

<i>Potential Hazard Review</i>	
<u>Chemical Hazards</u>	
<ul style="list-style-type: none">• Inhalation: Inflammation of the lungs, respiratory failure, death• Ingestion: Overexposure	
<i>Related Safe Work Practices</i>	
<ul style="list-style-type: none">• Hazardous Substances• Lifting, Body Mechanics, and Ergonomics	
<i>Personal Protective Equipment</i>	
<ul style="list-style-type: none">• Disposable gloves• Protective eyewear	
<i>Authority</i>	
<ul style="list-style-type: none">• CCR Title 8 Section 1532.1	
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This Safe Work Practice (SWP) addresses the hazards related to lead and is organized into the following areas:

- A. General Lead Hazard Awareness (for all employees)
- B. Structural Maintenance Division Staff Protocols for Sampling Potentially Lead Containing Materials
- C. Structural Maintenance Division Staff Protocols for Small Scale, Short Duration Operations and Maintenance Work ($\leq 10 \text{ ft}^2$)

This SWP is dedicated to helping you avoid an injury or illness from known hazards and their consequences - overexposure to lead.

You are advised to follow these recommendations, read and follow this SWP and any related SWPs, complete any required or recommended training, and to obtain advice from a Qualified Person if you have any questions.

A Qualified Person is a person designated by the employer; and by reason of training, experience, or instruction who has demonstrated the ability to perform safely all assigned duties; and, when required is properly licensed in accordance with federal, state, or local laws and regulations.

All tasks for Sections B and C require that you:

- Use equipment in accordance with the guidelines set forth by the manufacturer. This includes following all signs and labels and reviewing any manufacturer's operating manuals. If the instructions provided in the operating manual conflict with this SWP, then follow the instructions in the manual. The manufacturer's instructions prevail over this SWP.
- Review the safety data sheets (SDSs) for each product to be used.
- Have completed training on:
 - This SWP, those SWPs listed above as related. Training on SWPs must be completed before performing the work. It is also recommended that you complete refresher training on SWPs every two years.
 - Initial and refresher training as needed for Lead Sampling Technician if you are SMD staff taking samples of building materials for the determination of lead content.
 - Initial and refresher training as needed for Small Scale, Short Duration Operations and Maintenance Work ($\leq 10 \text{ ft}^2$) for SMD staff that will performing work involving disturbance of lead or presumed lead containing materials.
- Other requirements include completion and documentation of:
 - A baseline blood lead medical exam. Workers who are or may be exposed at or above the action level for more than 30 days in any consecutive 12 months shall be enrolled in a medical surveillance program. The program is supervised by a board-certified physician with the Zuckerberg San Francisco General Hospital, Occupational Health Service Clinic.
 - A respirator qualification exam and fit test/training (within the past year).

A. GENERAL LEAD HAZARD AWARENESS

1. Where does lead dust come from?
 - a. Gradual deterioration of surfaces coated with lead paints or other lead coatings, such as varnish.
 - b. Maintenance and renovation activities that disturb lead paint and coatings.
 - c. Disintegrating paint chips from peeling painted surfaces.
 - d. Lead dust collects on horizontal surfaces such as window sills, trim and baseboard, and the perimeters of floors.
2. How can people get lead in their bodies?

- a. Putting hands or other objects covered with lead dust in their mouths.
 - b. Eating paint chips or soils that contain lead.
 - c. Breathing lead dust (especially during renovations that disturb painted surfaces).
 - d. Drinking water containing lead.
3. Why is lead potentially more dangerous to children than adults?
- a. Babies and young children often put their hands or other objects in their mouths. These objects can have lead dust on them.
 - b. Children's brains and nervous systems are more sensitive to the damaging effects of lead.
 - c. Lead effects in children can include: damage to the brain and nervous system, behavior and learning problems (such as hyperactivity), slowed growth, hearing problems, and headaches.
4. How can lead be harmful to adults?
- a. Difficulties during pregnancy,
 - b. Other reproductive problems (in both men and women),
 - c. High blood pressure,
 - d. Digestive problems,
 - e. Nerve disorders,
 - f. Memory and concentration problems, and
 - g. Muscle and joint pain.
5. How do I know if dust or debris contains lead?
- a. At RPD, all painted or coated surfaces are assumed to contain lead, unless appropriate and sufficient sampling and laboratory analysis prove otherwise. Therefore, following proper procedures is expected for *any and all work* that may involve *potential or assumed* lead-containing materials or surfaces.
 - b. To find out what is known about a particular facility, visit the EHS Intranet site (sfrecpark/OEHS/oehs1.htm) and click on *Facilities*. From there, you may look by facility for those sites which may have been tested for lead. If the site is not on the website, then you must assume it contains lead until proven otherwise.
6. What is being done at Recreation and Park?
- a. Lead hazard surveys are conducted to pro-actively identify lead hazards and abatement needs at our facilities. These are on-going.
 - b. Construction, Maintenance and Capital Projects have responsibility for ensuring that any of their own projects also are done in a manner which is compliant with regulatory and department requirements (see Construction, Maintenance and Capital Projects under the Facilities tab on the EHS Intranet site for those requirements).
 - c. In the case of partial repair, remodel or renovation of a facility, lead hazard survey and abatement work may be limited to the materials being disturbed or surfaces

