

Lead in Construction

Title 8 California Code of Regulations (T8 CCR) **section 1532.1** establishes required lead safety measures for construction employers. Implementing these measures, and following industry best practices, can reduce the risk of employee lead poisoning.

This fact sheet provides an overview—not all the requirements—of section 1532.1. The information provided is not meant to be a substitute for, or a legal interpretation of, the regulation. Readers are cautioned to refer directly to section 1532.1 for detailed information regarding the regulation’s scope, specifications, exceptions, and other requirements that may be applicable to their operations.

Why should employers be concerned?

- Lead is highly toxic. It can cause damage to the brain, kidneys, reproductive system, and other health problems.
- Lead poisoning occurs through ingestion and inhalation, even at a very low level of exposure.
- There is a high risk of construction workers carrying lead home on their bodies, clothing, and shoes. This can poison family members, particularly children.

Failing to protect employees from lead exposure can have serious consequences, such as:

- Compromised employee health.
- Medical and wage costs when a lead-poisoned employee must be removed from work.
- Costly job shutdowns.
- Reputation costs as clients value contractors who protect their employees and the job site environment.
- Substantial Cal/OSHA fines.



What do employers need to do?

Identify the presence of lead

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 airborne exposure levels.

- Consider the age of the building or structure and the materials and coatings that may contain lead.
- Ask the property owner for relevant information.
- Check the Safety Data Sheets (SDSs) of the materials in use.
- If in doubt, take samples and have them tested for lead content.

Send samples of materials to a laboratory for lead analysis. Only use laboratories accredited by the **U.S. EPA National Lead Laboratory Accreditation Program**.

Testing methods for lead must meet requirements of T8CCR section 1532.1(d)(9).

Regularly assess employee exposure levels

Action Level (AL): 30 micrograms per cubic meter of air (30 ug/m³) calculated as an 8-hour time-weighted average.

Permissible Exposure Level (PEL): 50 ug/m³ calculated as an 8-hour time-weighted average.

Section 1532.1(d) requires employers to determine if any employee may be exposed to lead at or above the AL. This typically involves personal full-shift air sampling of employees whose lead exposures represent each job classification, in each work area, for each shift. This information determines the protective measures needed, including the type of respirator that must be worn.

Employee exposure assessments may need to be repeated regularly, depending on the results. Affected employees, or their representatives must be allowed to observe any exposure monitoring conducted.

Reduce employee lead exposure levels

The employer must implement engineering and work practice controls, including administrative controls, to reduce airborne lead exposure to below the PEL, to the extent feasible. Where not feasible, exposures must be reduced as low as possible. Some key exposure-control measures include, but are not limited to:

- **Mechanical ventilation** [1532.1(e)(3)]. Evaluate as necessary to maintain effectiveness.
- **Administrative controls** [1532.1(e)(4)]. Job rotation schedule to reduce the duration of exposure.
- **Respiratory protection** [1532.1(f)(1)(B)]. Implement a respiratory protection program when engineering, work practices, and administrative controls are insufficient or not feasible.
 - HEPA (High-Efficiency Particulate Air) filters are required when air-purifying respirators are used.
 - Upon an Employee's request, an Employer

must provide a powered, air-purifying respirator (PAPR) when an employee chooses to use this type of respirator and the respirator will provide adequate protection.

- **Protective work clothing and equipment** [1532.1(g)]. Provide, maintain, and ensure use as required.
- **Housekeeping** [1532.1(h)]. Regardless of employee airborne exposure levels, all surfaces must be maintained as free as practicable of lead accumulations, especially in eating areas. Where possible:
 - Clean surfaces by using vacuums equipped with HEPA filters. Shoveling, dry or wet sweeping, and brushing are only allowed when vacuuming or other equally effective methods are ineffective.
 - Prohibit the use of compressed air unless in conjunction with an adequate ventilation system.
- **Hygiene facilities, practices, and regulated areas** [1532.1(i)].
 - No consumption of food, beverages, tobacco products, or application of cosmetics
 - Change areas
 - Showers
 - Eating facilities
 - Hand washing facilities
 - Posted regulated areas
- **Hazard Communication and training** [1532.1(l)]. Ensure all workers exposed to lead are informed—through effective implementation of **section 5194 Hazard Communication requirements**—of the health hazards of lead.

