Federal Regulations (CFR), Part 1926.62. This program is essential to minimize worker risk of lead exposure. Construction projects vary in their scope and potential for exposing workers to lead and other hazards. Many projects involve only limited exposure, such as the removal of paint from a few interior residential surfaces, while others may involve substantial exposures. Employers must be in compliance with OSHA's lead standard at all times. A copy of the standard and a brochure — Lead in Construction (OSHA 3142) — describing how to comply with it, are available from OSHA Publications, P.O. Box 37535, Washington, D.C. 20013-7535, (202) 693-1888(phone), or (202) 693-2498(fax); or visit OSHA's website at www.osha.gov.

**How You Can Become Exposed to Lead**

Lead is an ingredient in thousands of products widely used throughout industry, including lead-based paints, lead solder, electrical fittings and conduits, tank linings, plumbing fixtures, and many metal alloys. Although many uses of lead have been banned, lead-based paints continue to be used on bridges, railways, ships, and other steel structures because of its rust- and corrosion-inhibiting properties. Also, many homes were painted with lead-containing paints. Significant lead exposures can also occur when paint is removed from surfaces previously covered with lead-based paint.

**Operations that can generate lead dust and fumes include:**
- Demolition of structures;
- Flame-torch cutting;
- Welding;
- Use of heat guns, sanders, scrapers, or grinders to remove lead paint; and
- Abrasive blasting of steel structures

OSHA has regulations governing construction worker exposure to lead. Employers of construction workers engaged in the repair, renovation, removal, demolition, and salvage of flood-damaged structures and materials are responsible for the development and implementation of a worker protection program in accordance with Title 29 Code of Federal Regulations (CFR), Part 1926.62. This program is essential to minimize worker risk of lead exposure. Construction projects vary in their scope and potential for exposing workers to lead and other hazards. Many projects involve only limited exposure, such as the removal of paint from a few interior residential surfaces, while others may involve substantial exposures. Employers must be in compliance with OSHA's lead standard at all times. A copy of the standard and a brochure — Lead in Construction (OSHA 3142) — describing how to comply with it, are available from OSHA Publications, P.O. Box 37535, Washington, D.C. 20013-7535, (202) 693-1888(phone), or (202) 693-2498(fax); or visit OSHA's website at www.osha.gov.

**Major Elements of OSHA’s Lead Standard**

- A permissible exposure limit (PEL) of 50 micrograms of lead per cubic meter of air, as averaged over an 8-hour period.
- Requirements that employers use engineering controls and work practices, where feasible, to reduce worker exposure.
- Requirements that employees observe good personal hygiene practices, such as washing hands before eating and taking a shower before leaving the worksite.
- Requirements that employees be provided with protective clothing and, where necessary, with respiratory protection according with 29 CFR 1910.134.

Cleaning up after a flood requires hundreds of workers to renovate and repair, or tear down and dispose of, damaged or destroyed structures and materials. Repair, renovation and demolition operations often generate dangerous airborne concentrations of lead, a metal that can cause damage to the nervous system, kidneys, blood forming organs, and reproductive system if inhaled or ingested in dangerous quantities. The Occupational Safety and Health Administration (OSHA) has developed regulations designed to protect workers involved in construction activities from the hazards of lead exposure.
• A requirement that employees exposed to high levels of lead be enrolled in a medical surveillance program.

Additional Information
For more information on this, and other health-related issues impacting workers, visit OSHA’s Web site at www.osha.gov.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For more complete information:

OSHA
Occupational Safety and Health Administration
U.S. Department of Labor
www.osha.gov
(800) 321-OSHA
DSTM 9/2005
Old paint on metal bridges, process equipment, and buildings may contain lead. Construction workers are exposed to lead when metal structures are torn down, renovated, or repainted.

When metal covered with lead paint is cut, sanded, heated, burned, or blasted with abrasives, lead gets into the air. Anyone near such work can get lead poisoning.