- contaminated by abatement of those materials so that the project is not unreasonably burdened. Where reasonable, the project will incorporate lead hazard surveys to ensure the proactive identification of lead hazards in Recreation and Park facilities.
- d. Special training and certification, as well as specialized work practices are required to perform the following high and low hazard lead tasks on painted or coated surfaces:
 - i. Mechanical grinding, sanding, or chipping,
 - ii. Manual scraping, sanding, chipping, or planing,
 - iii. Chemical stripping,
 - iv. Incidental drilling or cutting,
 - v. Demolition or removal of materials with intact painted or coated surfaces,
 - vi. The use of a torch, flame or heat gun,
 - vii. Open abrasive or high pressure water blasting,
 - viii. Dry machine sanding (without High Efficiency Particulate Air (HEPA) equipment),
 - ix. Dry sweeping or scraping,
 - x. The use of wet methods, in general, near electrical circuits.

B. STRUCTURAL MAINTENANCE DIVISION STAFF PROTOCOLS FOR SAMPLING POTENTIALLY LEAD CONTAINING MATERIALS

7. Paint can be defined as follows:
 - a. If the amount of lead is equal to or exceeds one milligram per square centimeter (1.0 mg/cm²) or more than 5,000 parts per million (ppm), then it is considered **lead-based paint**.
 - b. If the amount of lead is less than 1.0 mg/cm² or 5,000 ppm, then it is considered **lead containing paint**.
8. Unless presumed to be lead based paint, all coated surfaces must be tested for lead prior to disturbance.
 - a. Check for prior sample results in reports on the EHS Intranet [site](#) (or go to sfrecpark; Health and Safety; Facilities; Hazardous Materials Reports)
 - b. Samples can be collected by DPW/SAR; contact EHS for further assistance with this.
 - c. Sample can be collected by RPD personnel who are certified lead sampling technicians (and are current with related refresher training, follow this SWP and have valid training and credentials on file with EHS)
9. To collect bulk samples, assemble some or all of the following items as needed:
 - a. Rigid walled sampling containers (e.g. screw-top plastic centrifuge tube)
 - b. Disposable gloves
 - c. Plastic sheeting
 - d. Knife/chisel/cutter/borer/drill or other sampling tools
 - e. Wipe cloths for cleaning purposes

- f. Spackling material
 - g. Template
 - h. Ruler
 - i. Pen and labels
 - j. White paper for making paper funnels (paint chip collection trays)
 - k. Flashlight
 - l. Masking or duct tape
 - m. Trash bags
10. To collect a paint chip sample:
- a. Put on a pair of disposable gloves. A new pair is needed for each sample you collect.
 - b. Place a clean piece of plastic sheeting under the area where the sample will be collected.
 - c. Mark the collection area either using a template or freehand. A paint chip sample should be no more than 2-4 square inches in size.
 - d. Set up a paint chip sample collection tray using white paper and tape.
 - e. Remove the paint using a heat gun, cold-scraping or coring. Try to collect all layers of paint, but not the substrate.
 - f. Transfer the collected sample to the collection container.
 - g. Label the container with a unique sample number.
 - h. Remove and dispose of gloves.
 - i. Measure and record the dimensions of the sample surface area on the sampling form (will provide a link once completed).
 - j. Clean up the area with a wet wipe, then patch or repaint the area as needed.
11. To collect a soil sample:
- a. Put on a pair of disposable gloves. A new pair is needed for each sample you collect.
 - b. Collect each portion of the composite sample using the selected tool (core sampling, scoop sampling with container or scoop sampling with a spoon).
 - c. Collect 3-10 subsamples.
 - d. Don't avoid paint chips if you see them, but don't make a special effort to include them. Do avoid twigs, stones or other yard debris.
 - e. Put rigid container into a plastic bag.
 - f. Remove and dispose of gloves.
 - g. Record sample collection information on the sampling form (will provide link once completed).
12. Clean your tools in between each sample collected.
13. When all samples have been collected, clean up as needed and wash your hands with soap and water.

