

CLEAN UP, DISPOSAL & CLEARANCE

10

In this chapter you will learn about:

- ☐ The importance of good cleanup;
- ☐ What cleanup materials to use;
- ☐ How to do daily cleanup;
- ☐ How to do final cleanup;
- ☐ What the clearance levels are;
- ☐ What to do with waste; and
- ☐ How to dispose of hazardous waste.

Cleanup of Lead-paint Dust

If you do not clean up, lead dust levels will increase. Careful cleaning prevents future exposures to lead and helps to protect the family who will move back into the homes you work on. Any lead dust that remains can poison them. Careful cleaning also protects you while you work.

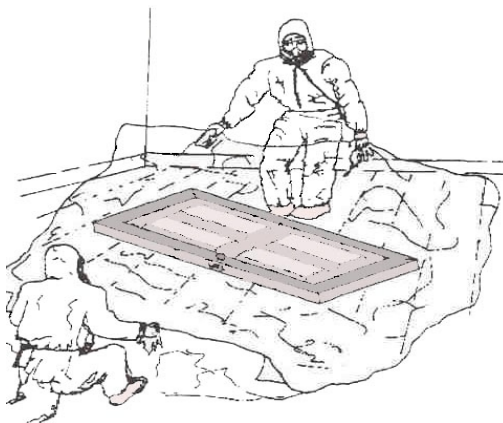
Cleanup Materials

- ▶ Protective suit and respirator;
- ▶ Work gloves and eye protection;
- ▶ Hand pumped water sprayer;

- ▶ Water;
- ▶ Labeled heavy-duty plastic bags (6-mil poly);
- ▶ Plastic shovels and/or dust pans;
- ▶ HEPA vacuum cleaner (with special attachments);
- ▶ Lead cleaner;
- ▶ Buckets (at least 3 mop buckets, one with a wringer);
- ▶ Sponges and rags;
- ▶ String mops, sponge mops, and extra mop heads for both;
- ▶ Clean step ladder; and
- ▶ Special containers for hazardous waste (if needed).

Daily Cleanup

Cleaning the work site every day helps to keep lead dust levels down. It keeps the work area as clean as possible. The OSHA Lead Standard says all surfaces must be kept as free from lead dust as is practical. This keeps lead out of the air. Cleaning the work site prevents you from spreading lead dust around. It also helps make final cleanup – and passing the final inspection – much easier. You may be exposed to high levels of lead in cleanup. You must wear a respirator and protective clothing during cleanup.



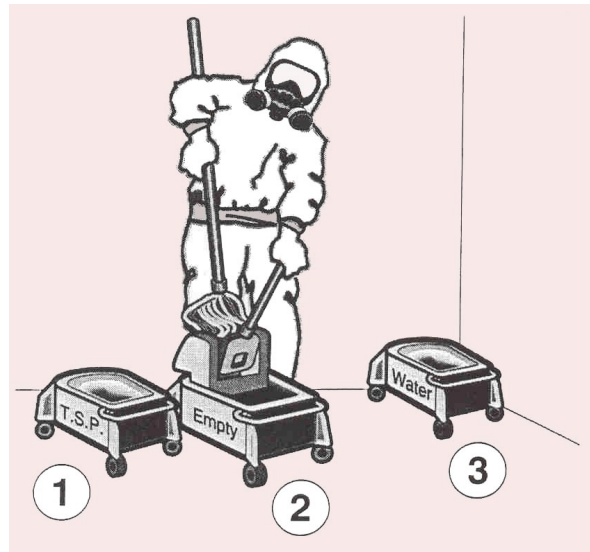
1. Wrap up and label large debris.

Wrap large debris (like doors, windows, etc.) in 6-mil poly. Seal the wrapped debris with duct tape. Put a label on it that says **LEAD CONTAMINATED**. Store waste in a secure area until it can be tested and disposed of properly.

2. Wet mop the floor. Bag and label small debris.

Water-mist dust and small debris with water. Wet mop or wet

sweep it all up. Do not dry sweep. This stirs up lead dust. Put the debris into 6-mil plastic bags and seal the bags. Bag, tape, and throwaway the mop heads with the debris. **LEAD CONTAMINATED** labels must be put on. Store waste in a secure area until it can be tested and disposed of properly.



3. **HEPA vacuum all surfaces in the work area.** The OSHA Lead Standard says that you should not allow lead dust to build up. It says wherever possible use the HEPA vacuum. **Do not use a regular shop vacuum** – it can't filter lead dust. Start at the far end of the work area and move towards the exit through the decon.



