

APPENDIX



MANAGEMENT OF STRUCTURES WITH LEAD AND HEAVY METAL PAINT



Standard Operating Procedure

Subject: Management of Structures with Lead and Heavy Metal Paint	Page 1 April 9, 2019
--	-------------------------

1.0 PURPOSE

This Standard Operating Procedure (SOP) has been developed to provide an overview for management of structures containing lead, chromium or other heavy metal paint located on the Central 70 (C-70) Project including sign posts, bridge rail, bridges and other structures. Various structures containing lead and heavy metal paint will be disrupted during removal and demolition activities; therefore, special precautions are required to protect workers, the public, and the environment. This SOP outlines the necessary worker safety and environmental protection procedures for compliance with the Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), and Colorado Department of Public Health and Environment (CDPHE) regulations. The Colorado Department of Transportation (CDOT), Central 70 Project Agreement under Section 250 Environmental, Health and Safety Management has additional requirements under 250.04 Heavy Metal Based Paint Management. Paint Removal and Waste Disposal work shall be performed in accordance with 29 CFR 1926.62, State and local air quality regulations, the Steel Structures Painting Council (SSPC) Guide for Containing Debris Generated During Paint Removal Operations, the Industrial Lead Paint Removal Handbook (SSPC 91-18), and the references contained within Subsection 250.4 and 250.03.

Under CDOT Project 250 Specifications, the Contractor shall contact the CDPHE, Air Pollution Control Division to ascertain if an air pollution permit is required for the cleaning or demolition work. If an air pollution permit is required, the Contractor shall obtain the permit and furnish a copy of the permit to the Engineer prior to starting cleaning or demolition activities.

Under OSHA 29 CFR 1926.62, if lead is present in your workplace in any quantity, your employer is required to make an initial determination of whether any employee's exposure to lead exceeds the OSHA action level ($30 \mu\text{g}/\text{m}^3$ averaged over an 8-hour day). This initial determination requires your employer to monitor workers' exposures unless he or she has objective data which can demonstrate conclusively that no employee will be exposed to lead in excess of the action level.

Your employer is required to develop and implement a written compliance program prior to the commencement of any job where employee exposures may reach the OSHA Permissible Exposure Limit (PEL) as an 8-hour Time Weighted Average (TWA).

2.0 DEFINITIONS

AL Action Level

Standard Operating Procedure

Subject:	Page 2
Management of Structures with Lead and Heavy Metal Paint	April 9, 2019

APR	Air-Purifying Respirator
CDOT	Colorado Department of Transportation
EPA	U.S. Environmental Protection Agency
mg/m ³	milligrams per cubic meter
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RCRA	Resource Conservation and Recovery Act
TCLP	Toxicity Characteristic Leaching Procedure
TWA	Time Weighted Average
µg/m ³	micrograms per cubic meter

3.0 OSHA REGULATIONS AND HEALTH HAZARDS ASSOCIATED WITH LEAD AND HEAVY METAL PAINT

Working with lead and heavy metal paint can have adverse health effects to workers, the public and the environment. Lead can be taken into the body by inhalation, ingestion, and by skin absorption in the case of tetraethyl lead. Worker exposure to lead can result in acute and chronic health effects ranging from headaches to dizziness, liver damage, impairment to reproductive systems, nervous system disorders such as anxiety and hyperactivity, and death.

OSHA has established a Lead in Construction Standard under 29 CFR 1926.62 with a PEL of 50 micrograms per cubic meter (µg/m³) for an 8-hour TWA and Action Level (AL) of 30 µg/m³ for an eight-hour TWA for lead. Compliance with the OSHA requirements is accomplished through the development and implementation of a written compliance program that specifies the practices and procedures to control worker exposure to lead. This SOP has been developed to summarize the work procedures required to meet the OSHA regulations. This SOP should be reviewed and followed by all site personnel performing removal and demolition of structures containing lead paint. This SOP is intended to be used in conjunction with the employer's written compliance program. OSHA has additional regulations with PELs and ALs for cadmium (29 CFR 1926.1127), for hexavalent chromium (29 CFR 1926.1126), for inorganic arsenic (29 CFR 1926.1118) and for other metals that may be contained in painted surface coatings including chromium, mercury, barium, selenium, and silver. See OSHA 29 CFR 1910.1000 Table Z-1 and Table Z-2 for established PELs. For more information, see OSHA 29 CFR 1926 (Construction Industry Standard) and 29 CFR 1910 (General Industry Standard).

