

**SAMPLING TECHNICIAN
REFRESHER TRAINING**

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EPA/AHERA Asbestos Inspector
HUD HQS Inspector



2020

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COURSE OVERVIEW

1. Health effects, blood lead data and housing data.
2. Iowa definitions.
3. Regulations.
4. Identifying lead-based paint hazards.
5. Lead hazard control- Including LSR Information
6. Clearance testing.



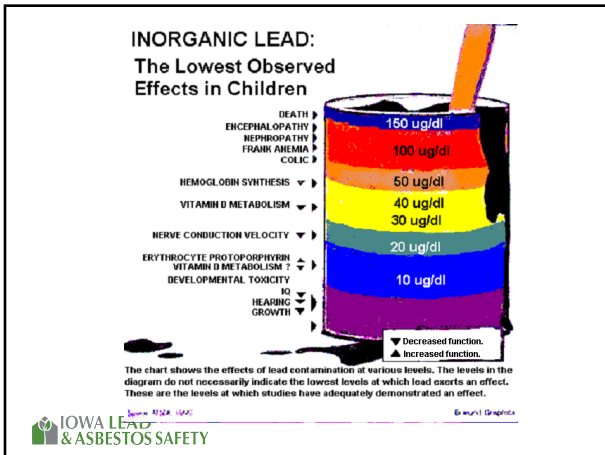
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**Lead poisoning is one of the
most common and preventable
pediatric health problems today.**

Centers for Disease Control and Prevention



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**Most lead-poisoned children have
no symptoms.**

IOWA LEAD & ASBESTOS SAFETY

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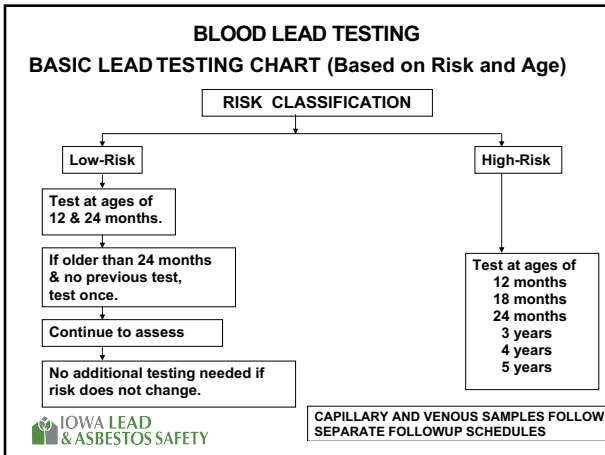
HEALTH EFFECTS OF LEAD IN ADULTS

SUMMARY OF LOWEST-OBSERVED-EFFECT LEVELS FOR

Lowest-observed-effect level (PbB) micrograms/deciliter	Heme synthesis and hematological effects	Neurological effects	Effects on the kidney	Reproductive function effects	Cardiovascular effects
100-120		Encephalopathy	Chronic nephropathy		
80	Frank anemia		" "		
50			" "	Female reproductive effects	
50	Reduced hemoglobin production	Subtle subencephalopathic symptoms	" "	Altered testicular function	
40	Increased urinary ALA and elevated protoporphyrin	Peripheral nerve dysfunction	" "	" "	
30		" "			Elevated blood pressure
25-30	Erythrocyte protoporphyrin elevation in males				" "
15-20	Erythrocyte protoporphyrin elevation in females				" "
<10	ALA-D inhibition				" "

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BLOOD LEAD TESTING


- Screening samples can be capillary (fingerstick) samples. Must be careful to avoid contaminating sample with lead from the child's hand.
- Capillary blood lead levels $\geq 15 \mu\text{g/dL}$ must be confirmed with a venous test (blood from the child's arm).
- Decision to investigate environment or to treat child is made on the basis of venous blood lead levels.



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WHEN IS BLOOD LEAD TESTING INDICATED FOR ADULTS?

1. When an adult works with lead on the job.
2. When an adult works with lead in a hobby.
3. When an adult has conducted removal of lead-based paint without following the appropriate precautions.



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**CDC THRESHOLD FOR LEAD POISONING
IN CHILDREN**

New level of concern from CDC

January 2012 the advisory committee on
childhood lead poisoning recommended
lowering the level of concern from 10 µg/dL to
5 µg/dL.

May 2012 the CDC adopted this



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**BLOOD LEAD LEVELS OF CONCERN
FOR ADULTS**

Adult males and adult females should keep their
blood lead levels less than 10 µg/dL.



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HOW ARE CHILDREN EXPOSED TO LEAD?

- Children can pick up lead dust off their parent's clothes if their parents work with lead on the job or have been removing lead-based paint around their home.
- Children may inhale lead dust if they are in the immediate area when lead-based paint is being removed. Aside from this, inhalation is not the usual route of exposure for children.
- Children absorb up to 50% of the lead that they ingest.



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HOW ARE ADULTS EXPOSED TO LEAD?

- Adults can inhale lead dust and fumes when they work with lead in a job or hobby or, if they are disturbing lead-based paint in an older home.
- Lead in the dust and fumes ends up on adults' hands, faces, and clothes. If adults working with lead eat, drink, or smoke before washing their hands and face, they will ingest lead dust.
- Adults absorb about 10% of the lead that they inhale and ingest.



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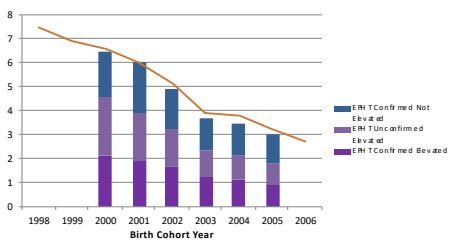
CHILDHOOD BLOOD LEAD LEVEL SURVEILLANCE IN IOWA

The results of all blood lead testing done on adults and children must be reported to the Iowa Department of Public health.

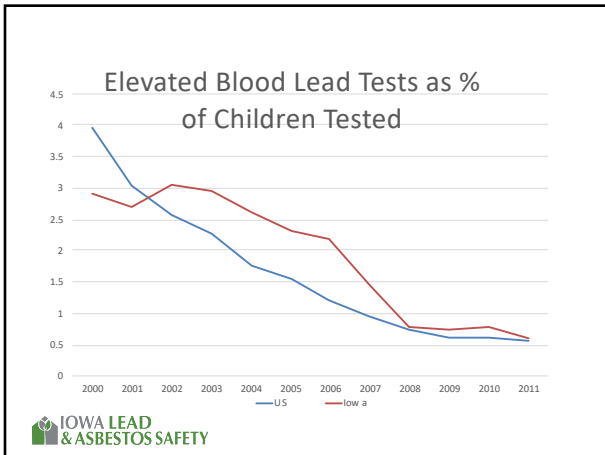


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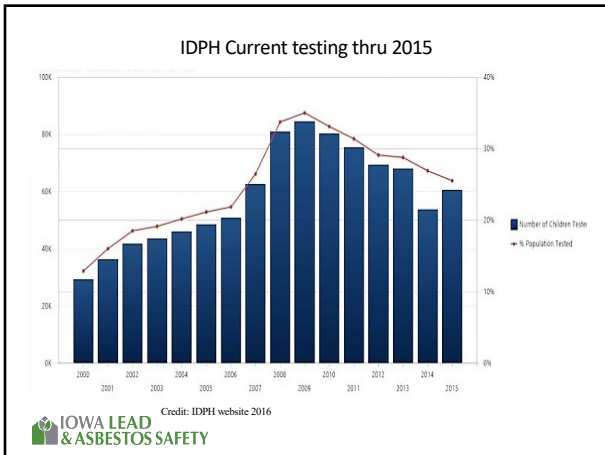
Percent of Children (<6 Years of age) tested that ever had a Blood Lead Level result ≥ 10 $\mu\text{g}/\text{dL}$ by Surveillance Method and by Birth Cohort



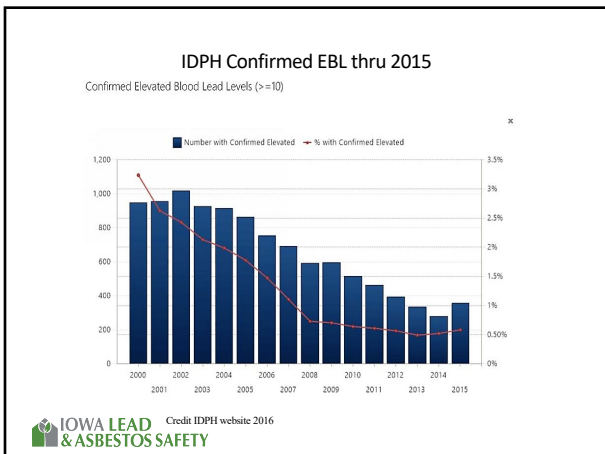
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IDPH Lead Data