4. **Check poly and repair any tears or rips.** Check for tears in the poly and repair any rips as you find them. At the end of each day, inspect the whole containment for missed holes, rips, and tears in the poly. Make sure you check the poly covering the air vents and heat regulators (critical barriers).



Final Cleanup

The cleanup done at the end of the abatement job is called a **final cleanup**. Final cleanup must be done slowly and carefully. **There are three stages of final cleanup.** Each stage is very important and must be done thoroughly.

Many abatement jobs fail the final inspection because the final cleanup was not done properly. If an abatement job fails, you will have to do cleanup over again. You will have to redo cleanup as many times as it takes for the job to pass. Redoing cleanup is expensive and takes a lot of work time. It is best to do it right the first time.

You must wait from **1 hour (HUD) to 24 hours (some states)** after you finish the abatement before you start final cleanup. Check your state and local laws. This allows the lead dust that is in the air to settle. The time that it takes for the lead dust to settle depends on the type of work methods you used. Dust may settle onto surfaces within a few hours of encapsulation or enclosure. Smaller particles created with a needle gun or heat gun will take much longer to settle out of the air.

Stage 1: Special Cleaning

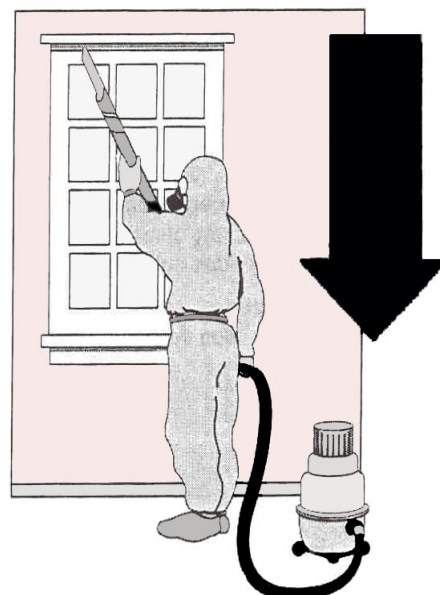
1. Wear protective gear.

Put on plastic gloves to protect your hands from the lead cleaner. Wear protective goggles or other eye gear to shield your eyes. You will also wear your respirator, disposable suit and booties or rubber boots.

2. HEPA vacuum all surfaces.

HEPA vacuum all surfaces in the work area, including areas that had been covered with plastic.

Start at the far end and then



work towards the decon. Begin with ceilings or the top of the walls and work down, cleaning the floors last. Do every inch of the windows, especially the wells. Use the corner tool to clean where the floor meets the baseboard and all cracks in the floor boards. Use the brush tool for the walls. Move slowly and carefully to get all the dust.

3. Collect waste in sealed plastic bags or wrap in poly.

Place any remaining disposable items in 6-mil plastic bags and tie the bags shut. If they are too large, wrap them in 6-mil poly. Seal them with duct tape. Put labels on them that say **LEAD CONTAMINATED**.



4. Wet mop and bag dust.

Use the spray bottle to wet down all dust and debris with a fine mist of water. This will help control the dust during cleanup. Wet mop the entire work area. Bag and seal the debris. Label the waste **LEAD CONTAMINATED**.

5. Take off first layer of poly.

If you used two layers of poly, now is the time to remove only the first layer. Wet mist the poly before removing it. This contaminated plastic must be removed carefully. Remove the upper plastic that covers cabinets and counters first. Then carefully remove the poly on the floor. Do not remove floor poly until all other poly is removed. Fold top layer of poly onto itself from the edges into the center in order to trap any remaining dust inside. Seal up with duct tape and put into plastic bags for disposal.

If you did not do any demolition or replacement, you may have only used one layer. If so, do **not** remove that layer and skip to Step #6.

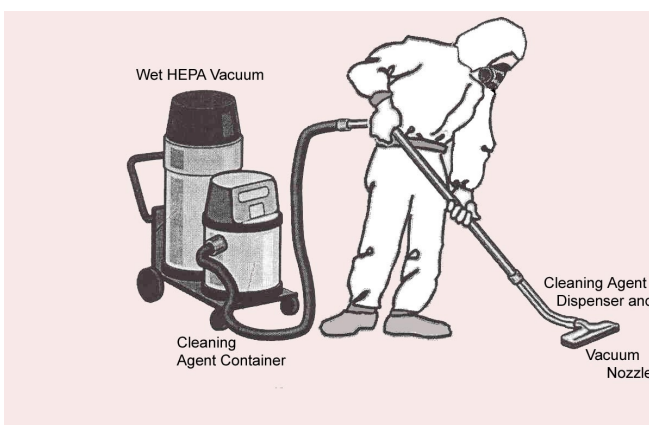


6. Wash all surfaces with lead cleaner.

Wash all surfaces in the work area with a lead cleaner (such as TSP), including areas that had been covered with plastic. Some wallpaper should only be HEPA vacuumed and not washed.

