful to keep dust and debris inside work area

You may need to make windscreen at edge of ground-cover plastic

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**Explain**

Avoid working in high winds if possible. The EPA RRP Rule or the DLS Lead-safe Renovation Regulations does not specifically address wind speed, but when the wind is strong enough to move dust and debris, be especially careful to keep the work area contained.

You may need to create a plastic windscreen at the edge of the ground-cover plastic to keep dust and debris from spreading.

Keep in mind that you are responsible for preventing dust and debris from leaving the work area, so take appropriate precautions.

Photo source: U.S. EPA, Region 1

**Step 2** Set up safely:  
Very dusty jobs

**Examples**

- Opening up wall cavities
- Removing old drop ceilings
- Scraping paint
- Dry sanding by hand

Usually require even more careful setup. All of the previous steps and

- Turn off forced-air heating and air-conditioning systems
- Set up vertical containment to limit size of work area

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**Explain**

Some jobs create more dust than can be contained by the methods described on the previous page. Certified renovator supervisors should judge carefully whether those methods provide enough containment or whether they should take additional precautions.

Vertical containment means a vertical barrier consisting of plastic sheeting or other impermeable material over scaffolding or a rigid frame, or an equivalent system of containing the work area. Vertical containment is required for some exterior renovations but it may be used on any renovation.

<b>Step 2</b>	<b>Set up safely: Maintain containment</b>	
	<b>Problems may occur after containment is set up</b> <i>Examples</i>	<b>What should you do?</b>
	Tape comes loose	
	Plastic sheeting gets torn	
	Paint chips fly off plastic during work	
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**Ask**

Ask learners what they think they should do if problems arise after containment is set up.

**Step 2** Set up safely: Maintain containment

Problems may occur after containment is set up <i>Examples</i>	What should you do? <i>Fix them!</i>
Tape comes loose	Put down more tape
Plastic sheeting gets torn	Repair or replace torn plastic sheeting
Paint chips fly off plastic during work	Extend plastic sheeting
	Questions? Ask the LSRS!

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**Explain**

If problems occur, fix them or call the certified renovator supervisor to review.

**Step 3**      **Protect yourself**

**The main idea**

Protect yourself from lead on the job → Avoid **breathing and swallowing** lead dust

Protect your family from lead poisoning → Avoid **carrying lead dust home** on your skin, hair, and work clothes

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**Explain Step 3.**

If a worker breathes or swallows lead dust, he or she may become lead poisoned.

If a worker carries home lead dust on his or her skin, hair, or clothing, the worker's family may be in danger of becoming lead poisoned.

Remind learners that lead poisoning can affect everyone, although it is especially dangerous to young children and pregnant women.

**Step  
3**

## Protect yourself: Personal Protective Equipment

Safety goggles or glasses to protect your eyes

Disposable latex or rubber gloves to keep your hands clean, especially when you eat

Disposable coveralls to keep dust off your clothes



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### Explain

Photo source: U.S. EPA, Region 1

**Step  
3**

## Protect yourself: Personal Protective Equipment



Disposable painter's hat to keep dust out of your hair

Disposable shoe covers to keep dust off your shoes and keep you from tracking dust out of the work area

Disposable N-100 respirator to keep you from breathing lead dust

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### Explain

**Instructor should make appropriate notation about respirator use. Appropriate training, fit testing and medical monitoring must be in compliance with OSHA Standards.**

Photo source: U.S. EPA, Region 1

**Step 3**      **Protect yourself:  
At work**

	<b>Wear personal protective equipment</b>
	<b>Wash your hands and face carefully</b> <ul style="list-style-type: none"><li>• Each time you leave work area</li><li>• Before you eat or drink</li><li>• At end of each work day</li></ul>
<b>Do not eat, drink, or smoke in work area</b> 	

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**Explain**

The LSRS should post a warning sign at each entrance to the work area, reminding workers not to eat, drink, or smoke in the work area.

If appropriate, mention that workers should not apply cosmetics, even lip balm, in the work area.

