



## **Chapter 9: Worker Protection**

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# Chapter 9: Worker Protection

## How To Do It

1. **Develop a written compliance plan and designate a competent person to oversee worker protection efforts (usually an industrial hygienist or a certified lead abatement supervisor).** To ensure worker exposure to airborne lead during residential lead-related work does not exceed the permissible exposure limit (PEL) set by the Occupational Safety and Health Administration (OSHA) (50  $\mu\text{g}/\text{m}^3$  averaged over an 8-hour period), develop a written compliance plan and designate a competent person to oversee worker protection efforts (usually an industrial hygienist or a certified lead abatement supervisor). See the OSHA Lead in Construction Standard for complete details (29 CFR 1926.62) at [http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=10641](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10641). OSHA's Lead homepage for the construction industry (<http://www.osha.gov/SLTC/lead/construction.html>) provides a range of regulatory and technical resources, such as the informational booklet "Lead in Construction" (OSHA Publication 3142-09R; <http://www.osha.gov/Publications/osha3142.html> and <http://www.osha.gov/Publications/osha3142.pdf>.)
2. **Conduct an exposure assessment for each job classification in each work area. Monitoring current work is the best means of conducting exposure assessments.** Perform air sampling of work that is representative of the exposure for each employee in the workplace who is exposed to lead. Alternatively, if working conditions are similar to previous jobs by the same employer within 12 months, previously collected exposure data can be used to estimate worker exposures. Finally, objective data (as defined by OSHA) may be used to determine worker lead exposures in some cases. Exposures to airborne leaded dust greater than 30  $\mu\text{g}/\text{m}^3$  (8-hour, time-weighted average) trigger protective requirements. Estimating exposure is not acceptable.
3. **Use specific worker protection measures.** If lead hazard control will include manual demolition, manual scraping, manual sanding, heat gun use, or use of power tools such as needle guns, then specific worker protection measures are required until an initial exposure assessment is completed. If the initial exposure assessment indicates exposures are less than 30  $\mu\text{g}/\text{m}^3$ , the requirements do not legally apply, although exposure to lead should be kept as low as possible at all times.
4. **Implement engineering, work practice, and administrative controls to bring worker exposure levels below the PEL.** Examples of such controls include the use of wet abatement methods, ventilation and the selection of other work methods that generate little dust.
5. **Supplement the use of engineering and work practice controls with appropriate respirators and implement a respiratory protection program where needed.** Provide a respirator to any employee who requests one, regardless of the degree of exposure.
6. **Arrange for a medical exam before work begins for each worker who will be required to wear a respirator. The exam will indicate whether the worker is physically capable of wearing a respirator safely. Conduct fit testing for all workers who will be required to wear respirators.** Workers with beards, scars, or unusual facial shapes may not be able to wear certain kinds of fitted respirators.
7. **Provide protective clothing and arrange for proper disposal or laundering of work clothing, and proper labeling of containers of contaminated clothing and equipment.**

8. **Provide hand washing facilities, with showers if exposures are over the PEL.**
9. **Implement a medical surveillance program that includes blood lead monitoring under the supervision of a qualified physician pursuant to OSHA regulations.** Initial blood testing for lead exposure is required by OSHA for workers performing certain tasks, such as manual scraping, whenever an exposure determination has not been completed, and for any worker who may be exposed to greater than 30  $\mu\text{g}/\text{m}^3$  of lead on any day.
10. **Ensure that workers are properly trained in the hazards of lead exposure, the location of lead-containing materials, the use of job-specific exposure control methods (such as respirators), the use of hygiene facilities, and the signs and symptoms of lead poisoning.** OSHA requires all lead hazard control workers to be trained and to be given (communicated) specific information on lead hazards for the specific job they are doing. Employers are responsible for training their employees to comply with all of OSHA's construction standards, not just the Lead standard, and this training needs to be work site-specific.
11. **Post lead hazard warning signs around work areas. Also, post an emergency telephone number in case an on-the-job injury occurs.**
12. **Conduct work as specified.**
13. **Conduct worker decontamination before all breaks, before lunch, and at the end of the shift.** Decontamination of workers performing abatement usually consists of:
  - ◆ Cleaning all tools in the work area or a specially designated area in the restricted work area (end of the shift only).
  - ◆ HEPA vacuuming all protective clothing if visibly contaminated with paint chips or dust before entering the decontamination area.
  - ◆ Entering the decontamination area (dirty side).
  - ◆ Removing protective clothing by rolling outward (do not remove respirator yet); removing work shoes and putting in plastic bag. Remove all PPE slowly and from the inside-out to contain any accumulated dust.
  - ◆ Entering shower or washing facility.
  - ◆ Washing hands and then removing respirator.
  - ◆ Taking a shower, if available, using plenty of soap and water; washing hair, hands, fingernails, and face thoroughly (before lunch and at the end of the shift only).
  - ◆ Entering the clean area and putting on street clothing and shoes.
14. **Maintain exposure assessment and medical surveillance records for 30 years.** Notify workers of air sampling and blood lead level results within 5 working days after receiving the results. Provide each worker with a copy of the written medical opinion from their examining physician. Employers must maintain all records of exposure monitoring for 30 years, and all medical records for the duration of each worker's employment plus 30 years.

