

SECTION 02 83 00
LEAD REMEDIATION

PART 1 GENERAL

1.01 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.
1. American Society of Safety Professionals (ASSP): Z9.2, (2018) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems.
 2. ASTM International (ASTM):
 - a. E1613, (2012) Standard Test Method for Determination of Lead by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES), Flame Atomic Absorption Spectrometry (FAAS), or Graphite Furnace Atomic Absorption Spectrometry (GFAAS) Techniques.
 - b. E1644, (2021) Standard Practice for Hot Plate Digestion of Dust Wipe Samples for the Determination of Lead.
 - c. E1726, (2021) Standard Practice for Preparation of Soil Samples by Hotplate Digestion for Subsequent Lead Analysis.
 - d. E1727, (2016) Standard Practice for Field Collection of Soil Samples for Subsequent Lead Determination.
 - e. E1728/E1728M, (2020) Standard Practice for Collection of on Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination.
 - f. E1792, (2020) Standard Specification for Wipe Sampling Materials for Lead in Surface Dust.
 3. National Fire Protection Association (NFPA): 701, (2019) Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.
 4. UL: 586, (2009; Reprint Dec 2017) UL Standard for Safety High-Efficiency Particulate, Air Filter Units.
 5. U.S. National Archives and Records Administration (NARA):
 - a. 29 CFR 1926.21, Safety Training and Education.
 - b. 29 CFR 1926.33, Access to Employee Exposure and Medical Records.
 - c. 29 CFR 1926.55, Gases, Vapors, Fumes, Dusts, and Mists.
 - d. 29 CFR 1926.59, Hazard Communication.
 - e. 29 CFR 1926.62, Lead.
 - f. 29 CFR 1926.65, Hazardous Waste Operations and Emergency Response.
 - g. 29 CFR 1926.103, Respiratory Protection.

- h. 40 CFR 260, Hazardous Waste Management System: General.
- i. 40 CFR 261, Identification and Listing of Hazardous Waste.
- j. 40 CFR 262, Standards Applicable to Generators of Hazardous Waste.
- k. 40 CFR 263, Standards Applicable to Transporters of Hazardous Waste.
- l. 40 CFR 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.
- m. 40 CFR 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.
- n. 40 CFR 268, Land Disposal Restrictions.
- o. 40 CFR 745, Lead-Based Paint Poisoning Prevention in Certain Residential Structures.
- p. 49 CFR 172, Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements.
- q. 49 CFR 178, Specifications for Packagings.

1.02 DEFINITIONS

- A. Abatement: Measures defined in 40 CFR 745, Section 223, designed to permanently eliminate lead-based paint hazards.
- B. Action Level: Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8-hour period.
- C. Area Sampling: Sampling of lead concentrations within the lead control area and inside the physical boundaries which is representative of the airborne lead concentrations but is not collected in the breathing zone of personnel (approximately 5 feet to 6 feet above the floor).
- D. Certified Industrial Hygienist (CIH): As used in this section refers to a person retained by the Contractor who is certified as an industrial hygienist and who is trained in the recognition and control of lead hazards in accordance with current federal, state, and local regulations. CIH must be certified for comprehensive practice by the American Board of Industrial Hygiene. The Certified Industrial Hygienist must be independent of the Contractor and must have no employee or employer relationship which could constitute a conflict of interest.
- E. Competent Person (CP): As used in this section, refers to a person employed by the Contractor who is trained in the recognition and control of lead hazards in accordance with current federal, state, and local regulations and has the authority to take prompt corrective actions to control the lead hazard. The Contractor may provide more than one CP as required to supervise and

monitor the work. The CP must be a Certified Industrial Hygienist (CIH) certified by the American Board of Industrial Hygiene or a Certified Safety Professional (CSP) certified by the Board of Certified Safety Professionals or a licensed lead-based paint abatement Supervisor.