The Hazards

Lead is toxic if you breathe or swallow it. It can cause severe anemia and harm reproduction. It can damage your kidneys, brain, and nervous system, too.

The first signs of severe poisoning may be upset stomach (or cramps), weakness, joint pain, and/or being tired. (But lead can harm you even if you don’t show these symptoms at first.)

Protect Yourself

If you are stripping, sanding, heating, cutting, or otherwise disturbing a painted surface — or you are near such work:

• Ask your contractor if the paint contains lead. The OSHA hazard communication rules say the contractor must train you if you are exposed. Until you are sure there is no lead, act as if the paint contains lead.

If the paint has lead (or may have lead):

• Follow your contractor’s special procedures for this work. OSHA and some states have special rules for work on lead-coated surfaces. OSHA says a contractor must use engineering and work practice controls to prevent lead exposures.

• Use wet methods, if you can, to keep down any dust.

• Before you use a torch for cutting, remove paint. (Cutting with torches or heating lead paint produces a lead fume.) Use long-handled torches.

• Use local-exhaust ventilation.
• OSHA says use a respirator **only** when other controls are not possible or not enough. *(Do not use a disposable dust mask that is not approved by NIOSH, the National Institute for Occupational Safety and Health.)*

• **If respirators are used, OSHA requires a full respiratory protection program.** The contractor must do an exposure assessment to find out which respirator is needed. A respirator will need at least a NIOSH-approved half-mask with high-efficiency (N-, R-, or P-100) filter protection for lead fumes. Such a mask provides protection for up to 10 times the permissible exposure limit (PEL) for lead fumes.

• A respiratory protection program must include proper selection and fitting of respirators, medical screening of workers to be sure they can wear respirators, and worker training. Correct storage and cleaning of respirators, and an evaluation of the program are needed also.

• **Do not smoke, eat, or drink around work on lead paint.** This is to prevent swallowing lead.

• **Always wash your hands and face before smoking, eating, or drinking.** This is to prevent swallowing lead.

• **Do not wear work clothes home.** Lead dust on your clothes and shoes can poison your family, especially your children.

• **Have your blood-lead level checked.** OSHA says your employer must test your blood-lead level if you are exposed to lead. How often you will need more blood tests will depend on the exposure level. If your blood-lead level is above 50 micrograms per deciliter, OSHA says your employer must give you a different job until you are well. Your employer must also arrange for medical exams.

### You Should Know

Representatives of unions, management, and state and local governments have written guidelines for a safe lead-removal program for industrial structures. You can get the guidelines, *Model Specifications for the Protection of Workers from Lead on Steel Structures*, from the Center to Protect Workers’ Rights (CPWR) at 301-578-8500.

**For more information,** call your local union, the Center to Protect Workers’ Rights (CPWR) (301-578-8500 or [www.cpwr.com](http://www.cpwr.com)), the National Institute for Occupational Safety and Health (1-800-35-NIOSH, 1-800-356-4674, or [www.cdc.gov/niosh](http://www.cdc.gov/niosh)), or OSHA (1-800-321-OSHA or [www.osha.gov](http://www.osha.gov)). Or go to [www.elcosh.org](http://www.elcosh.org).

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Lead in Construction

T8 CCR Section 1532.1 covers the requirements on lead safety in construction, and makes employers responsible for complying with those requirements. Employers can reduce the hazard from lead in construction by meeting these requirements and following industry best practices.

Why employers need to be concerned?
- Lead is highly toxic and it can cause damage to brain, kidney, reproductive system, etc.
- Lead poisoning occurs through ingestion or inhalation even at a very low level of exposure.
- The risk to families, especially children, from take-home lead, carried on employees’ bodies, shoes or clothing is great.

Benefits of controlling lead exposure
Consider the alternatives to failing to protect your employees from lead exposure: fines up to $70,000 per violation, medical removal payments to workers with high blood lead levels, and costly job shutdowns. Some companies find that following the lead exposure regulations increases their business since clients want jobs that are safe for both workers and the environment.