- Accessed through the new Public Health Tracking Portals.
- Data updated annually
- Public and Secure Access available
- Training video and manual on-line under "Training"

<https://pht.idph.state.ia.us/Pages/default.aspx>



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HOUSING DATA 2008-12 (ACS)

Age of Housing	Iowa Average	National Average	Rank
Pre 1940	27.3%	14.2%	4 rd
Pre 1950	33.7%	19.2%	5 th
Pre 1960	44.8%	29.5%	6 th



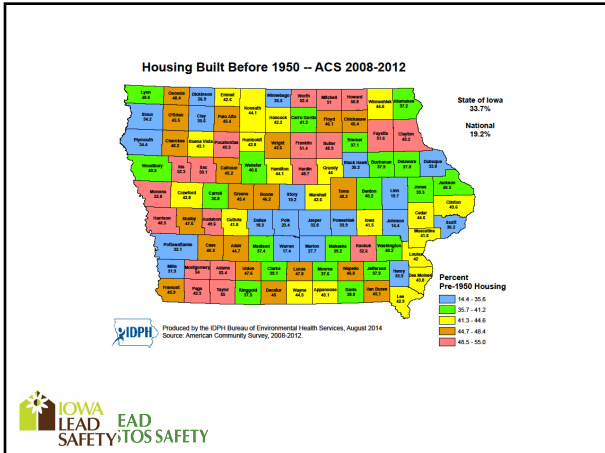
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HOUSING DATA 2010 CENSUS

Age of Housing	Iowa Average	National Average	
Total Houses	1,337,410	131,642,457	
Pre 1940	27.3% 365,428	13.6% 18,010,025	
Pre 1950	33.7% 450,738	19.2% 25,366,582	
Pre 1960	44.8% 598,674	33.3% 39,916,725	



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- IOWA DEFINITIONS**
1. Lead-based paint.
 2. Lead-based paint hazard.
 3. Clearance inspection.
 4. Visual risk assessment.
 5. Abatement.
 6. Interim controls.
 7. Paint stabilization
 8. Bypassing hazard identification.
- IOWA LEAD & ASBESTOS SAFETY

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DEFINITION OF LEAD-BASED PAINT

“Lead-based paint” means paint or other surface coatings that contain lead equal to or in excess of 1.0 milligrams per square centimeter

or

more than 0.5 percent by weight.

1978: CPSC set an allowable level of lead to 0.06%
August 14th 2009 CPCS reduced this level to 0.009%

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DIFFERENT WAYS TO EXPRESS “0.5% LEAD BY WEIGHT”

- 5000 parts per million (PPM) lead
- 5000 milligrams per kilogram (mg/kg) lead
- 0.5% lead by weight



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DEFINITION OF LEAD-BASED PAINT HAZARD

“Lead-based paint hazard” means:

1. Hazardous lead-based paint,
 - a. All Deteriorated paint
 - b. Chewable surfaces
2. Soil-lead hazard,
3. Dust-lead hazard.



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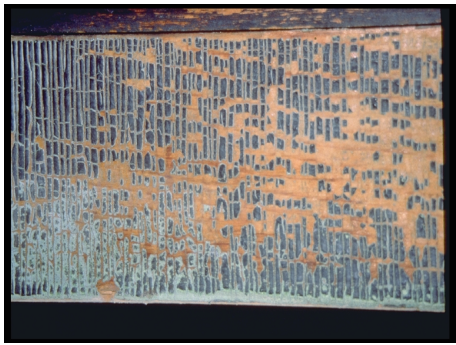


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CLEARANCE TESTING

“Clearance testing” means an activity conducted following interim controls, lead abatement, paint stabilization, standard treatments, ongoing lead-based paint maintenance, or rehabilitation to determine that the hazard reduction activities are complete.

Clearance testing includes a visual assessment, the collection and analysis of environmental samples, the interpretation of sampling results, and the preparation of a report.

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VISUAL RISK ASSESSMENT

“Visual risk assessment” means a visual assessment to determine the presence of deteriorated paint or other potential sources of lead-based paint hazards in a residential dwelling or child-occupied facility, and the provision of a written report explaining the results of the assessment to the property owner and to the person requesting the visual risk assessment.



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DEFINITION OF LEAD ABATEMENT

“Lead abatement” means any measure or set of measures designed to permanently eliminate lead-based paint hazards in a residential dwelling or child-occupied facility.



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Abatement includes, but is not limited to:

- The removal of lead-based paint and lead-contaminated dust,
- The permanent enclosure or encapsulation of lead-based paint,
- The replacement of lead-painted components or fixtures,
- The removal or covering of lead-contaminated soil.

AND, Lead Abatement includes:

- All preparation, cleanup, disposal, and post abatement clearance testing activities associated with such measures.



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Lead abatement specifically includes, but is not limited to:

- Projects for which there is a written contract or other documentation that activities shall result in or are designed to permanently eliminate lead-based paint hazards.
- Projects resulting in the permanent elimination of lead-based paint hazards that are conducted by firms or individuals who advertise to conduct lead-based paint abatement.
- Projects resulting in the permanent elimination of lead-based paint that are conducted in response to an abatement order.



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Abatement does not include:

- Renovation, remodeling, landscaping, or other activities, when such activities are not designed to permanently eliminate lead-based paint hazards, but, instead, are designed to repair, restore, or remodel a given structure or dwelling, even though these activities may incidentally result in a reduction or elimination of lead-based paint hazards.
- Interim controls, operations and maintenance activities, or other measures and activities designed to temporarily, but not permanently reduce lead-based paint hazards.



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DEFINITION OF INTERIM CONTROLS

A set of measures designed to temporarily reduce human exposure or likely exposure to lead-based paint hazards, including:

- Specialized cleaning.
- Repairs, maintenance, and painting.
- Temporary containment.
- On-going monitoring of lead-based paint hazards or potential hazards.
- Establishment and operation of management and resident education programs.



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WHAT'S THE DIFFERENCE BETWEEN ABATEMENT AND INTERIM CONTROLS?

Permanent controls vs. temporary control.



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DEFINITION OF RENOVATION

Renovation- means the modification of any existing structure, or portion thereof, that results in the disturbance of painted surfaces, unless that activity is performed as part of lead abatement as defined by this chapter. The term “renovation” includes, but is not limited to, the removal, modification, or repair of painted surfaces or painted components such as modification of painted doors, surface restoration, and window repair; surface preparation activity such as sanding, scraping, or other such activities that may generate paint dust; the partial or complete removal of building components such as walls, ceilings, and windows; weatherization projects such as cutting holes in painted surfaces to install blown-in insulation or to gain access to attics and planing thresholds to install weather-stripping; and interim controls that disturb painted surfaces. “Renovation” does not include minor repair and maintenance activities



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DEFINITION OF PAINT STABILIZATION

“Paint stabilization” means repairing any physical defect in the substrate of a painted surface that is causing paint deterioration, removing loose paint and other material from the surface to be treated, and applying a new protective coating or paint.



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BYPASSING HAZARD IDENTIFICATION

- **Bypass inspection and/or risk assessment and instead use funds to control suspected/assumed hazards (similar to assuming lead-based paint and applying standard treatments under new HUD regulations).**
- **Inspectors/ Risk assessors may be asked to verify that no hazards remain after work has been completed and clearance passed.**



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WHAT'S THE DIFFERENCE BETWEEN ABATEMENT AND REMODELING/RENOVATION?

Permanent controls vs. temporary control.