- F. Contaminated Room: Refers to a room for removal of contaminated personal protective equipment (PPE).
- G. Decontamination Shower Facility: That facility that encompasses a clean clothing storage room, and a contaminated clothing storage and disposal rooms, with a shower facility in between.
- H. Deleading: Activities conducted by a person who offers to eliminate lead-based paint or lead-based paint hazards or to plan such activities in commercial buildings, bridges, or other structures.
- I. Eight-Hour Time Weighted Average (TWA): Airborne concentration of lead to which an employee is exposed, averaged over an 8-hour workday as indicated in 29 CFR 1926.62.
- J. High Efficiency Particulate Air (HEPA) Filter Equipment: HEPA filtered vacuuming equipment with a UL 586 filter system capable of collecting and retaining lead contaminated particulate. A high efficiency particulate filter demonstrates at least 99.97 percent efficiency against 0.3 micron or larger size particles.
- K. Lead: Metallic lead, inorganic lead compounds, and organic lead soaps. Excludes other forms of organic lead compounds. The use of the term Lead in this section also refers to paints which contain detectable concentrations of Cadmium and Chromium. For the purposes of the section lead-based paint (LBP) and paint with lead (PWL) also contains cadmium and chromium.
- L. Lead-Based Paint (LBP): Paint or other surface coating that contains lead in excess of 1 milligrams per centimeter squared or 0.5 percent by weight.
- M. Lead Control Area: A system of control methods to prevent the spread of lead dust, paint chips or debris to adjacent areas that may include temporary containment, floor or ground cover protection, physical boundaries, and warning signs to prevent unauthorized entry of personnel. HEPA filtered local exhaust equipment may be used as engineering controls to further reduce personnel exposures or building/outdoor environmental contamination.
- N. Lead Permissible Exposure Limit (PEL):
 - 1. Fifty micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed

for more than 8 hours in a workday, determine the PEL by the following formula:

a. $PEL \text{ (micrograms/cubic meter of air)} = 400/\text{Number hours worked per day.}$

- O. **Material Containing Lead/Paint with Lead (MCL/PWL):** Any material, including paint, which contains lead as determined by the testing laboratory using a valid test method. The requirements of this section do not apply if no detectable levels of lead are found using a quantitative method for analyzing paint or MCL using laboratory instruments with specified limits of detection (usually 0.01 percent). An X-Ray Fluorescence (XRF) instrument is not considered a valid test method.
- P. **Personal Sampling:** Sampling of airborne lead concentrations within the breathing zone of an employee to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples must be representative of the employees' work tasks. Breathing zone must be considered an area within a hemisphere, forward of the shoulders, with a radius of 6 inches to 9 inches and centered at the nose or mouth of an employee.
- Q. **Physical Boundary:** Area physically roped or partitioned off around lead control area to limit unauthorized entry of personnel.

1.03 DESCRIPTION

- A. **Construction activities impacting PWL or material containing lead** which are covered by this specification include the demolition or removal of material containing lead in all conditions, located throughout and as indicated on the Drawings. The Work covered by this section includes work tasks and the precautions specified in this section for the protection of building occupants and the environment during and after the performance of the hazard abatement activities.
- B. **Protection of Existing Areas to Remain:** Project work including, but not limited to, lead hazard abatement work, storage, transportation, and disposal must be performed without damaging or contaminating adjacent work and areas. Where such work or areas are damaged or contaminated, restore work and areas to the original condition.
- C. **Coordination with Other Work:** Coordinate with work being performed in adjacent areas to ensure there are no exposure issues. Explain coordination procedures in the Lead Compliance Plan and describe how the Contractor will prevent lead exposure to other contractors and Government personnel performing work unrelated to lead activities.

- D. Sampling and Analysis: Submit a log of the analytical results from sampling conducted during the abatement. Keep the log of results current with Project activities and brief the results to the Contracting Officer as analytical results are reported.

1.04 SUBMITTALS

A. Action Submittals:

- 1. Preconstruction Submittals:
 - a. Competent Person Qualifications.
 - b. Training Certification.
 - c. Occupational and Environmental Assessment Data Report.
 - d. Medical Examinations.
 - e. Lead Waste Management Plan.
 - f. Lead Compliance Plan.
 - g. Written Evidence of Treatment, Storage, Disposal (TSD). Approval.
 - h. Health and Safety Plan.
- 2. Test Reports:
 - a. Sampling and Analysis.
 - b. Occupational and Environmental Assessment Data Report.
 - c. Sampling Results.
 - d. Pressure Differential Recordings for Local Exhaust System.
- 3. Certificates: Testing Laboratory.
- 4. Closeout Submittals:
 - a. Hazardous Waste Manifest.
 - b. Turn-In Documents or Weight Tickets.

