

# Lead in Construction Information for Workers

Lead is a very toxic metal that can cause damage to the brain, nervous system, kidneys, reproductive system, and other health problems.

Lead can enter the body by inhaling it from the air or ingesting it, for example, by eating with lead-contaminated hands.

Construction workers can become exposed to lead while at work. Lead can be present in a wide range of materials, including paints and other coatings, lead mortars, and base metals. Certain tasks, such as grinding, sanding, welding, and torch cutting, can produce high exposure levels.

Workers can take lead home on their bodies, clothing, or shoes, which can accidentally poison their families, especially children.

## What do employers need to do?

Cal/OSHA requires construction employers to keep employees' exposures below the permissible exposure limit. There are two exposure levels workers need to be aware of:

- Action level (AL): 2 micrograms of lead per cubic meter of air ( $2 \mu\text{g}/\text{m}^3$ ) calculated as an 8-hour time-weighted average (TWA).
- Permissible exposure limit (PEL): 10 micrograms of lead per cubic meter of air ( $10 \mu\text{g}/\text{m}^3$ ) calculated as an 8-hour TWA.

An 8-hour TWA is a concentration equivalent to the full-shift lead exposure averaged over 8 hours.

## Determine exposures to lead

Employers are required to determine what work activities may expose their employees to lead and at what exposure levels. This typically involves performing full-shift personal air monitoring, and they may collect a sample for one employee or all employees of a certain job classification.

You and your designated representatives must be allowed the opportunity to observe any monitoring. If observation requires entering



hazardous areas, your employer must provide protective clothing and respiratory protection. They must also provide access to the monitoring results.

## Provide protections

Employers must use controls to ensure that employee exposures are not above the PEL. For all employees exposed to lead, employers must provide basic lead training, safe housekeeping, and clean washing facilities, and must prohibit eating, drinking and smoking in work areas.

For employees performing higher-exposure tasks, called trigger tasks (see box), employers must provide interim protections even before they determine employee exposure levels. The interim protections include respiratory protection, personal protective clothing and equipment, change areas, eating areas, regulated areas, medical surveillance, and training. Showers are also required for Level 3 trigger tasks, as well as monthly blood lead testing and limited time allowed for abrasive blasting work.

If exposure levels are found to be above the PEL, the employer must add more controls to reduce lead exposures to below the PEL:

- Engineering controls, such as mechanical ventilation to minimize lead levels.
- Upgraded work practices.
- Respiratory protection based on actual exposure levels if other controls aren't enough.

## Trigger Tasks

Trigger tasks are work activities that are likely to expose workers to levels of lead above the PEL, so employers must provide specific interim protections to employees performing these tasks. There are three levels of trigger tasks, based on their assumed level of exposure, with Level 3 tasks having the highest assumed exposures.

### Level 1 Trigger Tasks: (assume 10 to 100 $\mu\text{g}/\text{m}^3$ )

- Where lead-containing coatings or paint are present:
  - Manual demolition of structures.
  - Manual scraping.
  - Heat gun applications.

### Trigger Tasks Not Listed: (assume above 10 $\mu\text{g}/\text{m}^3$ )

This includes any tasks not listed in the Level 1 list where the employer may expect employee exposures to be more than the PEL.

### Level 2 Trigger Tasks: (assume more than 100 $\mu\text{g}/\text{m}^3$ and less than or equal to 500 $\mu\text{g}/\text{m}^3$ )

- Where lead-containing coatings or paint are present:
  - Manual sanding.
  - Power tool cleaning, grinding, or sanding with dust collection systems.
- Spray painting with lead paint.

### Level 3 Trigger Tasks: (assume more than 500 $\mu\text{g}/\text{m}^3$ )

- Using lead-containing mortar or lead burning.
- Where lead-containing coatings or paint are present:
  - Rivet busting.
  - Power tool cleaning, grinding, or sanding without dust collection systems.
- Cleanup activities where dry expendable abrasives are used.
- Abrasive blasting enclosure movement and removal.
- Abrasive blasting.
- Welding.
- Torch cutting.
- Torch burning.

## What can workers do?

Workers can reduce their lead exposures by using provided protective measures and good hygiene and housekeeping practices. These include:

- If needed, wear respirators properly.
- Wear protective clothing.
  - Remove contaminated clothing at work. Don't take it home or put it in your car.
  - Don't store them in the same place you keep your street clothes when you change.
- Wash hands, exposed arms, and face with special cleansing product:
  - Before eating, drinking, smoking, or applying cosmetics.
  - At the end of the shift.
- Don't eat, drink, smoke, or apply cosmetics in areas where lead is present.
- Use vacuums equipped with HEPA filters to clean lead dust and empty them in a way that doesn't spread lead.
- Shower at the end of the shift if required.

## What if your blood lead level is high?

Depending on your lead exposure levels, your employer may need to put you in a medical surveillance program, including blood lead testing.

If the tests show your blood lead levels are higher than a certain limit, they are required to make changes to lower your blood lead level. In addition, they may need to temporarily remove you from certain job tasks involving lead.

If you are medically removed from exposure to lead, your employer must provide you medical removal protection benefits for up to 18 months, such as maintaining normal pay and seniority, and right to former job status when returning to work.

## Resources

- [Cal/OSHA Lead in Construction webpage](#)
- [OSHA Lead in Construction Quick Card](#)
- [California Department of Public Health, Occupational Lead Poisoning Program: Information for Workers and Employers](#)

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This document is available with active links at [www.dir.ca.gov/dosh/dosh\\_publications](http://www.dir.ca.gov/dosh/dosh_publications)

For assistance regarding this subject matter, employers may contact

**Cal/OSHA Consultation Services** at 1-800-963-9424 or [InfoCons@dir.ca.gov](mailto:InfoCons@dir.ca.gov)

[www.dir.ca.gov/dosh/consultation.html](http://www.dir.ca.gov/dosh/consultation.html)

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