## I. Introduction

The potential for worker exposure to lead (as well as to other hazardous substances, safety hazards, and physical agents) exists during all lead hazard control projects. Due to the recognized adverse health effects of lead, employers should minimize worker lead exposures as much as possible. Employers should refer directly to the OSHA construction lead standard for complete requirements. Links to several OSHA publications are found in Appendix 15.

### Where To Get the OSHA Standard and Publications

OSHA standards can be obtained by:

Purchasing individual CFR titles from the U.S. Government Online Bookstore, <http://bookstore.gpo.gov>.

Contacting the OSHA Publications Office at 800-321-OSHA (6742), option 5. Hearing- or speech-challenged individuals may access this number through TTY by calling the toll-free Federal Relay Service at 800-877-8339.

Visiting [www.osha.gov](http://www.osha.gov) (click on Regulations, then, lower down on the Regulations page, click on the Construction tab; for Lead in Construction, scroll to "[1926.62 - Lead](#)"; then click on the main body of the regulation and then each of the appendices).

## II. Background on OSHA Requirements for Residential Lead Hazard Control Work

OSHA standards will apply to most forms of residential lead hazard control work. There are several OSHA standards that may apply.

HUD's 1990 Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing preceded OSHA's issuing the lead-in construction standard as an interim final rule in 1993. The Guideline's original chapter on worker protection was necessary for HUD abatement projects involving lead-based paint because, at that time, OSHA had no expanded lead standard for worker protection in construction. In fact, OSHA's interim final rule was promulgated in 1993 for the very purpose of filling this gap, and it was issued under the Congressional authority of Title X, Subtitle C, Sections 1031 and 1032, Worker Protection, of the Housing and Community Development Act of 1992 (58 Fed Reg. 26590-01, May 4, 1993).

Accordingly, when HUD last updated these *Guidelines'* chapter on worker protection in 1995, the OSHA standard for lead in construction (which covers interim controls, renovation, repair and painting (RRP), and related work in housing) was still relatively new, so a detailed but summarized presentation of this new OSHA standard was incorporated into Chapter 9 of the *Guidelines*. Since then, however, all of

OSHA's standards and guidance information have been made available to the public on the internet and through downloadable guidance publications and e-tools. OSHA information is also readily available from local OSHA Area Offices and State Consultation programs.

Therefore, to conserve resources and avoid duplication among federal agencies' overlapping requirements with regard to lead hazard control activities, and to ensure improved accuracy of regulatory requirements, Chapter 9 of these *Guidelines* has been substantially revised.

### III. Signs

In 2012, OSHA issued a major change in its Hazard Communication Standard (HCS), 29 CFR 1910.1200, modifying the HCS to conform to the United Nations' Globally Harmonized System of Classification and Labelling of Chemicals (GHS). (77 *Federal Register* 17574-17896; March 26, 2012 (<http://www.gpo.gov/fdsys/pkg/FR-2012-03-26/html/2012-4826.htm>; see also <http://www.osha.gov/dsg/hazcom/ghs-final-rule.html> and OSHA's electronic newsletter at <http://www.osha.gov/as/opa/quicktakes/qtGHS03212012.html>) As it is implemented through 2016, this rule will change requirements for material safety data sheets (MSDS) – to be renamed safety data sheets – and requirements for labels and signs.

Several of OSHA's substance-specific standards, including those for lead, have been revised regarding signs and labels. The lead standards contain new requirements, incorporated by the revised Hazard Communication Standard, for mandatory warning signs in each work area where an employee's exposure to lead is above the permissible exposure limit (PEL) of 50  $\mu\text{g}/\text{m}^3$  of airborne lead averaged over an 8-hour period.

The revised signage provisions of the lead standards – see 29 CFR 1910.1025(m)(2) in the general industry standard (which covers maintenance and other non-construction work in housing), and 29 CFR 1926.62(m)(1) in the construction standard – require that:

- ◆ On and after June 1, 2016, the signs for work areas must have the following wording:

- For work covered by the lead in general industry standard:

DANGER  
LEAD  
MAY DAMAGE FERTILITY OR THE UNBORN CHILD  
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM  
DO NOT EAT, DRINK OR SMOKE IN THIS AREA

- For work covered by the lead in construction standard:

DANGER  
LEAD WORK AREA  
MAY DAMAGE FERTILITY OR THE UNBORN CHILD  
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM  
DO NOT EAT, DRINK OR SMOKE IN THIS AREA.