Ensure all employees exposed to lead at or above the AL on any day, or lead compounds that may cause skin or eye irritation, are trained according to section 1532.1(l)(2) requirements, which includes the information in **Appendix B**.

Employees and supervisors engaged in lead-related construction work as defined in **Title 17, CCR, section 35040**, and who have been shown to be exposed to lead at or above the PEL must be trained by an accredited training provider and certified by the California Department of Health Services (section 1532.1(l)(3)).

Information on lead worker certification
(800-597-LEAD).

- **Medical surveillance** [1532.1(j) & (k)]. The employer must implement medical surveillance for employees exposed to lead at or above the AL on any day. This includes:
 - Biological monitoring—blood sampling and employee notification.
 - Medical examination and consultations.
 - Medical removal protection, where necessary.
- **Interim protection measures for employees doing high-exposure tasks.** [1532.1(d)(2)]. Until employee exposures to airborne lead have been adequately determined, employers must ensure interim employee protection measures are implemented.

There are three categories of tasks, based on their assumed level of employee exposure. The assumed exposure level determines the type of required respiratory protection as outlined in Table 1 of section 5144(d)(3).

Category 1 Tasks: Manual demolition of structures, scraping, and sanding, heat gun applications, power tool cleaning with dust collection systems, and spray painting with lead paint. This also includes any tasks not listed above where the employer may expect employee exposures to be more than the PEL [1532.1(d)(2)(A) & (B)]:

- Assume employee exposure is above the PEL (50 µg/m³) but not more than 10 times the PEL (500 µg/m³).

Category 2 Tasks: Using a lead-containing mortar, lead burning, rivet busting, power tool cleaning without dust collection system, clean-up activities using dry expendable abrasives, and abrasive blasting enclosure movement or removal [1532.1(d)(2)(C)]:

- Assume employee exposure is more than 10 times the PEL (500 µg/m³).

Category 3 Tasks: Abrasive blasting, welding, cutting, or torch burning [1532.1(d)(2)(D)]:

- Assume employee exposure is more than 50 times the PEL (2500 µg/m³).

In addition to the specific required respiratory protection, the employer must implement the following interim protection measures for all listed tasks and for any others the employer expects will result in employee exposures over the PEL:

- Protective equipment and clothing [1532.1(g)].
- Areas for clothes changing [1532.1(i)(2)]; and hand washing [1532.1(i)(5)].
- Blood test for lead and zinc protoporphyrin (ZPP) [1532.1(j)(1)(A)].
- Basic lead hazard, respirator, and safety training [1532.1(l)(1)(A); (l)(2)(C) regarding use of respirators; and **1510 Safety Instruction for Employees**].
- Posted regulated areas [1532.1(i)(6)].

Written, up-to-date compliance program and pre-job notifications

Before the job commences, employers must establish and implement a written compliance program that meets section 1532.1(e)(2) requirements, including a description of arrangements made among contractors on multi-contractor sites to inform affected employees of potential exposure to lead and regulated areas. In addition, a written **Pre-Job Notification** must be provided to the nearest **Cal/OSHA office** within 24 hours of the start of the work, as required by section 1532.1(p).

Resources

Cal/OSHA

- **T8 CCR1532.1**
- **Cal/OSHA Consultation Service** (800-963-9424)
- **Publications:**

**California Department of Public Health,
Occupational Lead Poisoning Prevention
Program** (866- 627-1587)

OSHA

- **Lead in Construction Guide**
- **Lead in Construction Quick Card**
- **Protecting Workers from Lead Hazards Fact Sheet**

**Painting and Decorating Contractors of
America** (703-383-0800)

Society for Protective Coatings (412-281-2331)

US EPA: Lead in Paint, Dust, and Soil (800-424-LEAD)

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This document is available with active links at www.dir.ca.gov/dosh/puborder.asp
For assistance regarding this subject matter, employers may contact
Cal/OSHA Consultation Services at 1-800-963-9424 or InfoCons@dir.ca.gov
www.dir.ca.gov/dosh/consultation.html

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