**Note**

OSHA rules may require additional steps to protect the health of workers on the job.

Photo source: top left, U.S. EPA, Region 1

**Step 3**      **Protect yourself and your family: After work**

**Clean your clothes**

- At end of work day, vacuum dust off clothes and shoes or put on clean clothes and shoes
  - Use HEPA vacuum to collect dust
  - Do not use compressed air to blow dust off clothing
- Wash work clothes separately from household laundry



**No hugging until you are clean**  
Do not hug anyone until you have

- Changed out of your work clothes
- Washed yourself thoroughly

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**Explain**

Use a HEPA vacuum to clean off clothes and shoes.

We'll talk more about a HEPA vacuum later.

**Step  
4**

**Control the spread of dust**

**The main idea**

- Create as little dust as possible
- If you do create dust, keep it from spreading

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**Explain Step 4.**

**Step  
4**

## Control the spread of dust

### Supplies and tools you'll need

- Wet-dry sandpaper, sanding sponge
  - Misting bottle or pump sprayer
  - Heavy-duty plastic sheeting and bags
  - Utility knife or scissors
  - Masking, duct, or painter's tape
  - HEPA vacuum cleaner
  - Tack pads, paper towels, or disposable wipes
- For some jobs, you'll also need*
- Low-temperature heat gun
  - Chemical strippers without methylene chloride
  - Power tools with HEPA attachments

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### Explain

A HEPA vacuum is a high-efficiency particulate air vacuum cleaner. It has special filters and can safely remove very small particles of lead dust from places like floors, windowsills, and carpets, without returning them to the air.

If you need to use power tools (such as sanders and grinders), you **must** use tools that are equipped with HEPA-filter attachments to collect any dust that is created. Note that power tools must also be shrouded.

Use heat guns that are set below 1,100 degrees Fahrenheit.

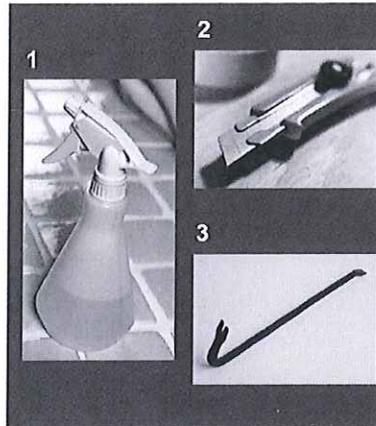
Note: In Connecticut, the limit for heat guns is 700 degrees Fahrenheit.

**Step  
4**

**Control the spread of dust**

**Create as little dust as possible**

1. Mist areas before sanding, scraping, drilling, and cutting (except near live electrical outlets)
2. Score paint with utility knife before separating components
3. Pry and pull apart components instead of pounding and hammering



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**Explain**

**Step  
4**

## Control the spread of dust

### Keep dust within work area

- Keep work area closed off from rest of home
- Stay in contained work area and on contained paths
- Don't track dust and debris out of work area
  - Remove disposable suit and shoe covers before you leave work area
  - Clean shoes on tack pads or use damp paper towels to wipe off shoes before you step off protective sheeting

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**Explain**

You may use a HEPA vacuum to clean off shoes and clothing when workers leave the work area.

**Step  
4**

**Control the spread of dust**

**To remove components from work area**

- Before removing
  - Wrap securely in heavy plastic sheeting or secure in heavy-duty plastic bags
  - HEPA vacuum outside of bag
- After removing
  - Store in safe area away from residents



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**Explain**

Photo source: U.S. EPA, Region 1.

**Step  
4**

**Control the spread of dust:  
Prohibited practices**

**When working on lead paint**

- **Do not** use open-flame burning
- **Do not** remove paint with high heat (heat guns must operate under 1,100 degrees Fahrenheit)
- **Do not** use power tools, such as sanders and grinders, unless they are shrouded and have HEPA attachments

**No**



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**Explain**

On painted surfaces, you may **not** use high-speed machines designed to remove paint or other surface coatings, such as power sanders, grinders, planers, needle guns, abrasive blasters, or sandblasters, unless these machines have shrouds or containment systems and are equipped with a HEPA vacuum attachment to collect dust and debris at the point of generation. HEPA attachments collect dangerous lead dust created when using power tools.