B. Informational Submittals:

- 1. Product Data:
 - a. Respirators.
 - b. Vacuum Filters.
 - c. Negative Air Pressure System.
 - d. Materials and Equipment.
 - e. Expendable Supplies.
 - f. Local Exhaust Equipment.
 - g. Pressure Differential Automatic Recording Instrument.

1.05 QUALITY ASSURANCE

A. Qualifications:

- 1. Competent Person (CP): Submit name, address, and telephone number of the CP selected to perform responsibilities specified in Paragraph Competent Person (CP) Responsibilities. Provide documented

construction Project-related experience with implementation of OSHA's Lead in Construction standard (29 CFR 1926.62) which shows ability to assess occupational and environmental exposure to lead; experience with the use of respirators, personal protective equipment, and other exposure reduction methods to protect employee health. Demonstrate a minimum of 3 years' experience implementing OSHA's Lead in Construction standard (29 CFR 1926.62). Submit proper documentation that the CP is trained and certified in accordance with federal, state, and local laws.

2. Training Certification: Submit a certificate for each worker and supervisor, signed and dated by the accredited training provider, stating that the employee has received the required lead training specified in 29 CFR 1926.62.
3. Testing Laboratory: Submit the name, address, and telephone number of the testing laboratory selected to perform the air analysis, testing, and reporting of airborne concentrations of lead. Use a laboratory participating in the EPA National Lead Laboratory Accreditation Program (NLLAP) by being accredited by either the American Association for Laboratory Accreditation (A2LA) or the American Industrial Hygiene Association (AIHA) and that is successfully participating in the Environmental Lead Proficiency Analytical Testing (ELPAT) program to perform sample analysis. Laboratories selected to perform blood lead analysis must be OSHA approved.

B. Requirements:

1. Competent Person (CP) Responsibilities:
 - a. Verify training meets all federal, state, and local requirements.
 - b. Review and approve Lead Compliance Plan for conformance to the applicable referenced standards.
 - c. Continuously inspect LBP/PWL or MCL work for conformance with the approved plan.
 - d. Perform (or oversee performance of) air sampling. Recommend upgrades or downgrades (whichever is appropriate based on exposure) on the use of PPE (respirators included) and engineering controls.
 - e. Ensure work is performed in strict accordance with specifications at all times.
 - f. Control work to prevent hazardous exposure to human beings and to the environment at all times.
 - g. Supervise final cleaning of the lead control area, take clearance wipe samples if necessary; review clearance sample results and make recommendations for further cleaning.
 - h. Certify the conditions of the work as called for elsewhere in this specification.

2. Lead Compliance Plan:
 - a. Submit a detailed job-specific plan of the work procedures to be used in the disturbance of lead, LBP/PWL or MCL. Include in the plan a sketch showing the location, size, and details of lead control areas, critical barriers, physical boundaries, location, and details of decontamination facilities, viewing ports, and mechanical ventilation system. Include a description of equipment and materials, work practices, controls, and job responsibilities for each activity from which lead is emitted. Include in the plan, eating, drinking, smoking, hygiene facilities and sanitary procedures, interface of trades, sequencing of lead related work, collected waste water and dust containing lead and debris, air sampling, respirators, personal protective equipment, and a detailed description of the method of containment of the operation to ensure that lead is not released outside of the lead control area. Include site preparation, cleanup, and clearance procedures. Include occupational and environmental sampling, training and strategy, sampling and analysis strategy and methodology, frequency of sampling, duration of sampling, and qualifications of sampling personnel in the air sampling portion of the plan. Include a description of arrangements made among contractors on multicontractor worksites to inform affected employees and to clarify responsibilities to control exposures.
 - b. The plan must include the name and certification number of the person signing the plan.
3. Occupational and Environmental Assessment Data Report:
 - a. If initial monitoring is necessary, submit occupational and environmental sampling results to the Contracting Officer within 3 calendar days of collection, signed by the testing laboratory employee performing the analysis, the employee that performed the sampling, and the CP.
 - b. To reduce the full implementation of 29 CFR 1926.62 the Contractor must provide documentation. Submit a report that supports the determination to reduce full implementation of the requirements of 29 CFR 1926.62 and supporting the Lead Compliance Plan.
 - 1) The initial monitoring must represent each job classification, or if working conditions are similar to previous jobs by the same employer, provide previously collected exposure data that can be used to estimate worker exposures per 29 CFR 1926. The data must represent the worker's regular daily exposure to lead for stated work.
 - 2) Submit worker exposure data gathered during the task based trigger operations of 29 CFR 1926.62 with a complete process description. This includes manual demolition, manual scraping, manual sanding, heat gun, power tool