Start from the top and work down. Start with the ceiling and work down to the floors.

Mix up a new solution of lead cleaner often so it stays clean. Change the rinse water, rags, and mop heads at least once every 500 ft². The number of times you must change both the TSP water and the rinse water will depend on how dirty the



area is. After washing each room, go back over the surfaces with a clean water rinse.

7. Remove the bottom layer of poly. Clean the floor.

After all the work above the floor has been cleaned, carefully remove the bottom layer of poly from the floor. Fold the contaminated side of the poly into itself. This will contain the lead dust and moisture. Seal the bundle with duct tape and place it in a 6mil bag or wrap it in 6-mil poly. Label it **LEAD CONTAMINATED**. HEPA vacuum the floor. Use the lead cleaner to wash it. Rinse it with clean water.

8. HEPA vacuum all surfaces again.

After all surfaces have dried, HEPA vacuum a second time. Vacuum until no dust or residue can be seen. Move slowly and

carefully.

9. Collect used cleaning items in sealed plastic bags.

Discard all items used for cleaning (towels, sponges, rags, mop heads) in 6-mil plastic bags. Seal the plastic bags and label them **LEAD CONTAMINATED**.

Visual Inspection

The work area should be visually inspected before you repaint abated surfaces. The inspector may come in and look at the surfaces chosen for abatement to see if they have been abated. The inspector will also look for signs of dust.

If all the abatement work is done and no dust can be seen, the job passes the visual inspection. If the job does not pass visual inspection, you will have to re-clean the area until no dust can be seen.

In some states there is no requirement for visual inspection. It is still a good idea to make sure you don't see any signs of lead dust before repainting an abated surface.

Stage 2: Painting and Sealing

All abated surfaces should be primed with the correct type of primer for the surface. Repaint all abated surfaces. A final coat of gloss or semi-gloss is recommended. Enclosures may not need to be painted. Wooden floors should be sealed with clear polyurethane-based paint. Other floors like tile or linoleum should be sealed with wax. Concrete floors need to be sealed with a concrete sealer.

Stage 3: Repeat Special Cleaning

Allow at least **24 hours** between Stage 2 and Stage 3 for the paint and sealers to dry or follow the manufacturer's specifications. Then HEPA vacuum all surfaces. Wash all surfaces with a lead cleaner. Then HEPA vacuum all surfaces again.

Final Inspection

Once the area has been cleaned and repainted, an inspector will take dust samples for the final inspection. These samples are called clearance dust samples. The job must pass final inspection before occupants can move back into the building.

The inspector will take samples from each room in the work area. The inspector will take at least three samples from each room, and at least one from the floor and one from a window sill. The actual number of samples will depend on the abatement method you used and Federal/State standards. The inspector will take more samples from surfaces that were chemically stripped than for enclosed surfaces. **The purpose of the final inspection is to make sure that dust levels are as low as they can be.**

Clearance Dust Levels

The lead dust levels from these samples must be acceptable for clearance. Clearance means that the area is lead safe. Remember, lead in dust is measured in micrograms (ug) of lead per square foot (ft²) of area tested. **HUD surface clearance levels (based on weighted average of all wipe samples) are: floors – below 40 ug/ft², interior window sills – below 250 ug/ft², and window wells (troughs) – below 400 ug/ft².**

Some states have lower (safer) clearance levels. **If the dust samples meet these levels, then the job passes final inspection.** If they are above these levels, you will have to redo cleanup. You will have to redo cleanup as many times as it takes for the job to pass the final inspection.

All abatement methods create lead dust. Dust tests show if dangerous levels of lead dust still exist in a home. Lead dust is a major source of lead exposure for young children. Children have been poisoned after abatement jobs because cleanup was not done well. This is why cleanup is so important. This is why passing final inspection is so important.