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REGULATORY INFORMATION

Title X

The residential lead-based paint hazard reduction act of 1992



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REAL ESTATE DISCLOSURE

The major provisions of the real estate disclosure rule are:

- 1. **Effective on December 6, 1996, for all sales and rentals of “target housing”.**
- 2. **“Target housing” is any housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any one or more children age under the age of six years resides or is expected to reside in such housing for the elderly or persons with disabilities) or any 0-bedroom dwelling.**



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REAL ESTATE DISCLOSURE

- 3. **In sales of target housing, the seller must:**
 - A. **Fill out a standard form indicating whether they have specific knowledge of lead-based paint or lead-based paint hazards in the dwelling and provide this form to the buyer.**
 - B. **Provide copies of any inspection reports to the buyer.**
 - C. **Provide a copy of the EPA or state approved pamphlet**
 - D. **Allow the buyer 10 days to get a lead inspection if the buyer wants an inspection.**



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REAL ESTATE DISCLOSURE

- 4. **In the rental of target housing, the landlord must:**
 - A. **Fill out a standard form indicating whether they have specific knowledge of lead-based paint or lead-based paint hazards in the dwelling and provide this form to the renter.**
 - B. **Provide copies of any inspection reports to the renter.**
 - C. **Provide a copy of the EPA or state approved pamphlet to the renter.**



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REAL ESTATE DISCLOSURE

- Landlords can opt out of the disclosure if their dwelling has been inspected by a state-certified inspector and determined to be completely free of lead-based paint.
- **NOTE:** If the dwelling contains lead-based paint that has been encapsulated or enclosed, it does not meet the definition of “free of lead-based paint.”



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REAL ESTATE DISCLOSURE

- Nothing in the real estate disclosure rule requires any property owner to inspect a dwelling for lead-based paint or to take any action to repair lead hazards.
- An inspector or contractor who tells property owners that inspections or abatement are required by Title X as a means of securing business is in violation of Iowa’s Consumer Fraud Act.



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**PRE-RENOVATION NOTIFICATION-
NOTIFICATION PRIOR TO
RENOVATION, REMODELING, AND REPAINTING**

- Does not include lead abatement performed by a certified lead abatement contractor.
- Modifying any existing structure or portion of a structure where painted surfaces are disturbed.
- Includes, but not limited to: removing walls, ceilings, and other painted components; window replacement; floor refinishing; and sanding, scraping, stripping, or otherwise removing paint.



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PRE RENOVATION REQUIREMENTS

Iowa Administrative Code
641 Chapter 69

- Effective June 1, 1999.
- Applies to target housing and child-occupied facilities
- In Iowa if a contractor will disturb more than 1sqft of a painted surface in a pre 1978 residential property or child-occupied facility- A booklet must be provided prior to work beginning and get a signed acknowledgement from the property owner.



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TARGET HOUSING

Housing constructed before 1978, with the exception of housing for the elderly or disabled and housing without a bedroom, unless a child aged 6 years or less, resides or expected to reside there.



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PRE RENOVATION REQUIREMENTS

- Applies to work done in a single-family dwelling or inside a dwelling unit of multi-family housing.
- Includes work done in Child-occupied facilities
- No more than 60 days before starting work, provide pamphlet and notification to owner and known adult occupant.



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PRE RENOVATION REQUIREMENTS

- **Must obtain written acknowledgement from owner and known adult occupant.**
- **If written acknowledgement cannot be obtained, must certify in writing that pamphlet has been delivered and why acknowledgement could not be obtained.**
- **In lieu of delivering pamphlet and obtaining acknowledgement, may obtain certificate of mailing at least 7 days before starting work.**



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PRE RENOVATION REQUIREMENTS

- **If general nature, location, starting and ending dates, etc., change after initial notification, must provide revised notification.**
- **If certified inspector has made written determination that affected components are free of lead-based paint, then the project is exempt.**



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EMERGENCY RENOVATION, REMODELING, AND REPAINTING

- **Activities necessitated by non-routine failures of equipment.**
- **Must result from a sudden, unexpected event.**
- **Would present a safety or public health hazard or threaten equipment or property with significant damage if not immediately attended to.**



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**EMERGENCY RENOVATION,
REMODELING, AND REPAINTING**

- Provide the pamphlet to the owner of the property as soon as reasonably possible.
- Notify each owner and occupant in writing of the work and make the pamphlet available upon request.



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**PRE RENOVATION NOTIFICATION
COMMON AREAS OF
MULTI-FAMILY HOUSING**

- Provide pamphlet to the owner.
- Obtain signed, dated acknowledgement from the owner.
- Notify each occupant in writing and make pamphlet available upon request.



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**PRE RENOVATION NOTIFICATION
COMMON AREAS OF
MULTI-FAMILY HOUSING**

- Contractor must prepare, sign, and date statement describing steps taken to notify all occupants. Notification can be done by the owner on behalf of the contractor, but contractor is ultimately responsible.
- If nature or scope of work or dates for work change, must conduct additional notification.



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PRE RENOVATION NOTIFICATION RECORDKEEPING

- **Must keep records for three years.**
- **Must include:**
 - Address or location for work.
 - Copies of signed, dated acknowledgements from owners and, for work done in dwelling units, occupants.
 - Copies of signed, dated statements of notification for multi-family housing.
 - Certifications of attempted delivery or mailing.
 - Report from certified inspector for components free of lead-based paint.



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PRE RENOVATION NOTIFICATION DIFFERENCES BETWEEN STATE OF IOWA AND FEDERAL REGULATIONS

1. **Not EPA's intention, but federal regulation does not require notification of work in common areas for less than 4 dwelling units.**
2. **Federal regulations do not require notification if less than 2 square feet of paint disturbed per component. Iowa regulations do not require notification if less than 1 square foot is disturbed (not per component).**



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CERTIFICATION OF LEAD PROFESSIONALS

- **Lead professionals had to be certified by March 1, 2000.**
- **EPA will certify individuals only in states where there is NOT an EPA-authorized program.**
- **EPA will NOT certify individuals in Iowa.**
- **You must be certified as a sampling technician to do visual assessments for rehab or other reasons or to do clearance testing after rehab, interim controls, or standard treatments.**



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**WHAT DO THE NEW HUD RULES REQUIRE?
HOUSING REHABILITATION**

Property up to \$25,000: Lead hazards must be controlled (NOT abated). The people doing the work must have completed the 8-hour lead-safe work practices training.

Property receives >\$25,000: Lead hazards must be ABATED. Work must be done by certified lead abatement contractors and lead abatement workers.

On all projects, clearance testing must be passed when the work is done. Either performed by a sampling tech or lead inspector



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**WHAT DO THE NEW HUD RULES REQUIRE?
TENANT-BASED RENTAL ASSISTANCE**

In pre-1978 dwellings where a child under the age of 6 years or a pregnant woman lives, all deteriorated paint must be repaired by someone who has completed the 8-hour lead-safe work practices course. Clearance testing must be passed when the work is done.



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**WHAT KIND OF WORK CAN PEOPLE WHO ARE CERTIFIED
AS LEAD SAFE RENOVATORS DO?**

Any project that calls for lead safe work practices:

Interim Controls

Maintenance

Remodeling/Renovation

Paint Repair


Paint Stabilization

They can NOT do an "abatement" project.



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Primary Intent	Primary Intent is to Address Lead Hazards		Primary Intent is to Improve Property
	Abatement (Permanent)	Interim Controls (Temporary)	
A customer asks you to scrape and repaint the outside of a house built in 1920.			X
A customer has peeling and chipping paint on the outside of a house built in 1920. They ask you to put siding on the house because they are tired of repainting it.			X



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Primary Intent	Primary Intent is to Address Lead Hazards		Primary Intent is to Improve Property
	Abatement (Permanent)	Interim Controls (Temporary)	
Your local housing authority finds peeling and chipping paint in the Section 8 property that you own. The house was built in 1920. They tell you to repair the peeling and chipping paint. You do this using safe work practices.			X
Same as above, but you decide to replace the windows instead of wet scraping and repainting because they are very drafty and have had a lot of moisture damage.			X


Note: In Iowa, we would not define thing such as replacing a single window sill, replacing a single piece of woodwork, capping a window trough with aluminum coil as "abatement." This may not be the case in all states.



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Primary Intent	Primary Intent is to Address Lead Hazards		Primary Intent is to Improve Property
	Abatement (Permanent)	Interim Controls (Temporary)	
A homeowner is receiving community development block grant funds to rehab their home. The project will involve replacing painted windows and doors that are in poor condition and installing replacement siding over original siding that will not hold paint. The house was built in 1920. The "hard costs of rehab" are less than \$25,000.			X (Intent is determined by what the contract says.)
A homeowner is receiving community development block grant funds to rehab a very large three-story home. The project will involve replacing painted windows and doors that are in poor condition and installing replacement siding over original siding that will not hold paint. The house was built in 1920. The "hard costs" of rehab are greater than \$25,000.	X If the hard costs of rehab are more than \$25,000, the work must be done a certified lead abatement contractor.		

In these cases, the intent is defined by the federal law governing the CDBG program.



