

STRUCTURE CONSTRUCTION LEAD COMPLIANCE PLAN

This lead compliance plan (LCP) provides guidance to the Structure Construction (SC) personnel who work on bridges and other structures that are coated with paint containing lead, particularly during operations that disturb that paint. This LCP also meets the requirements of the Cal/OSHA *Construction Safety Orders*, [Section 1532.1, Lead](#). Note that the *Construction Safety Orders*, are found in *California Code of Regulations*, Title 8, Division 1, Chapter 4, Subchapter 4.

All SC personnel who perform work on a structure or bridge, and are exposed to paint being disturbed, must follow the requirements of this LCP unless the paint system and underlying residual paints have been tested and found to contain no lead. If the paint content is not known, then it will be presumed to contain lead until tested.

This LCP addresses lead related hazards and does not replace the [Caltrans Injury and Illness Prevention Program \(IIPP\)](#), the [SC Code of Safe Practices](#), or other location specific safety rules and regulations. Note that the *IIPP* is the first chapter found in the [Caltrans Employee Safety Manual](#).

1 - Roles and Responsibilities

1.1 Area Construction Managers (ACM)

1. Ensure that SC staff receive the necessary health and safety training to work around lead-containing materials safely, and that such training is renewed annually as required.
2. Ensure that the required personal protective equipment (PPE) is available to SC staff.
3. Ensure that the medical surveillance program is provided when required based on the level of exposure.
4. Conduct accident investigations as needed with the first-line supervisor, SC Headquarters, and the Office of Safety and Health, and make recommendations on any necessary actions.
5. Periodically review the performance of first-line supervisors to ensure that the actions required by the LCP are being completed.

1.2 First-Line Supervisors (Bridge Construction Engineers)

1. Ensure that all SC staff working around lead containing materials are trained in the provisions of the LCP.
2. Ensure that SC staff follow the provisions of the LCP and other applicable safety and health rules related to lead.

3. Ensure that SC staff follow the respiratory protection requirements and wear their respiratory protection properly.
4. Ensure that the PPE used by SC staff exposed to lead is appropriate for the actual exposure.
5. Provide regular pre-job safety meetings to discuss lead safety issues and document attendance of the same with [Form PM-S-0110](#), *Safety Meeting Report*.
6. Ensure that SC staff follow the proper decontamination and hygiene procedures.
7. Conduct routine health and safety audits and document those findings, including recommendations for modification of the LCP if needed, and take immediate action to correct any unsafe conditions.
8. Ensure that lead waste is disposed of in compliance with local, state, and federal regulations.

Note - the above items are primarily the responsibility of the first-line supervisor; however, it is expected that SC staff assigned as lead workers will assist the first-line supervisor.

1.3 SC Staff

1. Complete the necessary health and safety training to work around lead-containing materials safely.
2. Follow the provisions of the LCP and other applicable safety and health rules related to lead.
3. Use the required PPE properly.
4. Report any unsafe condition or equipment to their supervisor immediately.
5. Follow proper decontamination and hygiene procedures.

1.4 District/Headquarters Office of Safety and Health and/or Construction Safety Liaison Coordinators

1. Provide oversight of the LCP and coordinate industrial hygiene monitoring for lead work to evaluate SC staff exposures.

1.5 SC Safety Liaison

1. Receive, review, and report, within 5 days of receipt, the results of Blood Lead Level (BLL) testing to the tested SC staff and to the first-line supervisor.
 - a. Provide a *Structure Construction Lead Compliance Memorandum to SC*

staff if their testing revealed blood lead levels of 10 micrograms/deciliter or above (additional details provided in Section 10, SC Staff Sampling Intervals).

2. Receive from the ACM, review, file, and maintain for 3 years the BCE's quarterly reviews of SC staff's compliance with this LCP.
3. Participate in assessment interviews if BLL is greater than 20 micrograms/deciliter.
4. Provide technical guidance on lead issues.
5. Review LCP biannually and initiate appropriate changes.
6. Facilitate lead training as requested by ACMs and BCEs.

Refer to the [SC intranet](#) for the current SC Safety Liaison assignment.