Waste From a Lead Abatement Job

There are many waste materials from lead abatement jobs –

- ▶ Lead-based paint chips;
- ▶ Lead-based paint dust;
- ▶ Bulky items that were removed (windows, doors, etc.);
- ▶ Poly and duct tape;
- ▶ Sludge from paint removers;
- ▶ Solvents from paint stripping;
- ▶ Liquid waste (from cleanup, neutralizing surfaces, water blasting);
- ▶ Used cleaning supplies; and
- ▶ Disposable work clothes and respirator filters.

Your employer must find out the federal, state, and local rules on how to dispose of each type of waste likely to be created before the project begins. The building owner will need to know that all of the waste was disposed of legally.

Handling Waste on the Job

According to federal law, if your job is creating more than 220 pounds of waste per month, your employer will need to take a small sample from each type of waste and have it tested. If your contractor is creating less than 220 pounds of waste per month, the waste still needs to be tested (but requirements for disposal follow state law).

Separate each type of waste on a job. Your contractor will take a sample from each type of waste to see if it is hazardous. Hazardous waste is waste that can poison people and the environment if it is not handled carefully. **All waste should be kept within the contained area on the job until it is tested to determine if it is hazardous.**

Sometimes regulations call all waste solid waste until it is tested. Sometimes the regulations call all non-hazardous waste solid waste, including non-hazardous liquid waste. **In this**

manual, solid waste means solid material and liquid waste means liquid material.

Liquid Waste

Liquid waste includes wash water from cleanup, the neutralizing solution used for paint strippers, and waste from water blasting. Store liquid waste in non-corrosive containers.

Contact the local sewage treatment center and the state Department of the Environment for directions on how to dispose of liquid waste properly. Never pour it down toilets, drains, or storm sewers.

Liquid waste from a lead abatement is often hazardous waste. If you are generating lots of liquid waste, store the waste in 55-gallon steel or plastic drums until it is tested.

Testing Lead-based Paint Debris

In most states all waste from lead abatement jobs must be tested to see if it is hazardous waste. Hazardous waste is liquid or solid waste that could poison people if it is not disposed of correctly.

Your employer will test different types of debris to see if they are hazardous. This is done with a special test called a **Toxicity Characteristic Leachate Procedure** test. This test is often called a **TCLP** test. The TCLP test looks at how the debris material will break down. *It checks to see if the debris material will leak or release a hazard.*

Lead-Based Paint debris (such as architectural building components – doors window frames, painted wood work) that does not exhibit the TC for lead need not be managed as hazardous waste. RCRA (Federal) defines LBP waste (e.g., debris, paint chips, dust, sludge from chemical strippers, and water from water blasting) generated from abatement and deleading activities to be hazardous waste if it contains more than **5 mg/L** in the lead leachate except when it is *household waste*. Household debris/wastes are *excluded* from hazardous waste management requirements. Debris/waste generated as part of LBP activities conducted at *residences* (which include single family homes, apartment buildings, public housing, and military barracks) is also household waste.

Non-hazardous Waste Disposal

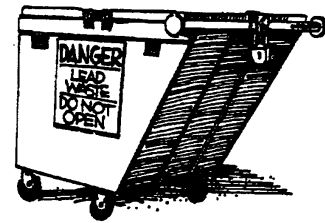
1. Bag or wrap solid waste in 6-mil poly.

Seal with duct tape. Do this as part of cleanup every day and at the end of the job. Do not use a bag labeled asbestos when you are bagging lead. Label the bag **LEAD CONTAMINATED**.

2. Store waste in a secure space.

Store waste in an area closed off to people other than workers. Protect waste from children, animals, the weather, and anything else that can disturb it.

Sometimes you can use a locked dumpster. Put signs that say **DANGER! CONTAINS LEAD WASTE** on the storage space.



3. Take waste to a landfill in a covered vehicle.

Transport solid waste to a municipal or lined landfill. Always transport waste from a lead abatement job in a covered truck. This keeps lead dust from getting into the environment.

WARNING: Do not take waste from a lead abatement job to an incinerator. Burning lead waste creates lead fumes that get into the air. Lead fumes are very easy to inhale and are very dangerous to your health.

Hazardous Waste Disposal

The best way to cut hazardous waste is to avoid making it in the first place. Your employer can save a lot on disposal costs by not using chemical strippers. If you do use strippers, your employer must plan how to contain, transport, and dispose of the hazardous waste before the project begins. Hazardous waste is much more expensive to dispose of than non-hazardous waste.