If you do use the permitted (shrouded or contained) machines, they must be operated so that no visible dust or release of air occurs outside the shroud or containment system.

You may not use a heat gun on painted surfaces at temperatures at or above 1,100 degrees Fahrenheit.

Photo source: [http://www.nps.gov/hps/tps/standguide/rehab/rehab\\_wood.htm](http://www.nps.gov/hps/tps/standguide/rehab/rehab_wood.htm)

**Step  
5** Leave work area clean

**Main idea**

Leave work area completely clean of dust and debris

- At end of every day
- At end of job

**Note:** A LSRS must be on-site while work area is being cleaned

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**Explain** Step 5.

**Step  
5**

**Leave work area completely  
clean of dust and debris**

**Supplies and tools you'll need**

- Heavy-duty plastic bags
- Masking, duct, or painter's tape
- Misting bottle or pump sprayer
- Disposable wet wipes or hand towels
- HEPA vacuum with beater bar



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**Explain**

Photo source: U.S. EPA, Region 1

**Step  
5**

**Leave work area completely  
clean of dust and debris**

**Supplies and tools you'll need**



- Detergent or general-purpose cleaner
- Mop and disposable mop heads
- Two buckets or a two-sided bucket with wringer
- Shovel and rake
- Wet mopping system
- Swiffer®-type dry cloths

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**Explain**

Photo source: U.S. EPA, Region 1

**Step  
5**

**Leave the work area clean:  
Every day**

**Throughout each day**

- Clean and pick up as you work
  - Vacuum work area with HEPA vacuum cleaner often
  - Put trash in heavy-duty plastic bags
- Wash your hands and face each time you leave work area



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**Explain**

Reminder workers to use **HEPA** vacuum, not standard household or shop vacuum.

**Step 5** Leave the work area clean: Every day

**At end of each day**



- Clean entire work area and two feet beyond work area in all directions
- Vacuum again with HEPA vacuum cleaner
- Clean your tools
- Wash well before you go home
- Safely dispose of, or clean off, personal protective equipment

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**Explain**

Reminder workers to use **HEPA** vacuum, not standard household or shop vacuum.

Make sure to clean two feet beyond work area. For example, if work area is whole room, clean two feet beyond the doorway into the room.

**Step 5** Leave the work area clean:  
At end of job

- Keep sheeting that isolates work area in place until work area is completely clean
- Remove plastic sheeting carefully
  - Spray with water
  - Fold with dirty side in
  - Tape it shut
  - Dispose of properly
- Remove all dust, chips, trash, and debris, including building components, from work area
- Vacuum all surfaces, including walls, with HEPA vacuum cleaner
  - Use beater bar on carpets

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**Explain**

<b>Step 5</b>	<b>Leave the work area clean: At end of job</b>	
	<b>Damp clean</b> <ul style="list-style-type: none"><li>• Mist work area</li><li>• Scrub with general-purpose cleaner on wet rag or mop until all dust and debris are gone</li><li>• Change rinse water often</li></ul>	<b>Inspect</b> <ul style="list-style-type: none"><li>• Look around work area<ul style="list-style-type: none"><li>• Also look 2 feet beyond work area and paths where debris was carried</li><li>• You should see no dust or debris</li></ul></li><li>• Clean area again thoroughly if you see any dust or debris</li></ul>
	<b>HEPA vacuum again</b> <ul style="list-style-type: none"><li>• Let surfaces dry, and vacuum again</li></ul>	
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**Explain**

**Step  
6**

**Collect and control waste**

**The main idea**

**Contain waste at all times**

- On-site
- When it is being removed from the site



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**Explain Step 6.**

**Step  
6**

**Collect and control waste:  
What is included?**

- Waste from painted surfaces
  - Dust
  - Debris
  - Paint chips
  - Architectural components
- Protective sheeting
- Dirty water
- Cleaning supplies
  - Mop heads
  - Wipes
  - HEPA filters
- Protective gear
  - Disposable clothing
  - Gloves
  - Respirators
- Any other waste

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**Explain**

All of these things are considered waste.