- ◆ Before June 1, 2016, the signage for used for work covered by either the general industry or the construction industry may use either the wording above for that industry, or the wording below:

WARNING  
LEAD WORK AREA  
POISON  
NO SMOKING OR EATING.

Whichever signs are used in a work area, the employer must ensure that they are illuminated and cleaned as necessary so that the legend is readily visible, and that no statement appears on or near them that contradicts or detracts from the meaning of the required signs.

Consultation assistance is available on request to employers who want help establishing and maintaining a safe and healthful workplace. Funded largely by OSHA, the service is provided at no cost to small employers and is delivered by state authorities through professional societies and health consultants.

Paint with lead that is deteriorated or disturbed, even if its lead content is below the current EPA and HUD standards, may still pose a health hazard. As of the publication of the second edition of these *Guidelines*, in response to a petition received by the EPA on August 10, 2009, the EPA and HUD are considering whether to lower the dust hazard standards and/or modify the definition of lead-based paint.

Individual States that have approved plans for OSHA enforcement may adopt their own lead standards for the construction industry, as long as their requirements are at least as stringent as the Federal OSHA standard. Employers will need to ensure that their programs for worker protection meet applicable State requirements. The OSHA standard does not specify the methods for any given type of activity, such as lead-based paint removal. The method of removal is left to the discretion of the employer, and constitutes an important potential engineering control. In some cases, however, the method of abatement or interim control will have already been selected by a risk assessor and/or the property owner based on other considerations.

#### IV. Protective Clothing and Equipment

The EPA/HUD renovation, repair and painting (RRP) training curriculum recommends the following personal protective equipment for renovation, repair and painting: a painter's hat, disposable coveralls, and R-100, P-100 or disposable N-100 respirator. N-100 is a NIOSH rating for respirators that can be used around leaded dust. "100" means that the respirator has HEPA filtering capability. The "R," "P" and "N" filters refer to the environmental conditions that exist when the respirator is worn. The disposable N-100 respirator is acceptable for small jobs but under other work conditions, OSHA may require another type of respirator. Head covering, such as a painter's hat and shoe covers are recommended as always being appropriate for paint-disturbing work. Eye protection and gloves should be worn if needed, and an eye- and body-wash system must be in place if workers' eyes or body may be injured by caustic materials. In addition, OSHA requires that employers provide and enforce the use of protective clothing whenever employees are exposed to airborne lead above the PEL (irrespective of respirator use) and as interim protection for employees performing tasks listed in OSHA's task-related triggers. Hard-hats, goggles, safety shoes, and other personal protective equipment may also be required by other OSHA standards, depending on the type of work performed. These materials must be generally supplied at

no cost to employees. (See 20 CFR 1926.95(d). Non-specialty safety-toe protective footwear (including steel-toe shoes or steel-toe boots) and non-specialty prescription safety eyewear are among the items for which the employer generally does not have to pay.)

The lead standards contain new requirements, incorporated by the revised Hazard Communication Standard (see Section III, above), for labeling containers of contaminated protective clothing and equipment which is to be cleaned, laundered, or disposed of.

The revised signage provisions of the lead in general industry standard and the lead in construction standard require (see 29 CFR 1910.1025(g)(2)(vii)) and 29 CFR 1926.62(g)(2)(vii), respectively) that labels must have the following wording:

- ◆ On and after on June 1, 2015, the labels for containers of contaminated protective clothing and equipment to be cleaned, laundered, or disposed of must have the following wording:

- For maintenance and other work covered by the lead in general industry standard:

DANGER: CLOTHING AND EQUIPMENT CONTAMINATED WITH LEAD. MAY DAMAGE FERTILITY OR THE UNBORN CHILD. CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM DO NOT EAT, DRINK, OR SMOKE WHEN HANDLING DO NOT REMOVE DUST BY BLOWING OR SHAKING.

- For RRP, interim control and other work covered by the lead in construction standard:

DANGER: CLOTHING AND EQUIPMENT CONTAMINATED WITH LEAD. MAY DAMAGE FERTILITY OR THE UNBORN CHILD. CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM. DO NOT EAT, DRINK OR SMOKE WHEN HANDLING. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.

- ◆ Before June 1, 2015, the label used for work covered by either the general industry or the construction industry may use either the wording above for that industry, or the wording below:

CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.