There are several laws for hazardous waste disposal. The law which applies depends on how much hazardous waste a contractor creates. If you **generate less than 220 pounds of hazardous**

waste per month, you have to follow state laws. Some states require you to take even small amounts of hazardous waste to a licensed hazardous waste facility. Your employer must find out what your state requires.

If you generate **more than 220 pounds of hazardous waste per month**, you have to follow Federal laws. The Federal law that covers hazardous waste is the **Resource Conservation and Recovery Act (1976)**. It is called **RCRA** for short. (Some states have their own laws about hazardous waste. They must be as strict or more strict than RCRA.)

RCRA says that if your employer (or contractor) makes over 220 pounds of waste per month, she will have to get an EPA hazardous waste generator identification number. Your employer must also have you do the following –



1. Store all hazardous waste in special containers.

Store hazardous waste in 55 gallon drums, tanks, or other containers that match the type of waste. The DOT (Department of Transportation) or state waste management agency will give you the information you need to choose the right container. All

containers must be marked **HAZARDOUS WASTE** in bright red and yellow colors. All containers must have a label that lists their contents.

2. Store hazardous waste in a secure area.

Store waste in an area closed off to people other than workers. Protect waste from anything else that can disturb it. Regularly inspect containers for leaks or corrosion. **Hazardous waste can be stored at the company's facility for up to 90 days.**

3. The contractor must use a licensed transporter.

The person or company that transports hazardous waste must

be approved by the EPA. Be careful when you move hazardous waste containers. Use hand trucks, dollies, pull carts, and ramps whenever you can. This will prevent containers from breaking and protect everyone from exposure to hazardous waste.

4. The contractor must have the hazardous waste taken to a licensed disposal site.

The transporter must take the hazardous waste to a disposal facility that is licensed to accept this type of hazardous waste. The site must be approved by EPA. **All hazardous waste must be disposed of within 72 hours of final cleanup.**

5. The contractor must use a Hazardous Waste Manifest.

An EPA form called a **Hazardous Waste Manifest** must be with every shipment. Your contractor, the transporter, and the receiver at the disposal site must all sign the manifest.

Other Requirements

Some contractors have to follow even more requirements for hazardous waste. They include contractors who:

- ▶ Generate more than 220 pounds of hazardous waste per month.
- ▶ Abate more than one housing unit at a time.
- ▶ Abate commercial, public, and industrial buildings.

Which Wastes are Hazardous Waste?

All waste from a lead job must be tested. Experience shows that certain wastes are usually hazardous waste, and others are usually not. The table on the next page shows results from two EPA studies.

Lead Abatement Waste

Usually Hazardous Waste	Not Usually Hazardous Waste
<ul style="list-style-type: none"> ● Paint chips ● Paint dust (from HEPA vacuums and air filters) ● Rags, sponges, mops, HEPA filters, other cleaning materials ● Air monitoring cartridges ● Scrapers ● Unfiltered wash water ● Solid waste with lead level higher than 4 mg/cm² ● Poly and tape from jobs where heat guns were used 	<ul style="list-style-type: none"> ● Filtered wash water ● Disposable work clothes and respirator filters (HEPA vacuumed before disposal) ● Solid waste, such as window frames, with lead level less than 4 mg/cm² (measured at lab) ● Poly and tape from encapsulation and enclosure jobs (HEPA vacuumed before disposal)

HAZARDOUS WASTE

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL.
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY.

GENERATOR INFORMATION:

NAME _____ PHONE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

EPA ID NO. / MANIFEST DOCUMENT NO. _____ / _____

ACCUMULATION START DATE _____ EPA WASTE NO. _____

HAZARDOUS WASTE, SOLID, N.O.S.

NA3077

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

STYLE H98M12

WORKPLACE ACCUMULATION CONTAINER

Proper D.O.T. Shipping Name: _____

UN or NA# _____

Generator Information:

Name: _____

Facility: _____

Address: _____

Phone: _____

City: _____

State: _____ Zip: _____

EPA ID No. / Manifest Document No. _____

EPA Waste No. _____

HAZARDOUS WASTE

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL.

IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY.

HANDLE WITH CARE!

Workplace Accumulation Start Date:

Waste Accumulation Area:

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Activity #14: Cleanup Exercise

Below are 16 clean-up steps that must be done at the end of a lead job. The steps are out of order. Please rearrange the steps so that they are in the right order. (**Note:** there is more than one right answer, but some steps must come before others. For example, "Remove the top layer of poly" must come before "Take off the second layer of poly.")