4.0 WORK METHODS AND MANAGEMENT OF LEAD AND HEAVY METAL PAINT

Standard Operating Procedure

Subject: Management of Structures with Lead and Heavy Metal Paint	Page 3 April 9, 2019
---	-------------------------

For saw cutting, mechanical cutting, grinding, and/or torch cutting on lead containing paint that has not been completely removed, then an initial determination of whether any employee's exposure to lead exceeds the action level (30 ug/m³ averaged over an 8-hour day). This initial determination requires your employer to monitor workers' exposures unless he or she has objective data which can demonstrate conclusively that no employee will be exposed to lead in excess of the action level. Additional requirements including worker medical surveillance, respiratory protection/personal protective equipment (PPE), worker training, lead hazard work area warning signs, hygiene facilities, record keeping, and protection of the environment are required to comply with the OSHA Lead in Construction regulation. For more information, see the OSHA Lead in Construction Standard 29 CFR 1926.62.

Where construction and demolition operations include removal of structures containing lead and heavy metal paint, the use of a chemical paint stripper can be used to minimize the lead and heavy metal hazard. When a chemical paint stripper is used to completely remove the paint down to bare metal a minimum of four (4) inches on each side of the proposed cuts prior to cutting the structure, then some of the requirements of the OSHA Lead in Construction standard can be reduced. However, an initial determination is still required by the employer to monitor workers' exposures for any lead work of whether any employee's exposure to lead exceeds the action level (30 ug/m³ for an 8-hour TWA).

5.0 PROTECTION OF THE ENVIRONMENT

During paint stripping or mechanical removal of structures containing lead and heavy metal paint, it will be necessary to place tarps or plastic sheeting under the work area to contain paint chips and debris that may be dislodged during removal structures and components coated with lead paint. After the structural components coated with lead and heavy metal paint have been removed they shall be placed on tarps and cut into transportable sections, then shall be completely wrapped with plastic sheeting and placed on flatbed trucks or loaded into side-walled trailers or lined dumpster, covered with plastic sheeting or tarps, and removed off site.

All paint chips and corrosion residues resulting from removal operations will be containerized, labeled, transported, and disposed of in accordance with all federal, state, and local laws and regulations. Prior to beginning the work, the Contractor shall submit to the Engineer for acceptance, a detailed methods statement for capturing, testing, and disposing of the removed materials. The Engineer will have seven calendar days to review and accept or reject this methods statement.

Standard Operating Procedure

Subject: Management of Structures with Lead and Heavy Metal Paint	Page 4 April 9, 2019
---	-----------------------------

The site Project Manager, Superintendent or designee will conduct a visual inspection of the work area after the lead work is conducted to ensure that waste materials that escape containment will be collected and placed in drums for disposal. If these protection measures are inadequate, this phase of work will be halted until corrective actions are taken.

All lead and heavy metal containing debris (paint chips, slag, and PPE) shall be collected and stored in approved labeled containers and at a secure location at the site. The painted structures and drummed lead debris will be tested to determine whether it is classified as a hazardous waste. If it meets or exceeds Resource Conservation and Recovery Act (RCRA) criteria for Toxicity Characteristic Leaching Procedure (TCLP) for the eight RCRA metals including lead at 5 milligrams per liter (mg/L), then the material will be required to be transported and disposed of in accordance with U.S. Environmental Protection Agency (EPA) hazardous waste regulations (40 CFR 261).

All painted steel components which are not designated to be salvaged shall be recycled. Contractor possession of the steel for future use shall be considered a form of recycling. Prior to transport of the components off-site, the Contractor shall obtain a letter from the recipients of the painted steel components stating that they have been fully informed of the contents of the paint and are capable of handling the paint. If the Contractor is to maintain future possession of the steel, the Contractor shall supply this letter.