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Primary Intent	Primary Intent is to Address Lead Hazards		Primary Intent is to Improve Property
	Abatement (Permanent)	Interim Controls (Temporary)	
A homeowner (in Omaha, Dubuque, or Cedar Rapids) is receiving funds from the local housing agency for a lead abatement project.	X		
A homeowner has had their house inspected for lead-based paint. They are terrified at the thought of having any lead in their home. The woodwork and windows are in good condition – the only concern is the lead-based paint. They want you to replace the windows and strip all of the woodwork.	X		



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**SOIL AND DUST
SAMPLING PROCEDURES**



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- COLLECTION OF SOIL SAMPLES FOR
LABORATORY ANALYSIS
TO DETERMINE LEAD CONTENT**
1. IDPH Soil Sampling Protocol
 2. Materials and supplies.
 3. Collection technique.
 4. Bare soil sampling procedures.



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**COLLECTION OF SOIL SAMPLES FOR
LABORATORY ANALYSIS
TO DETERMINE LEAD CONTENT**

Materials and Supplies

1. Core sampling device.
2. Disposable wipes.
3. 5" x 8" zip lock baggies (or collection bags provided by lab).
4. Disposable gloves.
5. Floor plan and property sketch.
6. Soil sample collection form.
7. Trash bag.



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COLLECTION OF SOIL SAMPLES

Bare Soil Sampling Procedures

1. Not recommended (is possible- Labs require more time) when the ground is frozen.
2. Mark locations of soil samples on exterior site plan sketch.
3. Collect composite samples from perimeter of house and child's play area where bare soil is present.
4. Collect the top 1.5 cm or 5/8 inch of soil from each spot. Include paint chips IF they are on the spot you are sampling. Avoid grass, twigs, stones, and other debris.
5. Label bags and fill out laboratory forms.
6. Clean the core sampler with a disposable wipe after each composite sample is collected.



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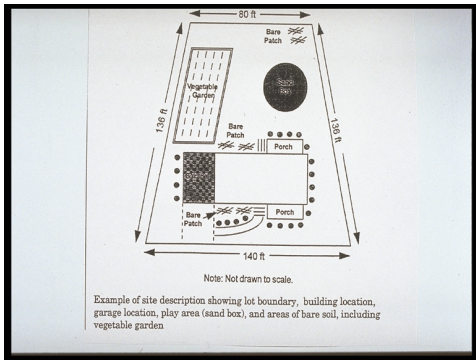
COLLECTION OF SOIL SAMPLES

Sampling Soil from Perimeter (Dripline) of House

1. Take 5 to 10 sub-samples from around the building perimeter.
2. Collect from all sides of the house where bare soil is present.
3. Subsamples should be at least 2 feet apart.
4. Subsamples should be 2 feet away from the foundation (dripline area), unless the bare soil is closer than 2 feet to the foundation.

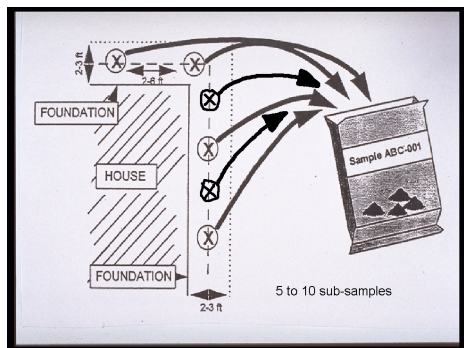


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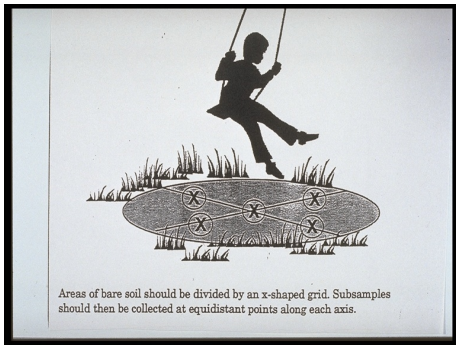
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**COLLECTION OF SOIL SAMPLES FOR
Sampling Soil from Play Areas**

1. **Collect 5 to 10 subsamples along an "X"-shaped grid from bare soil in the child's principal play area.**
2. **Sub samples should be at least one foot apart.**

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Areas of bare soil should be divided by an x-shaped grid. Subsamples should then be collected at equidistant points along each axis.

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INTERPRETATION OF SOIL LEAD LEVELS
Acceptable Levels of Lead in Bare Soil

1. Residential areas -- 400 ppm.
2. Non-residential -- 1,200 ppm.
3. At levels up to 5,000 use interim controls to reduce exposure:
 - A. Move children's play areas away from bare soil.
 - B. Establish vegetation such as grass or groundcover.
 - C. Plant flowers or shrubs.
 - D. Cover bare soil with mulch.
4. At levels greater than 5,000 ppm, Abatement recommended: removal or permanently covering soil.

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COLLECTION OF DUST SAMPLES FOR LABORATORY ANALYSIS TO DETERMINE LEAD CONTENT

1. Using IDPH standard practices for field collection of settled dust samples.
2. Materials and supplies needed.
3. Single surface wipe sampling procedure.
4. Composite wipe sampling.
5. Blank preparation.
6. Personal protection.

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**COLLECTION OF DUST SAMPLES FOR
LABORATORY ANALYSIS TO DETERMINE LEAD CONTENT
Materials and Supplies Needed**

1. Disposable wipes.
2. Disposable gloves.
3. Collection forms.



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**COLLECTION OF DUST SAMPLES FOR
LABORATORY ANALYSIS TO DETERMINE LEAD CONTENT**

Minimum & maximum sample sizes

FLOORS:

- The recommended area for a floor dust sample is 1.0 sq ft.
- The minimum area for a floor dust sample is 0.5 sq ft.
- The maximum area for a floor dust sample is 2.0 sq ft.

SILLS & TROUGHS:

- The recommended area for a sill or trough sample is as much as possible (make a rectangle and do not include odd ends).
- The minimum area for a trough or sill sample is 0.25 sq ft.
- The Maximum area for a trough or sill sample is 2.0 sq ft.



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**COLLECTION OF DUST SAMPLES FOR
LABORATORY ANALYSIS TO DETERMINE LEAD
CONTENT**

Single Surface Wipe Sampling Procedure

1. Outline wipe area with masking tape or use a template.
 - A. Floors:
Do not walk on or touch surface to be wiped.
Apply adhesive tape to form a square or rectangle of about one square foot.
 - B. Confined Areas (window sills / troughs):
Apply two strips of adhesive tape across the sill to define wipe area, generally a rectangle.



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**COLLECTION OF DUST SAMPLES FOR
LABORATORY ANALYSIS TO DETERMINE LEAD
CONTENT**

Single Surface Wipe Sampling Procedure

2. Preliminary inspection of wipes.
 - A. Do NOT use if they have dried out or appear compromised in any way .
3. Partially unscrew cap on tube to make sure it can be opened.
4. Use new gloves for each sample.



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**COLLECTION OF DUST SAMPLES FOR LABORATORY
ANALYSIS TO DETERMINE LEAD CONTENT**

Single Surface Wipe Sampling Procedure

5. First wipe pass (side to side).
 - A. Press firmly on wipe with palm and fingers.
 - B. Wipe side to side as many times as necessary to cover the area.
6. Second wipe pass (top to bottom).**
 - A. Fold wipe in half with contaminated side inside.
 - B. Place wipe in top left corner and cover entire area with top to bottom motions.
7. Third wipe pass (corners).
 - A. Fold wipe in half again with contaminated side in
 - B. Use L-shaped pass on each corner.

**Confined areas (window sills, etc.) May use side-to-side pass again.



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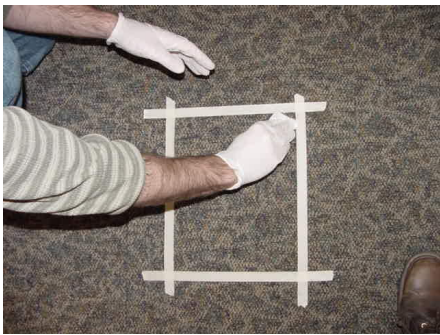
IOWA LEAD & ASBESTOS SAFETY

94



IOWA LEAD & ASBESTOS SAFETY

95



IOWA LEAD & ASBESTOS SAFETY

96

COLLECTION OF DUST SAMPLES FOR LABORATORY ANALYSIS TO DETERMINE LEAD CONTENT

Single Surface Wipe Sampling Procedure

8. Fold wipe again with second contaminated side inside and place into sample container without touching anything else.
9. Seal and label sample collection container.
10. Measure the surface area to the nearest 1/8 inch. Record area measurement on sampling form.
11. Discard masking tape and gloves in trash bag.