What do I need to do to protect my employees from lead poisoning?

Assess lead exposure
Lead can be present in a wide range of materials including paints and other coatings, lead mortars, and base metals to be welded on or treated with abrasive blasting.
- Look at the age of the building or structure, the presence of coatings and other materials that may contain lead.
- Ask the property owner for relevant information.
- Also check the MSDS’ of the materials in use to see if they contain lead.

Send samples of materials to a laboratory for lead analysis. Laboratories accredited by the U.S. EPA National Lead Laboratory Accreditation Program are listed at [www.epa.gov/lead/pubs/nllap.htm](http://www.epa.gov/lead/pubs/nllap.htm). Testing methods for lead must meet requirements of Title 8 Section 1532.1(d)(9).

Regularly assess the exposure level
Employers must assess the amounts of lead breathed by workers on a regular basis for each task as per Section 1532.1(d). This is usually done by employee breathing-zone air sampling. Air sampling results are used to determine the protective measures needed as well as the type of respirator that must be worn for protection.

Have a written compliance program
Prior to starting the job, you shall establish and implement a written compliance program as per 1532.1(e). In addition, you need to provide a written Pre-Job Notification to the nearest Cal/OSHA office within 24 hours of start of the work. The notification can also be made online at [http://www.dir.ca.gov/dosh/Permits.html](http://www.dir.ca.gov/dosh/Permits.html).

See Section 1532.1(p) for details on required information and types of jobs covered.

Reduce and maintain low lead level
On all construction jobs where lead is present, the employer should reduce and maintain lead levels as low as possible by:
- **Housekeeping.** Lead dust on surfaces, especially in eating areas, must be controlled by HEPA vacuuming, wet clean-up, or other effective methods.
- **Hand and face washing.** Workers must have washing facilities with soap and clean water.
- **Training.** Workers must receive training on lead hazards and how to protect themselves including:
  - Requirements of Section 1532.1
  - Nature of the operations — scraping, demolition etc.
  - Respiratory protection
  - Medical surveillance and removal
  - Engineering controls—vacuum with HEPA filter, etc.
  - Good work practices – eat in area free of lead, etc.
  - Let employees know of their rights to their records
  - Notify employees in writing of the blood-lead test results within 5 days of receiving the results.

- **Using proper respirators.** For certain highly hazardous tasks, called trigger tasks, special protective measures must be taken—including specified respirators—until the employer determines that worker airborne exposures to lead are below levels specified in Section 1532.1:

Contacting Cal/OSHA Consultation Service

Consultation Programs:
- [http://www.dir.ca.gov/dosh/consultation.html](http://www.dir.ca.gov/dosh/consultation.html)
- Toll-free Number: 1-800-963-9424

Publications:
- [http://www.dir.ca.gov/dosh/puborder.asp](http://www.dir.ca.gov/dosh/puborder.asp)

eTools:
- [http://www.dir.ca.gov/dosh/etools/etools.htm](http://www.dir.ca.gov/dosh/etools/etools.htm)

Onsite Assistance Program Area Offices

Central Valley: 559-454-1295
No. California: 916 263-0704
San Diego/Imperial: 619-767-2060
San Bernardino: 909-383-4567
Santa Fe Springs/LA/Orange: 714-562-5525

**Note:** The information provided is not meant to be either a substitute for or legal interpretation of the occupational safety and health regulations. Readers are cautioned to refer directly to Title 8 of the California Code of Regulations for detailed information regarding the regulation’s scope, specifications, and exceptions and for other requirements that may be applicable to their operations.
Level 1 trigger tasks
Any of the following with lead-containing coatings or materials: spray painting, manual demolition, manual scraping or sanding, use of heat gun, power tool cleaning with dust collection system.
Minimum required respirator: half-mask respirator with N-100, R-100 or P-100 filters.