2 - Activities with Lead Exposure

The following activities performed by SC staff could involve exposure to paint containing lead on steel bridges and structures:

1. Inspection of surface preparation conducted by the Contractor prior to painting, including measurement of areas and examination of cleaned surfaces.
2. Entering the Contractor's lead paint containment area.
3. Inspection of new and old paint on the structure.
4. Inspection of the Contractor's lead paint clean up and disposal operations.
5. Onsite inspection of contract work.
6. Disturbance of lead contaminated soil under or near existing structures (coordinate with District Construction to see how this topic is addressed in their lead compliance plan as outlined in the *Contract Specifications*).
7. Inspection of seismic retrofit projects, including removal and replacement of structural steel and paint.
8. Activities that disturb aerially deposited lead debris on girder flanges, the tops of bent caps, and inside bridge cells and towers.

3 - Expected Exposure Level

Initial monitoring, conducted on operations similar to those listed above, indicates that expected SC staff's exposure to airborne lead is well below the [action level of 30 micrograms per cubic meter](#) of air [8 Hour Time Weighted Average (TWA)]. If the SC staff's exposure is below the action level, the requirements of the LCP are dramatically reduced.

4 - SC Staff Training

SC staff who work on the activities listed above will be trained in the following topics prior to starting work:

1. Lead health hazards
2. Contents of Cal/OSHA *Construction Safety Orders*, [Section 1532.1](#), *Lead*
3. Operations that could result in lead exposures
4. Medical surveillance program
5. Medical removal protection
6. Chelating agent use
7. Applicable engineering controls
8. Contents of this SC LCP
9. Required personal hygiene and decontamination practices
10. Rights to access medical and exposure monitoring records
11. Purpose, selection, proper use, and limitations of respiratory protective devices
12. Hazardous materials or products.

Qualified trainers, in cooperation with the District/Headquarters Office of Safety and Health, and Structure Construction, will provide training. Update this training annually if lead exposure continues. Refer to the project *Special Provisions*, as the Contractor may be required to provide this training.

5 - Exposure Control Methods

The SC practice is to minimize SC staff's exposures to lead using engineering and administrative controls. In accordance with this practice, SC staff will not enter the Contractor's containment area during any operation that disturbs the paint containing lead. Additionally, SC staff will not enter the containment area when the Contractor stops work, unless it has been cleaned as outlined below, and the proper PPE is worn.

SC staff will position themselves away from active removal or clean-up operations to minimize their exposure to lead. To assist in the control of lead exposures to workers during work involving disturbance of paint containing lead, the following work areas or zones will be established:

Containment Area (lead work area): this is the area where actual lead paint disturbance and cleanup is taking place. It includes the areas where lead dust and paint chips accumulate during work.

Cleanup Area: this is the transition area between the actual work area and the support areas (where no lead exposure exists). This zone is located outside of the actual lead work area and includes the blasting support equipment, the initial decontamination area, transportation vehicles to the change room/decontamination trailer and support area, and the dirty side of the change room/decontamination trailer.

Support Area: these areas are the locations where no lead exposure exists. It includes lunchrooms, offices, toilets, crew rooms, the clean side of the change room/decontamination trailer, SC staff's personal transportation, and all locations after final decontamination.

Tarps are used in containment areas to contain lead emissions and minimize contamination of surrounding areas. Verify a sign is posted at the entrance to lead work areas as shown in Figure 1 below.

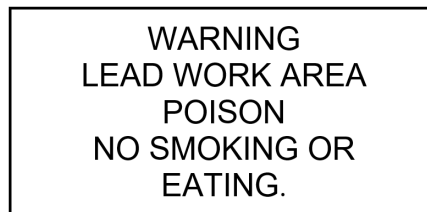


Figure 1. Sign posted at entrance to lead work areas

Access into the lead work area will be restricted to authorized personnel wearing the required PPE.

These regulated areas are required under the Cal/OSHA *Construction Safety Orders*, Section 1532.1, *Lead*. These areas are also addressed in the Contractor's LCP. The Contractor will establish them and provide the necessary signs, clean-up equipment (i.e., tarps, HEPA vacuum, etc.), and decontamination facilities (hand wash facilities, etc.). If inspection activities by SC staff occur outside of the Contractor's normal working hours, these items are still required. Discuss with your first-line supervisor/lead worker any inspection activities that will occur outside the Contractor's normal working hours. You may need to reschedule these inspection activities.