97

**TO DETERMINE LEAD CONTENT
Composite Wipe Sampling Procedure**

1. Check with laboratory to ensure that they can analyze composite samples.
2. Set up all areas to be wiped before sampling. Areas in each room should be approximately the same size.
3. Use a separate wipe for each area. Place all wipes into the same collection tube (unless laboratory instructs differently).
4. Can use the same pair of gloves for all subsamples that will go into a composite sample.
5. Separate composite samples must be used for:
 - A. Carpeted and hard surface floors.
 - B. Floors, window sills, and window wells.
 - C. Separate dwellings.



98

COLLECTION OF DUST SAMPLES FOR LABORATORY ANALYSIS TO DETERMINE LEAD CONTENT

Blank Preparation

1. Remove a wipe from container with a NEW glove. Shake out wipe and fold as it would be after sample collection. Place in sample container without touching anything else.
2. Collect one blank for each dwelling unit sampled or for every 20 samples, whichever is less.
3. Collect one blank for every lot used. Record the lot number.



99

INTERPRETATION OF DUST LEAD LEVELS

For single surface samples the acceptable (Passing) or clearance levels of lead in dust are:

- Uncarpeted floors - $<10 \mu\text{g}/\text{ft}^2$
- Carpeted floors - $<10 \mu\text{g}/\text{ft}^2$
- Interior windowsills - $<100 \mu\text{g}/\text{ft}^2$
- Window wells (troughs) - $<400 \mu\text{g}/\text{ft}^2$

For Composite samples, the above standards must be divided by half the number of subsamples in the composite sample before the lab results are interpreted.



100

INTERPRETATION OF DUST LEAD LEVELS

New Standards for Composite samples consisting of 4 sub-samples:

- | | |
|----------------|---------------------------------------------|
| Floors | $<5 \mu\text{g}/\text{ft}^2 (10 \div 2)$ |
| Window sills | $<50 \mu\text{g}/\text{ft}^2 (100 \div 2)$ |
| Window troughs | $<200 \mu\text{g}/\text{ft}^2 (400 \div 2)$ |

New Standards for Composite samples consisting of 3 sub-samples:

- | | |
|----------------|-----------------------------------------------|
| Floors | $<7 \mu\text{g}/\text{ft}^2 (10 \div 1.5)$ |
| Window sills | $<67 \mu\text{g}/\text{ft}^2 (100 \div 1.5)$ |
| Window troughs | $<267 \mu\text{g}/\text{ft}^2 (400 \div 1.5)$ |

Note: The standard would not change for a composite sample consisting of 2 sub-samples, because it's divided by 1.



101

COLLECTION OF SOIL AND DUST SAMPLES FOR LABORATORY ANALYSIS

CHOOSING A LABORATORY

- State and federal rules require inspectors to use a laboratory that has been accredited by the EPA National Lead Laboratory Accreditation Program (NLLAP) and is a successful participant in the ELPAT proficiency testing program.
- If you intend to use an XRF or any method other than sending samples to a laboratory, then your agency or business must be an NLLAP-accredited laboratory and must participate in the ELPAT program.
- XRF's can be used for "un-official field testing"- You cannot write a report certifying a dust or soil sample unless you are an approved lab



102

**COLLECTION OF SOIL, WATER AND DUST
SAMPLES FOR LABORATORY ANALYSIS**

CHOOSING A LABORATORY

Be aware of how your lab reports the results.

- **Quantitation limit (reporting limit or detection limit).**
Sampling technicians or inspector/risk assessors may not report results as “not detectable.”
- **Total lead (micrograms) vs. micrograms per square foot.**



103

**VISUAL ASSESSMENT PROTOCOL PRE-
1960 HOMES WHERE LEAD-BASED PAINT
IS LIKELY TO BE PRESENT**

Walking through a home to look for surfaces that are likely to be painted with lead-based paint and to look for peeling and chipping paint can be a low-cost alternative to a complete inspection.



104

LEAD-BASED PAINT

- Used mostly in homes built before 1960.
- Used on interior wood surfaces:
windows, baseboards, doors, etc.
- Used on some interior walls,
primarily in kitchens and bathrooms.
- Used on exterior wood surfaces:
siding, porches, windows, doors.
- Highest quality paints (“white lead paint”) had the highest amount of lead in them.



105

**PERCENTAGE OF ALL PAINT THAT IS LEAD-BASED,
BY YEAR AND COMPONENT TYPE (HUD, 1996)**

COMPONENT CATEGORY AND YEAR	INTERIOR	EXTERIOR
Walls/Ceiling/Floor		
1960-1979	5	28
1940-1959	15	45
Before 1940	11	80
Metal Components (Includes metal trim, window sills, molding, doors, air/heat vents, soffit and fascia, columns, railings).		
1960-1979	2	4
1940-1959	6	8
Before 1940	3	13
Non-Metal Components (Includes non-metal trim, window sills, molding, doors, air/heat vents, soffit and fascia, columns, and railings).		
1960-1979	4	15
1940-1959	9	39
Before 1940	47	78

Note that these percentages reflect the percent of time that lead-based paint is found on a component. They do NOT reflect the amount of lead in the paint during these different time periods.



106

**VISUAL ASSESSMENT OF PRE-1960 HOMES
WHERE LEAD-BASED PAINT IS
LIKELY TO BE PRESENT**

1. Assume that ALL painted surfaces have lead-based paint on them.
2. Look for lead-based paint hazards such as deteriorated paint, visible dust, and paint chips in soil.
3. Advise family on hazards and maintenance.



107

**VISUAL ASSESSMENT OF PRE-1960 HOMES
WHERE LEAD-BASED PAINT IS
LIKELY TO BE PRESENT**

1. When was the house built?
2. Which interior and exterior surfaces are painted?
3. Which surfaces have deteriorated paint or may be chewable (accessible), friction, or impact surfaces?
4. Look for visible house dust.
5. Evaluate soil for paint chips.



108

**VISUAL ASSESSMENT OF PRE-1960 HOMES
WHERE LEAD-BASED PAINT IS
LIKELY TO BE PRESENT**

Advice to the Family

1. Assume that peeling and chipping paint is lead-based paint.
Use safe practices to complete repairs.
2. Keep house VERY clean!!!
3. Keep intact painted surfaces in good condition.
Repaint BEFORE you start to see peeling and chipping.
4. If remodeling or removing paint, assume it is lead-based paint and take the appropriate precautions.
5. Watch children's play areas in bare soil around the house.



109

**VISUAL ASSESSMENT OF PRE-1960 HOMES
WHERE LEAD-BASED PAINT IS
LIKELY TO BE PRESENT**

Advice to the Family

**This type of basic advice is all that many families want,
need, and can afford.**



110

**VISUAL ASSESSMENT OF PRE-1960 HOMES
WHERE LEAD-BASED PAINT IS
LIKELY TO BE PRESENT**

Document Results

**Inspector should follow up with a report containing
the advice given to the family. The inspector may want to
take some pictures for the record in this case.**



111

BE CAREFUL OF WHAT YOUR REPORTS SAY!!

- You must be careful of what reports from visual risk assessments say.
- Unless you have tested a surface for lead-based paint, the report should NOT say or imply that any surface is NOT lead-based paint. This has been a problem in the past.
- Your assumption that all surfaces are painted with lead-based paint should be VERY clear in your report.



112

INTERIM CONTROLS



113

INTERIM CONTROLS INCLUDE:

- Repairing all rotted or defective substrates.
- Paint film stabilization.
- Treating accessible, friction, and impact surfaces.
- Treating bare soil with excessive levels of lead.
- Dust removal and control.
- Educating residents and workers regarding lead poisoning.
- Reevaluation and maintenance.



114

RECOMMENDED PAINT REMOVAL METHODS

1. Heat guns below 1100 degrees F.
2. HEPA mechanical removal.
3. Chemical removal.
4. Wet sanding or wet scraping.



115

PROHIBITED PAINT REMOVAL METHODS

- Open flame burning or torching.
- Dry scraping or sanding (except for limited areas).
- Machine sanding or grinding without HEPA exhaust tool.
- Uncontained hydro blasting or high-pressure washer
- Abrasive blasting or sandblasting without HEPA exhaust tool.
- Heat guns operating above 1,100° F.