- cleaning, rivet busting, cleanup of dry expendable abrasives, abrasive blast enclosure removal, abrasive blasting, welding, cutting, and torch burning where lead containing coatings are present.
- 3) The initial assessment must determine the requirement for further monitoring and the need to fully implement the control and protective requirements including the lead compliance plan per 29 CFR 1926.62.
 4. Medical Examinations: Submit pre-work blood lead levels and post-work blood lead levels for all workers performing lead activities during the execution of the work. Initial medical surveillance as required by 29 CFR 1926.62 must be made available to all employees exposed to lead at any time (one day) above the action level. Full medical surveillance must be made available to all employees on an annual basis who are or may be exposed to lead in excess of the action level for more than 30 days a year or as required by 29 CFR 1926.62. Adequate records must show that employees meet the medical surveillance requirements of 29 CFR 1926.33, 29 CFR 1926.62 and 29 CFR 1926.103. Provide medical surveillance to all personnel exposed to lead as indicated in 29 CFR 1926.62. Maintain complete and accurate medical records of employees for the duration of employment plus 30 years.
 5. Training: Train each employee performing work that disturbs lead who performs LBP/MCL/PWL disposal, and air sampling operations prior to the time of initial job assignment and annually thereafter, in accordance with 29 CFR 1926.21, 29 CFR 1926.62, 40 CFR 745 and state and local regulations where appropriate.
 6. Respiratory Protection Program:
 - a. Provide each employee required to wear a respirator a respirator fit test at the time of initial fitting and at least annually thereafter as required by 29 CFR 1926.62.
 - b. Establish and implement a respiratory protection program as required by 29 CFR 1926.103, 29 CFR 1926.62 and 29 CFR 1926.55.
 7. Hazard Communication Program: Establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.
 8. Lead Waste Management:
 - a. The Lead Waste Management Plan must comply with applicable requirements of federal, state, and local hazardous waste regulations and address:
 - 1) Identification and classification of wastes associated with the work.
 - 2) Estimated quantities of wastes to be generated and disposed of.
 - 3) Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes.

- Include the facility location and a 24-hour point of contact. Furnish two copies of USEPA hazardous waste manifests and USEPA Identification numbers.
- 4) Names and qualifications (experience and training) of personnel who will be working onsite with hazardous wastes.
 - 5) List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.
 - 6) Spill prevention, containment, and cleanup contingency measures including a Health and Safety Plan to be implemented in accordance with 29 CFR 1926.65.
 - 7) Work plan and schedule for waste containment, removal, and disposal. Proper containment of the waste includes using acceptable waste containers (e.g., 55-gallon drums) as well as proper marking/labeling of the containers. Clean up and containerize wastes daily.
 - 8) Include any process that may alter or treat waste rendering a hazardous waste non hazardous.
 - 9) Unit cost for hazardous waste disposal according to this plan.
9. Environmental, Safety and Health Compliance: In addition to the detailed requirements of this specification, comply with laws, ordinances, rules, and regulations of federal, state, and local authorities regarding lead. Comply with the applicable requirements of the current issue of 29 CFR 1926.62. Submit matters regarding interpretation of standards to the Contracting Officer for resolution before starting work. Where specification requirements and the referenced documents vary, the most stringent requirements apply.
- C. Pressure Differential Recordings for Local Exhaust System: Provide a local exhaust system that creates a negative pressure of at least 0.02 inches of water relative to the pressure external to the enclosure and operate it continuously, 24 hours a day, until the temporary enclosure of the lead control area is removed. Submit pressure differential recordings for each workday to the PQP for review and to the Contracting Officer within 24 hours from the end of each workday.
- D. Licenses, Permits and Notifications: Certify and submit in writing to the Regional Office of the EPA at least 10 days prior to the commencement of work that licenses, permits and notifications have been obtained. All associated fees or costs incurred in obtaining the licenses, permits and notifications are included in the Contract price.