Daily cleaning of the lead work area is required to minimize the accumulation of lead containing materials. HEPA (High Efficiency Particulate Air filter) vacuums or wet wash

methods that minimize dust are required. Do not use methods that create dust, such as wet or dry sweeping, shoveling, compressed air blown down, etc.

(Exception: Those locations where a full enclosure, a negative pressure air ventilation system, and air supplied respiratory protection are used.)

Tarps and other materials used for containment will also be HEPA vacuumed or wet washed before taken down or moved. The Contractor's personnel will perform the clean-up operations.

6 - Work Procedures

SC personnel exposed to lead containing materials will follow the work procedures, decontamination procedures, and PPE requirements listed in Attachment 2, *Structure Construction - Lead Compliance Program Matrix*.

7 - Personal Protective Equipment

SC staff entering the containment or clean up areas will wear coveralls (cloth and/or Tyvek, depending on work activity and expected level of contamination) over their work clothes. Gloves are required to minimize skin contamination. Wear rubber boots or work shoes in the lead work area to aid in decontamination. At the end of the work shift, remove, properly store, or clean coveralls, protective equipment, and contaminated shoes before leaving the clean-up area. The *Contract Specifications* require the Contractor to provide coveralls for SC personnel. Review your project *Special Provisions* early to determine if sufficient coveralls are provided for SC staff. It might be necessary to write a change order to increase the number of coveralls provided.

SC staff must wear respiratory protection equipment in accordance with the Lead Compliance Program Matrix. They will also comply with the *Caltrans Employee Safety Manual*, [Chapter 15](#), *Caltrans Respiratory Protection Program*. A respiratory medical evaluation and a respirator fit testing will be required annually. Clean and check the fitting on the respirator each day. SC practice is that SC staff cannot wear respirators requiring a tight facepiece seal if they have facial hair in the seal area. SC staff with facial hair below their upper lip will be required to shave.

Any SC staff exposed to lead may request a respirator regardless of the exposure level. They must comply with all provisions of the Caltrans Respiratory Protection Program.

8 - Entry/Exit and Decontamination

To minimize cross contamination and taking home lead containing materials, use the following entry/exit and decontamination procedures. The specifics of the entry/exit and decontamination procedures for each project are also covered in the LCP submitted by the Contractor or subcontractor. The following are the minimum entry/exit procedures for SC staff:

1. SC staff will enter the cleanup area from the support area through an established location (preferably at the decontamination facilities). Wear work clothes and shoes, coveralls, and appropriate personal protective equipment into the lead work clean-up area. Before moving into the containment area (if necessary and allowable), put on the required respiratory protection equipment.
2. When workers leave the containment area, they must be decontaminated to remove lead residue from their protective equipment and outer clothing. Use a HEPA vacuum or water wash (for rain suits) just before or after leaving the containment area. Do not blow down or shake clothing to remove lead dust. Remove outer protective clothing and other protective equipment. Vacuum cloth coveralls or work clothes and clean shoes if contaminated. Remove Tyvek coveralls inside out and place in bags or buckets for disposal. Do not eat, drink, or smoke in the cleanup area.
3. To leave the cleanup area and enter the support area, go to the established entry/exit decontamination location and wash face, arms, hands, and neck with soap and water. Remove coveralls and, if necessary, vacuum or remove contaminated inner work clothing before entering lunchroom, toilets, offices, etc. in the support area. Do not wear coveralls and contaminated work clothing into lunchrooms, vehicles, or the support areas.
4. At the end of shift, workers must decontaminate in accordance with the Lead Compliance Program Matrix, before entering the support area and going home. As a minimum, all SC staff must wash hands, face, neck, and arms before leaving. If work clothes are contaminated, clean or change before leaving the site. Store contaminated clothing or coveralls in plastic bags to prevent cross contamination.
5. Cloth coveralls must be changed and laundered at least weekly. They will be stored in sealed and labeled plastic bags until laundered. If washed at home, wash separately from the family's clothes. If laundered commercially, notify the laundry facility that the clothing is contaminated with lead. Change Tyvek coveralls daily or as needed. As discussed previously, the *Special Provisions* require the Contractor to provide coveralls for SC staff.
6. Decontamination areas, change rooms, cars, etc. that could be contaminated with lead containing materials must be cleaned and decontaminated by a HEPA

vacuum and/or wet methods on a weekly basis at a minimum, to minimize lead contamination.