116

**INTERIM CONTROL METHODS
FOR LEAD-CONTAMINATED SOIL
Soil Lead Levels up to 5,000 ppm**

1. Soil surface cover.
2. Land use controls.
3. Drainage and dust control.



117

ALTER SURFACE COVER

- Grass (seed or sod).
- Other live ground cover (shrubs, ground cover, etc.)
- Mulch.
- Artificial turf.



118



119

CONTROLS TO MINIMIZE MIGRATION (tracking) OF SOIL CONTAINING LEAD INTO DWELLINGS

1. Doormats.
2. Take off shoes at the door.



120

MONITORING INTERIM CONTROLS

Interim guidelines are not a one-time, long term repair of lead hazards.

Owner must monitor lead-based paint and quickly repair hazards.



121

LEAD SAFE RENOVATOR BASICS



122

The RRP Rule

Addresses activities that disturb lead-based paint in target housing and child-occupied facilities. It requires:

- Training providers must be approved.
- Renovators must be trained and supervised.
- Renovators and firms must be certified.
- Lead-safe work practices must be used during renovations.

Effective on April 22, 2010.
 EPA may authorize states, territories and tribes to enforce this rule. Iowa is an authorized state. This course emphasizes Iowa regulations for lead-safe renovators.



123

The RRP Rule: Exclusions

- Renovation activities where affected components do not contain lead-based paint.
- Emergency renovations (requires still cleanup and cleaning verification or dust lead clearance).
- Minor repair and maintenance activities. *Note: This exclusion does not apply to window replacement, demolition, or activities involving prohibited practices.*
- Renovations performed by homeowners in homes that they own and where they or immediate relatives live.



124

Minor Repair & Maintenance

Iowa Administrative Code 641, Chapter 70.2(135) Definitions
New Definition of "Minor Repair and Maintenance"
Implementation date of 1-16-2013

"Minor repair and maintenance activities" means activities, including minor heating, ventilation or air-conditioning work, electrical work, and plumbing, that disrupt less than the minimum areas of a painted surface established in this definition where **none of the work practices prohibited or restricted by this chapter are used and where the work does not involve window replacement or demolition of painted surface areas.** When painted components or portions of painted components are removed, the entire surface area removed is the amount of painted surface disturbed. Projects, other than emergency renovation, performed in the same room within the same 30 days must be considered the same project for the purpose of determining whether the project is a minor repair and maintenance activity. Renovations performed in response to an elevated blood lead (EBL) inspection are not considered minor repair and maintenance activities.

(definition continues on next slide)



125

Minor Repair & Maintenance

Iowa Administrative Code 641, Chapter 70.2(135) Definitions

New Definition of "Minor Repair and Maintenance" continued
Implementation date of 1-16-2013

The minimum area for minor repair and maintenance activities is:

1. Less than 1.0 square foot of an interior painted or finished wood surface per renovation;
2. Less than 6.0 square feet of a painted or finished drywall or plaster surface per room; or
3. Less than 20.0 square feet of an exterior painted or finished surface per renovation.

Projects performed pursuant to (HUD) 24 CFR Part 35 shall comply with the de minimis levels in 24 CFR 35.1350 if these de minimis levels are more restrictive than the minimum areas of a painted surface established in this definition.



126

Emergency Renovation

“Emergency renovation” means renovation, remodeling, or repainting activities necessitated by:

Nonroutine failures of equipment or of a structure that were not planned but resulted from a sudden, unexpected event that if not immediately attended to:

Presents a safety or public health hazard or threatens equipment or property with significant damage.

“Emergency renovation” includes interim controls, renovation, remodeling, or repainting activities that are conducted in response to an elevated blood lead (EBL) inspection.



127

Emergency Renovations Required Due to Elevated Blood Lead (EBL) Inspection

1. Initially exempt from certification requirements.
2. Must follow work practice standards in Chapter 70.
3. Individuals who perform emergency renovations in response to EBL inspection must become certified as lead-safe renovator, lead abatement contractor, or lead abatement worker within six months from the date of EBL inspection report.
4. Must pass clearance testing performed by a certified elevated blood lead (EBL) inspector/risk assessor.



128

The RRP Rule: Firm Responsibilities

- Ensure overall compliance with the RRP Rule.
- Ensure that all renovation personnel are certified lead-safe renovators or have been trained on-the-job by a certified lead-safe renovator.
- Assign a certified lead-safe renovator to each job.
- Meet pre-renovation education requirements.
- Meet recordkeeping requirements.



129

RRP Rule: Individual Certified Lead-Safe Renovator Responsibilities

- At all other times during renovation, the certified lead-safe renovator must be available by telephone, pager, or answering service and be able to be onsite within 2 hours.
- Maintain the containment to keep dust and debris within the work area.
- Implement the cleaning verification procedure.
- Prepare and maintain required records.



130

RRP Rule: Individual Certified Lead-Safe Renovator Responsibilities

- Perform work and direct lead-safe work practices.
- Provide on-the-job training to non-certified workers.
- Keep a copy of the initial and/or refresher training certificates onsite.
- Use EPA-recognized test kits to identify lead-based paint.
- The certified lead-safe renovator **MUST** be on site during all preparation work and clean up activities.



131

Exterior Containment: Establish the Work Area

Cover the ground with protective sheeting.
If space permits, extend a minimum of 10ft from the work area.

Limit access, place signs.
Establish a 20ft perimeter around the work area if space permits.

Close windows and doors.

Close all doors and windows that are within 20ft of the work area.
Use two layers of plastic sheeting* on doors in the work area

*HUD Guidelines require 6mil plastic, IDPH CH 70 requires the use of plastic



132

EXTERIOR GARDENS, PLAYGROUND EQUIPMENT, TOYS AND SANDBOX

Cover exterior gardens and plantings with plastic.
Move play equipment 20 feet away from working area.
If items cannot be moved, seal with taped plastic sheeting.



133

Interior Containment: Limit Access and Post Signs

WARNING

RENOVATION WORK
LEAD WORK AREA/POISON
DO NOT ENTER WORK AREA
UNLESS AUTHORIZED
NO SMOKING, EATING, OR DRINKING

- Notify residents to stay away from the work area.
- Do not allow residents or pets near the work area.
- Do not allow eating, drinking, or smoking in the work area.
- Post warning signs.
- Additional signs may be required to inform parents in child-occupied facilities. See the memo regarding the pre-renovation notification in the appendix.



134

Interior Containment: Remove or Cover Belongings

- Remove belongings.
- Cover immovable objects in protective sheeting, including:
 - Furniture
 - Carpet

Cover Floors

- Cover all work area floors with plastic sheeting.
- Cover floors a minimum of 6 feet in all directions around the paint being disturbed.



135

Interior Containment: Close Windows, Doors, HVAC

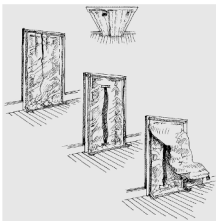
Depending on the amount of work that is to be done:

- Close all windows in the work area.
- Close all doors in the work area.
- Close and seal all HVAC vents in the work area.



136

Interior Containment: Work Area Entry Doorway



Cover work area entry doors with two layers of protective sheeting.



137

Specialized Tools

Large jobs may require special considerations to get the job done, like:

- Power sanders, grinders and planers, needle guns, and abrasive and sand blasters, each with required HEPA-filtered capture attachments.
- Pneumatic and battery powered tools to protect against shock hazards.
- Specialized planning and containment.



138

**RECOMMENDED PAINT REMOVAL METHODS:
WORK WET**

Mist work area with water and keep it wet.

Do this when scraping, sanding, sawing, planing, and prying painted surfaces and when removing them.



139

**Cleanup
Cleaning During the Job**

A clean work site reduces the spread of dust and paint chips.

- **Clean as you work.**
HEPA vacuum horizontal surfaces.
Remove debris frequently.
Remove paint chips as they are created.
As building components are removed, wrap and dispose of them immediately.
- **Clean frequently (in stages, at least daily).**



140

Interior Cleaning Requirements

Collect all paint chips and debris, and seal in heavy duty plastic bags.

Mist, remove, fold (dirty side in) and tape or seal protective sheeting. Dispose of sheeting as waste.

HEPA vacuum or wet wipe walls from high to low, then HEPA vacuum remaining surfaces and wipe with a damp cloth.

Clean 2 feet beyond the contained work area.

Use disposable wipes or change cloths frequently.

For carpet or rug, use HEPA vacuum with beater bar.

HEPA vacuum and wet mop uncarpeted floors – two-bucket mopping method or wet mopping system.