14. Bulk samples must be submitted to a NLLAP (National Lead Laboratory Accreditation Program) accredited laboratory for analysis using a chain of custody form provided by the laboratory.
15. Sample results:
 - a. Hold for data management piece

C. STRUCTURAL MAINTENANCE DIVISION STAFF PROTOCOLS FOR SMALL SCALE, SHORT DURATION OPERATIONS AND MAINTENANCE WORK (≤ 10 FT²)

16. Complete a Lead Compliance Plan (will insert link to online form once finalized).
17. Review the scope of work. Only the following may be done (equivalent to Cal OSHA Level 1 Trigger Tasks):
 - a. Spray painting
 - b. Manual demolition
 - c. Manual scraping or sanding
 - d. Use of heat gun
 - e. Power tool cleaning with dust collection system
18. Remove any items in the area which may become contaminated by the work.
 - a. Cover items that cannot be moved with 6 mil plastic.
19. Pre-clean the area using a combination of wet wiping and HEPA vacuuming.
20. Prep the work area:
 - a. Critical barriers will be sealed such as doors, windows or vents, to prevent dust migration during work activities where lead is disturbed.
 - b. The work area will be contained, and a poly drop cloth decontamination area established adjacent to the contained work area.
 - c. The following sign shall be used to keep people out of the work area.



21. Don personal protective equipment (PPE).
 - a. Use P100 cartridges with your respirator.

22. Begin Personal Air Monitoring.
23. Mist areas with water before sanding, scraping, drilling, cutting or disturbing paint.
24. Score paint before separating components.
25. Pry and pull apart components instead of pounding and hammering.
26. If manual wet scraping, collect paint chips at the point source.
27. Use HEPA-shrouded power tools/tools with vacuum attachments.
28. Prohibited practices include:
 - a. Open flame burning or torching
 - b. Sanding, grinding, planing, needle gunning, or blasting with power tools and equipment not equipped with a shroud and HEPA vacuum attachment.
 - c. Using a heat gun at temperatures greater than 1100 degrees Fahrenheit.
29. Remove all tools through the decon after wet wiping and HEPA vacuuming surfaces.
30. If you HEPA vacuum and wet-wipe the plastic sheeting (containment) you may reuse it, or discard it as regular waste. If cleanup of the plastic is not feasible, remove the plastic sheeting carefully from the site of impact towards the decon. Mist with water, fold dirty side in, tape shut. Dispose of as hazardous waste.
31. HEPA vacuum and remove your PPE. Place disposable PPE in a hazardous waste bag. Step into a clean area:
 - a. First remove gloves, then roll suite inside out, then shoe covers. Lastly, wipe down your respirator with wet wipes and remove.
32. HEPA vacuum and wipe down the decon. Remove the decon and dispose of it as regular waste.
33. HEPA vacuum the adjacent pathways to the work area.
34. Perform a final clean up check.
35. Gooseneck the waste bag and place on a hazardous waste label (if not pre-labeled). Call DPH for onsite pick up (415-252-3800).
36. Turn off the air sampling pump.
37. Wash hands and face prior to leaving the job site.
38. Prior to removing critical barriers or containment

- a. Conduct a clearance inspection:
 - i. Ensure there is no visible dust, paint chips or debris.
 - b. Collect dust wipe sample(s).
 - i. Collect sample(s) from the area where the lead work was done.
 - ii. Put on clean gloves and shoe covers.
 - iii. Lay out the sample area using a template or tape.
 - iv. Using ASTM-approved wipes, wipe the sample area in an overlapping "S" pattern from top to bottom. Then fold the wipe in half so that the used side is folded inward, and re-wipe the entire area in the same overlapping "S" pattern, but this time from side to side. Fold again inwards and wipe the corners. Put into a sample container.
 - v. Label the sample container.
 - vi. Record information on the sample collection form (will provide link when completed).
 - vii. Clean sampling tools.
39. Submit the air and wipe samples to a laboratory for analysis.
- a. Air sampling results
 - i. If any of the air sampling results exceed the action level of $30 \mu\text{g}/\text{m}^3$, contact EHS for the next steps (which may include medical monitoring).
 - b. Clearance wipe sample results
 - i. Wipe sample results should all be below $40 \mu\text{g}/\text{m}^2$.
 - 1. If they are not, re-clean the area using wet wipe methods and the HEPA vacuum, collect more wipe samples, and repeat until the results are acceptable.
 - 2. If they are acceptable, the space can be released for public occupancy.