**Step  
6**

**Control waste:  
How to bag it**

Bag and seal all waste before removing it from work area

- Put all waste in heavy plastic sheeting or bags
- Gooseneck seal bag with duct tape
  - Double bag when necessary to prevent tears
- Wrap large components in protective sheeting and seal with tape



- HEPA vacuum outside of waste bags and bundles before removing them from the work area.

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**Note to trainer:** This step is a good hands-on activity to practice.

**Step  
6**

**Control waste:  
How to store it**

- Store all waste in secure container or dumpster until disposal
- Dispose of waste as soon as possible
- Do not carry waste in open truck or personal vehicle



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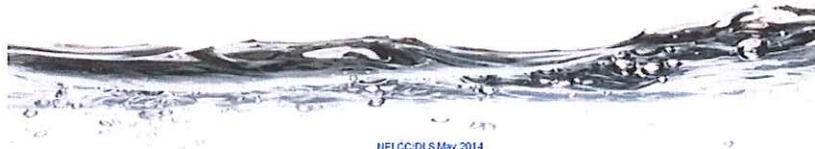
**Explain**

**Step  
6**

**Control waste:  
Water**

Check and follow **federal, state, and local rules** to dispose of water used to remove paint and to clean up

- **If rules allow**, filter water and dump it in a toilet
- **If rules do not allow** this method
  - Collect water in a drum and remove from work site
  - Do **not** dump water down a sink or tub, in a storm drain, or on the ground



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**Explain**

The certified renovator supervisor should learn the federal, state, and local rules and explain them to the workers.

Water used to remove paint or to clean up should be filtered through a 0.5 micron filter.

If local rules do not allow you to dump in a toilet, you may have to contain and test the water. You may have to contact a waste disposal company to help you dispose of this waste water.

Check with your local water treatment authority, and check federal and state regulations for more information. See EPA's website: <http://www.epa.gov/epawaste/wyl/stateprograms.htm>.

In Connecticut, if the property is on a septic system, the wastewater must be hauled away. It cannot be dumped into the septic system. If the property is on a city sewer, first contact the local sewer authorities and then follow their directions. Usually, you can filter the water through a mesh filter and put it down a toilet. If you have any questions, contact the Connecticut Department of Energy and Environmental Protection at 860-424-3018.

**Step  
6**

**Control waste:  
Disposal rules**

EPA and MassDEP consider most residential renovation, repair and painting activities “routine residential maintenance”.

Waste created by these activities

- Is considered **non-hazardous solid waste**
- Can be disposed of in an ordinary waste landfill

**However, if your state or locality has stricter waste disposal requirements, you must follow the stricter rules.**

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**Note to trainer**

Make sure that you know the rules in the area where you are working and explain these rules to your workers.

In Massachusetts, the Department of Environmental Protection (MassDEP) considers residential renovation, repair, and painting activities as “routine residential maintenance” and waste generated during renovation activities may be discarded in a municipal solid waste landfill or a municipal solid waste combuster.

If these conditions are **not** met, the waste must be tested through a laboratory test – the Toxicity Characteristic Leaching Procedure (TCLP) to determine if the waste exceeds the lead (TCLP) concentration limit of 5 mg/l. If it does, the waste is classified as hazardous waste and disposed of accordingly.

More information is available on the MassDEP website at [www.ma.gov/dep](http://www.ma.gov/dep) (look in the list under “lead”) or by calling the MassDEP at (617) 292-5898.