Level 2 trigger tasks
Any of the following with lead-containing coatings or materials: using lead-containing mortar, lead burning, rivet busting, power tool cleaning without dust collection system, clean-up activities using dry expendable abrasives, abrasive blasting enclosure movement or removal.
Minimum required respirator: air-supplied hood or helmet, or loose fitting hood or helmet powered air purifying respirator with N-100, R-100 or P-100 filters.

Level 3 trigger tasks
Abrasive blasting, welding, cutting, or torch burning on structures where lead-containing coatings or materials are present.
Minimum required respirator: half-mask supplied air respirator operated in a positive pressure mode.

The Pre-Job Notification is required for all jobs involving trigger tasks.

Providing interim protective measures
Followings are the interim protective measures required for all trigger tasks until worker airborne exposures are shown to be below levels specified in Section 1532.1:
- Respirators, protective equipment and clothing
- Areas for clothes changing and hand washing
- Blood test for lead and zinc protoporphyrin (ZPP)
- Basic lead hazard, respirator, and safety training

Posting warning signs. Section 1532.1(i)(6) requires regulated areas with warning signs for all trigger tasks and any other tasks that may reasonably cause hazardous lead exposure at or above the Permissible Exposure Limit (PEL).

Using special measures for exposures above PEL.
When air sampling shows employee exposures above the PEL from any operation, the following controls are required in addition to those for the trigger tasks:
- Provide respirator protection as per 1532.1(f)
- Provide protective work clothing as per 1532.1(g)
- Provide changing and eating areas, and hand washing and showering facilities as per 1532.1(i)
- Provide medical monitoring as per 1532.1(j)
- Provide medical removal protection as per 1532.1(k)
- Employee training as per 1532.1(l)

Maintaining certification. On jobs at residential and public access buildings, workers exposed to lead above the PEL- and their supervisors - must receive state approved training and be certified by the California Dept. of Public Health Services (CDPH).

Information on lead worker certification:
Phone: 800-597-LEAD
Web: http://www.cdph.ca.gov/programs/CLPPB/

Resources
T8 CCR1532.1 http://www.dir.ca.gov/title8/1532_1.html
CDPH, Occupational Lead Poisoning Prevention Program
Website: www.cdph.ca.gov/programs/olppp
CA Toll Free: 1(866) 627-1587; Out of State: (510) 620-5740

Painting and Decorating Contractors of America
Website: www.pdca.org Phone: 703-383-0800

SSPC: Society for Protective Coatings
Website: www.sspc.org Phone: 412-281-2331

US EPA: Lead in Paint, Dust, and Soil
Website: www.epa.gov/opptintr/lead Phone:1(800) 424-LEAD

OSHA: Lead in Construction

Where can I get help?
The Cal/OSHA Consultation Service helps employers at no cost. Employers can request an industrial hygienist to come to a construction job site, show how air sampling is done and assist in employee training. The Consultation Service is independent of Cal/OSHA’s Enforcement Unit.

Frequently Asked Questions
Q. Before starting work on a job that involves disturbance of paint or other coatings, am I required to have a sample of the paint analyzed for lead content?
A. This is the best way to begin assessing the lead hazard at the jobsite. While not specifically required by the Cal/OSHA regulation, material sampling—combined with knowledge of the tasks being done—is the best indicator of the chance of high airborne lead levels, and can help guide the air sampling and exposure control efforts and the choice of required respirators.

Q. If I’m already doing air monitoring and protecting workers with respirators during tasks with high exposures, why do I also need to do blood lead and ZPP monitoring?
A. Blood lead and ZPP monitoring are tools that help assess workers’ total exposure to lead—including through ingestion, unmonitored operations, and lead contamination in the vehicle and home. It is the most important benchmark for answering the question: “Am I protecting my workers from the hazards of lead on the job?”

Q. What should my respirator program include?
A. Your respirator program must include respirator selection, medical evaluation, fit testing, and all other required elements as per Section 5144.

Q. How do I get started with a lead medical monitoring program and where do I find a physician to do this?
A. The Department of Public Health Occupational Lead Poisoning Prevention Program listed below can help you get started with your lead compliance program.