- ___ Collect waste in sealed plastic lead waste bags (or wrap in poly).
- 16 Decontaminate yourself and take off lead protective gear.
- ___ HEPA vacuum again.
- ___ HEPA vacuum all surfaces, including the poly.
- ___ HEPA vacuum all surfaces again.
- ___ HEPA vacuum one last time.
- ___ Inspector does a visual check for dust.
- ___ Inspector takes dust samples for final inspection.
- 1 Put on your suit, respirator, gloves, boots, and goggles.
- ___ Remove the top layer of poly.
- ___ Repaint or put on sealer.
- ___ Seal up used rags, mop heads, and other cleaning stuff in sealed plastic lead waste bags.
- ___ Take off the second layer of poly and clean the floors.
- ___ Wash all surfaces with lead cleaner.
- ___ Wet mop again.
- ___ Wet mop everything and bag up the dust from mopping.

Activity #15: What Went Wrong?

A family in Silver Spring, Maryland has decided to renovate their Victorian-style home.

They were expecting their third child and wanted to prepare an extra room for the baby. They already had two children: a three-year old daughter and five-year old son.

The family hired a company to remove all the lead paint from the house before refurnishing the baby's room. For safety, the family moved out while the paint was being removed. Three months later their cat started walking strangely. They took it to a veterinarian and learned that the cat was suffering from lead poisoning. The vet suggested that the whole family be examined.

The 3-year old and five-year old had very high lead levels. The baby, who was a few weeks old, had slightly elevated lead levels.

All the lead paint had been removed from the house and all visible dust has been vacuumed up.

How could this have happened?

Key Facts for Chapter 10

Daily Cleanup

1. Wrap large debris in poly.
2. Wet mop or wet sweep small debris and bag it.
3. Check the poly and repair any tears or rips.
4. HEPA vacuum all surfaces.

Wait 24 hours after finishing abatement before you begin final clean up. (Check your state and local laws)

Final Cleanup - Stage 1

Every step of final cleanup is important:

1. Wear protective clothing, including a respirator and goggles.
2. Wet mop the entire area and bag all dust.
3. Take up the first layer of poly.
4. HEPA vacuum all surfaces.
5. Wash all surfaces with a lead cleaner and then rinse.
Follow state and local laws about disposal of lead cleaner.
6. HEPA vacuum all surfaces again.
7. Dispose of all cleaning items in sealed 6-mil plastic bags.

Some states require a visual inspection of the abatement job after the first stage of final cleanup.

Final Cleanup - Stage 2

Paint and seal all the abated surfaces.

Final Cleanup - Stage 3

HEPA vacuum all surfaces, Wash all surfaces with a lead cleaner and rinse well. HEPA vacuum all surfaces again.

Final Inspection

Every lead abatement job must pass a final inspection. Dust

wipe tests measure the amount of lead in the house. If lead dust levels are too high, you must redo cleanup.

🔑 **Waste from a Lead Abatement Job**

1. Store waste in a locked place until it can be disposed of.
2. Waste should not be removed from the contained area on the job site until your employer knows if it is hazardous or not.
3. Waste should be tested to determine if it is hazardous.
4. Hazardous waste can be stored up to 90 days at the company's facility. All other waste must be removed from the site within 72 hours after final cleanup.

🔑 **Handling Non-hazardous Waste**

- ▶ Wrap or bag solid waste in 6-mil poly.
- ▶ Label waste **Lead-Contaminated**.
- ▶ Transport solid waste to a lined dump in a covered truck.
- ▶ Never bum lead waste.
- ▶ Do not pour liquid waste down a drain.

🔑 **Handling Hazardous Waste**

- ▶ Store hazardous waste in special, labeled containers.
- ▶ Use a licensed transporter to take the hazardous waste away.
- ▶ Hazardous waste must go to a licensed disposal site.
- ▶ A Manifest must go with every shipment of hazardous waste.



For More Information

These publications have more information on the topics covered in this chapter.

EPA. *Applicability of RCRA Disposal Requirements to Lead-Based Paint Abatement Wastes*. (March 1993).

EPA. *Comprehensive Review of Lead in the Environment Under TSCA: Advance Notice of Proposed Rulemaking*. (May 1991).

“Lead: Identification of Dangerous Levels of Lead; Final Rule.”
Federal Register. 40 CFR Part 745. EPA. (January 5, 2001).

RCRA Hotline for information on waste disposal: 1-800-424-9346.