9 - Medical Surveillance Program

All SC personnel who are exposed to lead paint removal (i.e., structure re-painting jobs) will be enrolled in the medical surveillance program, which includes blood sampling and analysis for lead (BLL) and zinc protoporphyrin (ZPP) levels. SC personnel must fill out [Form SC-0602](#), *SC Medical Testing Authorization Form*, and contact the SC Safety Liaison to arrange for medical surveillance or respirator physicals (see below for sampling intervals).

The results of this monitoring will be reported to the SC Safety Liaison and provided simultaneously to the tested SC staff and the SC staff's first-line supervisor within 5 days.

Cal/OSHA regulations require the employer to maintain SC staff medical records for 30 years, therefore no deviation is allowed from the following procedure when arranging for medical surveillance or respirator medical evaluations:

1. The supervisor selects a local laboratory approved by Cal/OSHA.
2. The laboratory contacts the SC Safety Liaison to verify the work to be done and to arrange payment.
3. The supervisor completes a Form SC-0602, *SC Medical Testing Authorization Form*, for each SC staff going for lab work.
4. A copy of the signed authorization form is emailed to SC Headquarters (HQ) in Sacramento (Attn: SC Safety Liaison).
5. The SC staff presents and surrenders the authorization form at the laboratory.
 - a. The laboratory emails the results and the invoice directly to SC HQ in Sacramento.
6. SC HQ in Sacramento processes the invoice to Accounts Payable.
7. Results are relayed via e-mail or phone to the SC staff, the supervisor, and to the Office of Safety & Health.
8. The original results will remain on file with SC HQ in Sacramento.

10 – SC Staff Sampling Intervals

The following are the minimum sampling intervals for SC staff:

1. No prior sampling: Sample before the job and at the end of the job, at 6 months and at 12 months for the first year, and then annually.

2. Prior sampling, but not within last 2 years: Sample before the job and at the end of the job, at 6 months and at 12 months for the first year, and then annually.
3. Current sampling (within last 2 years): Sample at the end of the job and annually.

Note: Sampling will continue as long as SC staff exposure exists. If lead work is completed and no further exposure is expected, end of job sampling is required.

SC staff with blood lead levels at 10 micrograms/deciliter or above will be sent a *Structure Construction Lead Compliance Memorandum* and will be required to have their blood sampled every 6 months until their blood lead level drops below 10 micrograms/deciliter. See Attachment 3, *Structure Construction Lead Compliance Memorandum*, for a sample memorandum.

However, because the half-life of lead is 30 days, the SC staff will be asked to retest in 30 days. If SC staff has zero exposure for 30 days, the BLL should drop from 10 micrograms/deciliter to 5 micrograms/deciliter.

During this 30 days SC staff may continue with assigned duties. However, SC staff, the lead worker, and the supervisor must pay strict attention to the provisions of the LCP, and be aware of all sources of lead exposure. There may be lead exposure at home as well as at work. SC staff must follow the basic hygiene practice of washing hands and face before eating, drinking, or smoking.

The SC Lead Compliance mandates that employees with blood lead levels over 20 micrograms/deciliter will be transferred to work assignments with no lead exposure until subsequent monitoring shows their BLL has fallen below 10 micrograms/deciliter.

If BLL exceeds 20 micrograms/deciliter, conduct an assessment interview with the first and second-line supervisors, the Office of Safety & Health, and the SC Safety Liaison to determine if changes to the LCP are required.

Perform the blood lead sampling under the direction of a California licensed physician, and the blood analysis must be performed at a Cal-EPA/DHS accredited laboratory. The employee's ACM is responsible to ensure that the medical surveillance program is conducted.

11 - SC Lead Compliance Plan Evaluation

Bridge Construction Engineers (BCE) (first-line supervisors) and Structure Representatives (lead workers) are responsible to ensure that employees are following the provisions of this LCP. The BCE (first-line supervisor) must conduct quarterly

reviews of employees exposed to lead containing materials to evaluate their compliance with this LCP. Such reviews will be recorded and forwarded to the appropriate ACM, who is responsible to ensure that such reviews are being conducted. The ACMs will forward these reviews to the SC Safety Liaison, who will maintain them for three years. The results will be used to make needed changes to this LCP and to monitor and schedule SC lead training. This LCP must be reviewed and updated as necessary every 6 months.