<b>Step 7</b>		<b>Check the work: Visual inspection</b>
Why?	To make sure no lead dust or debris is left behind	
Who?	LSRS only	
How?	A. Looks carefully at entire work area B. If LSRS sees dust, paint chips, or debris, clean again C. Repeat steps A and B until the LSRS cannot see any dust, paint chips, or debris in work area	

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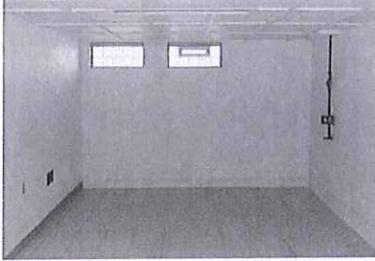
**Explain Step 7.**

Remind the non-certified worker that Step 7 must be done by the certified renovator supervisor.

**Step  
7**      **Check the work:  
After passing visual inspection**



**For outside work**  
Job is complete



**For all inside work**  
Visual inspection must be followed by **cleaning verification or clearance testing**

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**Explain**

The next slide explains cleaning verification and clearance testing.

<b>Step 7</b>	<b>Cleaning verification or clearance testing?</b>	
<b>Cleaning verification</b> <ul style="list-style-type: none"> <li>Required for most renovations that are                             <ul style="list-style-type: none"> <li>Performed by contractor or landlord <i>and</i></li> <li>Not funded by federal government</li> </ul> </li> </ul>	<b>Clearance testing</b> <ul style="list-style-type: none"> <li>Required in projects that are                             <ul style="list-style-type: none"> <li>Performed by contractor or landlord <i>and</i></li> <li>Funded by federal government</li> </ul> </li> <li>May be requested by property owner instead of cleaning verification</li> </ul>	
<b>Must be done by the LSRS, not a worker</b>	 <p style="font-size: small;">Taking a dust wipe sample</p>	<b>Must be done by licensed lead inspector or risk assessor, or dust sampling technician</b>

**Explain**

When all the cleaning is complete, and before residents can return to the work area, the certified renovator must conduct a cleaning verification procedure or an authorized person must conduct a clearance examination to make sure that lead dust is not left behind.

Briefly, for cleaning verification, the certified renovator compares dust wipe samples from window sills, countertops, and uncarpeted floors with a standardized card. If a wipe is lighter than or matches the card, the surface is considered clean. The procedure for cleaning verification is covered in detail in the course for certified renovators.

For clearance testing, wipe samples are sent to an EPA-approved lab, which measures their lead content. Clearance testing is required by the U.S. Department of Housing and Urban Development (HUD) for housing that receives federal assistance. If the HUD rule applies, a clearance examination is required in place of cleaning verification. Property owners may also request clearance testing in place of cleaning verification. And some states and localities may require clearance testing. For example, in Massachusetts, clearance testing is required for licensed child daycare facilities. Specialized training is required to conduct clearance testing. (Note that Massachusetts does not recognize dust sampling technicians.)

In both methods, if too much lead dust remains, the area must be cleaned again.

Photo source: Joint EPA-HUD Curriculum, Model Certified Lead Dust Sampling Technician Training Course, Student Manual, October 2011 ([http://www2.epa.gov/sites/production/files/documents/ldst-instructor\\_manual-2011-10-12\\_0.pdf](http://www2.epa.gov/sites/production/files/documents/ldst-instructor_manual-2011-10-12_0.pdf))

## Now you know the 7 steps to lead-safe renovation

1. Determine whether the job involves lead paint



2. Set up safely



3. Protect yourself



4. Control the spread of dust



5. Leave the work area clean



6. Control the waste



7. Verify cleaning or document clearance testing

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### **Review**

Remember that steps 1 and 7 are the responsibility of the LSRS.

## Questions?

For more information, contact

- **Massachusetts Department of Labor Standards (DLS)**
  - [www.mass.gov/dols](http://www.mass.gov/dols)
  - 617-626-6960
- **U.S. Environmental Protection Agency**
  - **General information (New England)**  
[http://www.epa.gov/region1/eco/ne\\_lead/index.html](http://www.epa.gov/region1/eco/ne_lead/index.html)
  - **Frequently asked questions**  
<http://www.epa.gov/lead/pubs/rrp-faq.pdf>
  - 888-372-7341

## Check your learning

	True	False
1. This course qualifies you to be a Lead-safe Renovator Supervisor.		
2. Lead paint may be found in houses built before 1978.		
3. Lead is dangerous for children but not for adults.		
4. Common renovation activities can create dangerous lead dust.		
5. Anyone can test to see whether a job involves lead paint.		
6. People who are not working on a project should be kept out of the work area.		
7. Keep windows in the work area open to provide fresh air.		
8. It's safe to drink but not to eat or smoke in the work area.		
9. Regular power sanding is the best way to remove lead paint.		
10. Use a HEPA vacuum for cleaning.		