141

Visual Inspection Procedure

1. Conducted by certified lead-safe renovator.
2. Make sure there is adequate lighting in the work area.
3. Systematically look for dust and debris on every horizontal surface in the work area and 2 feet beyond.
 - Work from the farthest area from the entry to the entry.
 - Closely examine each surface.
4. If you find visible dust or debris, then re-clean the work area and repeat step 3.
5. Once you have carefully looked at all of the surfaces and found no dust or debris, proceed to the cleaning verification procedure or clearance.



142

Post renovation Cleaning Verification (CV) Procedure For Windows



- Certified lead-safe renovator **MUST** perform verification testing.
- Wipe each window sill and window trough within the work area.
- Use a single wet disposable cleaning cloth per window sill.
- Use a single wet disposable cleaning cloth per window trough.
- Compare each cloth to the verification card.
- If the cloth is lighter than the verification card the area has been adequately cleaned.
- If it does not match or is darker than the verification card then re-clean the area. Then recheck with either a new cloth or a new area of the same cloth and compare to the verification card.
- If it fails again, re-clean and wait 1 hour or until surface is completely dry and repeat verification this time using a dry disposable cleaning cloth. This completes the cleaning verification.



143

Post renovation Cleaning Verification (CV) Procedure for Floors and Counter Tops

- Wipe uncarpeted floors and all countertops with wet disposable cleaning cloths.
- Floors must be wiped using an application device with a long handle and a head to which the cloth is attached.
- Wipe up to a maximum of 40 ft² per cloth.
- Compare each wipe to the CV card.
- If the cloth matches or is lighter than the CV card, the surface has passed cleaning verification and no further action is required.
- If the cloth is darker than the CV card, re-clean and repeat the CV process.
- If the second wet cloth fails, wait 1 hour or until surfaces are dry, and then wipe with a new disposable cleaning cloth designed to be used for cleaning hard surfaces.

This completes the cleaning verification.



144

Exterior Verification

- Certified lead-safe renovator **MUST** perform visual inspections.
- Certified lead-safe renovator **MUST** ensure there is no dust, debris, or residue on windowsills or the ground.
- If there is visible debris it must be eliminated and another visual exam must be performed.
- When exterior passes visual exam it is considered adequately cleaned.



145

ON THE JOB TRAINING

Certified Renovators are responsible for teaching lead-safe work practices to non-certified renovation workers.

Seven steps of on the job training

1. Recognize lead based paint.
2. Set it up safely.
3. Protect yourself.
4. Control the spread of lead dust.
5. Work clean and safe.
6. Control the waste.
7. Education regarding cleaning verification or clearance testing.



146

Step 1: Recognize Lead-Based Paint

- Lead-based paint (LBP) is found many older homes:
 - 1960-1978 homes – 1 in 4 have LBP.
 - 1940-1960 homes – 7 in 10 have LBP.
 - Pre-1940 homes – 9 in 10 have LBP.
- Renovation, repair or painting that disturbs lead-based paint can create significant lead-based paint hazards in homes.
- Just a little lead-based paint dust can poison kids, their parents and pets, and can cause problems for pregnant women and their unborn children.
- The certified lead-safe renovator will determine if lead-based paint is present on work surfaces.
- If information about lead-based paint is not available for a pre-1978 homes or a child-occupied facility, assume that lead-based paint is present and use lead-safe work practices.



147

Step 2: Set It Up Safely

- Containment is used to keep dust IN the work area and non-workers OUT!
- Signs and barriers are used to limit access.
- Inside versus outside jobs.
 - Review all procedures and differences in setup.



148

Step 3: Protect Yourself

- Without the right personal protective equipment (PPE) workers can swallow and inhale lead from the job, and can carry lead on their skin and work clothes home to their families.
- Advise workers to:
 - Protect eyes.
 - Keep clothes clean or use disposable clothing.
 - Wear a respirator. The appropriate respirator keeps lead out of the lungs and stomach.
 - Wash-up each time they leave the work area and especially at the end of the day.



149

Step 4: Control the Spread of Dust

- The goal is to control the spread of dust that is created.
- Use the right tools.
- Disposable plastic drop cloths control the spread of dust and debris.
- Avoid prohibited practices.



150

Step 5: Leave the Work Area Clean

- The goal should be to leave the work area completely free of dust and debris.
- Discuss daily cleaning procedures.
- Discuss end of job cleaning procedures.



151

Step 6: Control the Waste

- Discuss the waste bagging procedure.
- Demonstrate folding a small section of plastic with the dirty side turned in.
- Discuss temporary storage of waste.
- Discuss how to deal with waste water appropriately.
- Discuss waste disposal rules that apply to the specific job.



152

Step 7: Cleaning Verification or Clearance Testing

- Cleaning verification will be performed by a Certified Renovator after most renovations.
- A clearance examination may be requested in place of cleaning verification by the owner, and in some cases with contracts.
- Discuss what happens when cleaning verification and/or clearance is not passed.



153

LEAD SAFE RENOVATION

Record keeping

- Copies of certified firm and certified lead-safe renovator certifications (must be kept on site).
- Lead-based paint testing results and written report when an EPA-recognized test kit is used. Must be kept for up to 3 years.
- Proof of owner/occupant pre-renovation education must be kept for up to 3 years.
- Non-certified worker training documentation (must be kept on site) and then kept for up to 3 years.
- Final report with post renovation cleaning verification card or clearance testing report. Must be delivered to the owner with the final invoice or within 30 days. Must be kept for up to 3 years.
- I.A.C 641-70.6(11) part g (record keeping)



154

PERSONAL PROTECTION- BASICS HIGH EFFICIENCY PARTICULATE AIR (HEPA) FILTER

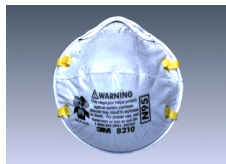
- HEPA filters are 99.97% efficient in removing all dust particles larger than 0.3 micrometers in diameter.
- Type of respirator to wear to filter lead particles.
- Should be labeled as N-100, P-100, or R-100 or "protects against lead."

ORGANIC VAPOR RESPIRATORS

Workers may need organic vapor protection if using chemical strippers or heat guns.



155



156

WASTE MANAGEMENT

- Governed by federal RCRA (Resource Conservation and Recovery Act).
- In Iowa, this is administered by EPA Region VII.



157

WASTE CATEGORIES

1. Paint chips, soil, and building components.
2. Waste water from cleaning.



158

PAINT CHIPS, SOIL, AND BUILDING COMPONENTS

- Exempted from hazardous waste regulations under the RCRA household waste exclusion. (1995 & 2000 EPA Interpretations)
- Contractor must document that waste came households rather than commercial buildings or superstructures. If lead in soil is from source other than paint chips, must treat as hazardous waste.
- In Iowa, components may be disposed of at a solid waste landfill or at a construction and demolition landfill. (Other states' regulations may be different)
- Do not accumulate waste -- dispose as you go.
- Work with landfill in advance. Stress that waste comes from households.



159

WASTE WATER

(Example: from cleaning after hazard control).

- Contact the local waste water treatment facility to see if special treatment is needed.
- Pour wastewater down toilet after any required pretreatment.
- NEVER dispose of waste water by pouring onto ground or pavement.



160

CLEANUP OF LEAD DUST AFTER LEAD HAZARD CONTROL WORK



161

FINAL CLEANING PROCEDURES

Wait at least one hour after finishing work to allow dust to settle.



162

HEPA / WET WASH / HEPA CYCLE

1. HEPA vac to remove as much dust and debris as possible.
2. Wet wash to further dislodge dust from surfaces.
3. HEPA vac after drying to remove remaining particles.



163

HEPA VACUUM ALL ROOMS UNLESS:

- Room had no lead hazards and was properly separated from work areas before work began.
- Room was not entered during work.



164

HEPA VACUUMING PROCEDURES

1. Begin on ceilings and end on the floors.
2. Do not pass through rooms already cleaned.
3. Clean dwellings' entryway last.



165

CLEARANCE INSPECTIONS

CLEARANCE TESTING NEEDED TO DETERMINE IF:

- 1. The work was actually completed as specified.
- 2. To detect presence of excessive lead dust.
- 3. To ensure all treated surfaces are sealed.

If clearance results pass, contractor can conclude job is complete and area is safe for unprotected workers and for residents and young children.



166

WHEN IS CLEARANCE TESTING REQUIRED?

- Required by law for all abatement projects.
- For HUD-assisted housing, if a maintenance or hazard reduction activity disturbs painted surfaces that total more than:
 - 1. 20 square feet on exterior surfaces.
 - 2. 2 square feet in any one interior room or space.
 - 3. 10 percent of the total surface area on any interior or exterior type of component with a small surface area(window sills, baseboards, and trim.)



167

WHEN IS CLEARANCE TESTING REQUIRED?

- **Probably required for interim controls and other work where specs cite the HUD Guidelines.**
- **Any other time required by the contract between property owner and contractor.**



168

WHO CAN DO CLEARANCE INSPECTIONS?

- For clearance after abatement, must be a certified inspector/risk assessor.
- For clearance after interim controls, paint stabilization, standard treatments, or rehabilitation pursuant to HUD regulations, must be a certified sampling technician (Iowa regulations).



169

WHO CAN DO CLEARANCE INSPECTIONS?

- HUD Guidelines state that clearance inspector should be paid, employed, or compensated by the property owner, NOT the contractor.
- New HUD regulations and Iowa regulations allow the “designated party” (HUD grantee) to perform both lead hazard controls and clearance, so long as these are done by a different person.
- This option is not available for private companies. In that case, the lead hazard controls and clearance must be done by different companies.



170

VISUAL EXAMINATION

- Visual examination done before environmental sampling to determine if work was done properly.
- Need copy of inspection or risk assessment.
- Need scope of work or contract specs.



171

VISUAL EXAMINATION
Soil Treatments and Exterior Work

- If soil covering is chosen method, verify that all bare soil areas are covered.
- If work is done on the exterior, verify that the work is complete and that there are no paint chips in areas of bare soil.



172

VISUAL EXAMINATION
Interim Controls

1. Confirm that all lead-based paint is stabilized. (No deteriorated paint in a cleared dwelling.)
2. Chewable, impact, and friction surfaces marked for treatment have been treated.



173

VISUAL EXAMINATION
Settled Dust and Debris

- No evidence of settled dust following cleanup.
- Contractor must remove settled dust before clearance sampling.
- "White glove test" may be a good indicator for contractors.
- Ensure that all waste and debris have been removed.
- Ensure that lead dust and paint chips did not get outside dwelling.
- Check for paint chips in bare soil.



174

CLEARANCE DUST SAMPLING

- Conduct after all surfaces are sealed.
- Done at least one hour after final cleaning to allow dust to settle on surfaces.
- May use single surface or composite samples. If recleaning is needed, composite sampling may be more costly.



175

MULTIFAMILY HOUSING (>20 units)

- Random sampling is permitted, but ONLY if done by a certified lead inspector/risk assessor. (Cannot be done by a certified visual risk assessor.)
- If testing fails, the affected component in all units represented by random sample must be re cleaned and retested.
- May be cheaper to have all units sampled to determine those needing additional cleaning.
- Insurance carriers covering hazard control work may require testing of all units.



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SINGLE-FAMILY HOUSING (20 or fewer units)

- **All units must be tested.**



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Clearance Category	Category Description	Number and Location of Single-Surface Wipe Samples in Each Area	Number and Location of Composite Wipe Samples
1	Interior treatments with no containment within dwelling	Three dust samples each from at least four rooms (whether treated or untreated): One floor. One interior window sill One window trough AND For common areas, one floor sample for every 2,000 ft ² of common area floor.	Three composite samples for every batch of four rooms (whether treated or untreated): One floor composite. One interior window sill composite. One window trough composite. AND For common areas, one floor subsample for every 2,000 ft ² (up to 8,000 ft ² for each composite sample).



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Clearance Category	Category Description	Number and Location of Single-Surface Wipe Samples in Each Area	Number and Location of Composite Wipe Samples
2	Interior treatments with containment between treated and untreated areas (plastic airlock).	Three dust samples each from at least four treated rooms. Stairways, hallways, porches, etc. are considered separate rooms. One floor. One interior window sill One window trough AND One floor sample outside containment area (within 10 feet of airlock)**. AND For common areas, one floor sample for every 2,000 ft ² and one floor sample outside containment.	Three composite samples for every batch of four treated rooms. Stairways, hallways, porches, etc. are considered separate rooms. One floor composite. One interior window sill composite. One window trough composite. AND One floor sample outside containment area (within 10 feet of airlock)**. AND For common areas, one floor subsample for every 2,000 ft ² (up to 8,000 ft ² for each composite sample).


**This is required by state and federal law for all abatement projects and for all clearance in HUD assisted housing.



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SINGLE-SURFACE VERSUS COMPOSITE SAMPLING FOR CLEARANCE

Room Number	Single-Surface Sample	Composite Sample
1 - Carpeted	#1 Floor #2 Window Sill #3 Window Trough	#1 Floor #2 Window Sill #3 Window Trough
2-Carpeted	#4 Floor #5 Window Sill #6 Window Trough	#1 Floor #2 Window Sill #3 Window Trough
3- Carpeted		#1 Floor #2 Window Sill #3 Window Trough
4- Carpeted		#1 Floor #2 Window Sill #3 Window Trough
5 - No carpet	#7 Floor #8 Window Sill #9 Window Trough	#4 Floor #5 Window Sill #6 Window Trough
6 - No carpet	#10 Floor #11 Window Sill #12 Window Trough	#4 Floor #5 Window Sill #6 Window Trough
7 - No carpet		#4 Floor #5 Window Sill #6 Window Trough
Total Number Dust Samples (to lab)	12 samples	6 samples



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Example of single surface clearance data from a seven room unit where no containment was used. What components from what rooms fail? What components will need to be re cleaned? Retested?

Room	Floors ($\mu\text{g}/\text{ft}^2$)	Sills ($\mu\text{g}/\text{ft}^2$)	Troughs ($\mu\text{g}/\text{ft}^2$)
1	218	40	350
2			
3	30	65	90
4			
5	42	20	60
6	38	20	500
7			



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RE-CLEANING TO MEET CLEARANCE

Focus on areas where first round of cleaning was inadequate. Once a component has passes it's final and no further testing is required.

If one component in a room fails, re-clean only that component in the affected rooms.

If composite samples fail, all surfaces represented by the sample must be re-cleaned (or resampled individually).



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CLEARANCE TESTING REPORT

When clearance testing is required, a clearance report shall be prepared.

If the activity is abatement, the clearance testing report must be part of the abatement report.

- Due 3 weeks for abatement
- Due 30 days for non-abatement



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CLEARANCE TESTING REPORT

For activities other than abatement, the following information must be included in the clearance testing report:

- The address of the dwelling unit, including apartment numbers, and whether common areas are included in the areas where work was done.
- The date of the clearance examination.
- The name, address, signature, and certification number of the person conducting the clearance examination.
- The results of the visual assessment for deteriorated paint and visible dust, debris, residue, or paint chips.
- The results of the analysis of dust samples, in micrograms per square foot, by location of sample.



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CLEARANCE TESTING REPORT

For activities other than abatement, the following information must be included in the clearance testing report:

- The name and address of each laboratory that conducted the analysis of the dust samples, including the identification number for the laboratory as recognized by EPA under the NLLAP program.
- The start and completion dates of the hazard reduction or maintenance activity.
- The name and address of each firm or organization conducting the hazard reduction or maintenance activity and the name of the supervisor assigned.



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CLEARANCE TESTING REPORT

For activities other than abatement, the following information must be included in the clearance testing report:

- A detailed description of the hazard reduction or maintenance activity, including methods used, locations of exterior surfaces, interior rooms, common areas, and components where hazard reduction occurred, and any recommended monitoring of encapsulants or enclosures.
- If soil hazards were reduced, a detailed description of locations of the hazard reduction activity and methods used.



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CLEARANCE TESTING REPORT

For activities other than abatement, the following information must be included in the clearance testing report:

- It must be clear that the property owners will receive a copy of the report and that they have been advised about their obligation to disclose the report to future tenants or buyers.
- It must also be clear that the owners has been advised about Iowa's pre renovation notification requirements.

This report will be one of the main items that IDPH examines when conducting compliance inspections of certified sampling technicians.



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RECORDKEEPING

1. Clearance records must be kept by property owner, contractor, and clearance inspector.
2. Property owner should keep for life of the property.
3. Contractor and inspector must keep for at least 3 years.



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SAMPLING TECH CERTIFICATION REMINDER

- Must be certified to do any lead activities.
- Passing this course does **NOT** mean you are certified.
- 3 Year certification through IDPH online licensing website, \$180 fee + Online renewal form
- Every 3 years you must take an 8hr refresher class.



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