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You can ask learners to complete this test to see how well they have understood and remember the information in this training. The answer key is on the next slide.

## Answer key

	True	False
1. This course qualifies you to be a Lead Safe Renovation Supervisor.		X
2. Lead paint may be found in houses built before 1978.	X	
3. Lead is dangerous for children but not for adults.		X
4. Common renovation activities can create dangerous lead dust.	X	
5. Anyone can test to see whether a job involves lead paint.		X
6. People who are not working on a project should be kept out of the work area.	X	
7. Keep windows in the work area open to provide fresh air.		X
8. It's safe to drink but not to eat or smoke in the work area.		X
9. Regular power sanding is the best way to remove lead paint.		X
10. Use a HEPA vacuum for cleaning.	X	

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These are the correct answers. If the learner has made any errors, be sure to explain the correct answers.

1. This course qualifies you to be a Lead-safe Renovator supervisor. **False.** A different course is required to become a Lead-safe Renovator supervisor.
2. Lead paint may be found in houses built before 1978. **True.**
3. Lead is dangerous for children but not for adults. **False.** Lead is dangerous for children and adults.
4. Common renovation activities can create dangerous lead dust. **True.**
5. Anyone can test to see whether a job involves lead paint. **False.** Only a certified renovator, lead inspector, or lead risk assessor can test.
6. People who are not working on a project should be kept out of the work area. **True.**
7. Keep windows in the work area open to provide fresh air. **False.** Keep windows (as well as doors) closed to keep lead dust inside the work area.
8. It's safe to drink but not to eat or smoke in the work area. **False.** It's not safe to eat, drink, or smoke in the work area.
9. Regular power sanding is the best way to remove lead paint. **False.** Regular power sanding may create and spread dangerous amounts of lead dust. Wet sanding and power sanding using a shrouded tool attached to a HEPA filter are acceptable ways to remove lead paint.
10. Use a HEPA vacuum for cleaning. **True.**

## Evaluation of this training

- Was the information clear?
- Do you still have questions about how to work lead-safe?

## Training record sheet

Non-certified worker's name: Date:	Check below if worker viewed slides on the topic	Check below if worker completed hands-on activity
1. Determining whether job involves lead paint		Task must be done by certified LSRS
2. Setting up safely		
• Setting up barriers, signs, and flapped door entries		
• Covering or removing furniture		
• Controlling the spread of lead dust		
• Establishing containment indoors		
• Establishing containment outdoors		
3. Using personal protective equipment		
4. Cleaning up at the end of a job		
• Indoors		
• Outdoors		
6. Bagging waste		
7. Other: explain		
7. Checking the work		Task must be done by certified LSRS
• Inspecting visually		
• Cleaning verification		
Signature of LSRS who conducted the training:		

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### Notes

To ensure that non-certified workers are trained to perform that activities to which they are assigned, EPA requires that certified renovator supervisors document the on-the-job training, including practical hands-on training, of non-certified workers. You can make a copy of this slide for each non-certified worker to record his or her training.

Instructions for the hands-on activities are in the *Student Manual of the Joint EPA-HUD Lead Safety for Renovation, Repair, and Painting Curriculum*, appendix 6. This form has been adapted for training non-certified workers.

The LSRS must:

- Show which workers have had which training
- List all training topics for each worker
- Sign the record of each worker's training
- Keep this form at the job site while the work is being performed, and keep it for 3 years after the work has been completed. Like other records, this form should be kept in a safe, secure, clean, and dry place.