- E. Pre-Construction Conference: Along with the CP, meet with the Contracting Officer to discuss in detail the Lead Waste Management Plan and the Lead Compliance Plan, including procedures and precautions for the Work.

1.06 EQUIPMENT

- A. Respirators: Furnish appropriate respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for use in atmospheres containing lead dust, fume, and mist. Respirators must comply with the requirements of 29 CFR 1926.62.
- B. Special Protective Clothing: Personnel exposed to lead contaminated dust must wear proper disposable protective whole body clothing, head covering, gloves, eye, and foot coverings as required by 29 CFR 1926.62. Furnish proper disposable plastic or rubber gloves to protect hands. Reduce the level of protection only after obtaining approval from the CP.
- C. Rental Equipment Notification: If rental equipment is to be used during PWL or MCL handling and disposal, notify the rental agency in writing concerning the intended use of the equipment.
- D. Vacuum Filters: UL 586 labeled HEPA filters.
- E. Equipment for Government Personnel: Furnish the Contracting Officer with two complete sets of personal protective equipment (PPE) daily, as required herein, for entry into and inspection of the lead removal work within the lead controlled area. Personal protective equipment must include disposable whole body covering, including appropriate foot, head, eye, and hand protection. PPE remains the property of the Contractor. The Government will provide respiratory protection for the Contracting Officer.
- F. Abrasive Removal Equipment: The use of powered machine for vibrating, sanding, grinding, or abrasive blasting is prohibited unless equipped with local exhaust ventilation systems equipped with high efficiency particulate air (HEPA) filters.
- G. Negative Air Pressure System:
 - 1. Minimum Requirements:
 - a. Do not proceed with work in the area until containment is set up and HEPA filtration systems are in place. The negative air pressure system must meet the requirements of ASSP Z9.2 including approved HEPA filters in accordance with UL 586. Negative air pressure equipment must be equipped with new HEPA filters and be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to

adjacent, unsealed areas. Negative air pressure system minimum requirements are listed as follows:

- 1) The unit must be capable of delivering its rated volume of air with a clean first stage filter, an intermediate filter, and a primary HEPA filter in place.
 - 2) The HEPA filter must be certified as being capable of trapping and retaining mono-disperse particles as small as 0.3 micrometers at a minimum efficiency of 99.97 percent.
 - 3) The unit must be capable of continuing to deliver no less than 70 percent of rated capacity when the HEPA filter is 70 percent full or measures 2.5 inches of water static pressure differential on a magnehelic gauge.
 - 4) Equip the unit with a manometer-type negative pressure differential monitor with minor scale division of 0.02 inch of water and accuracy within plus or minus 1.0 percent. The manometer must be calibrated daily as recommended by the manufacturer.
 - 5) Equip the unit with a means for the operator to easily interpret the readings in terms of the volumetric flow rate of air per minute moving through the machine at any given moment.
 - 6) Equip the unit with an electronic mechanism that automatically shuts the machine off in the event of a filter breach or absence of a filter.
 - 7) Equip the unit with an audible horn that sounds an alarm when the machine has shut itself off.
 - 8) Equip the unit with an automatic safety mechanism that prevents a worker from improperly inserting the main HEPA filter.
2. Auxiliary Generator: Provide an auxiliary generator with capacity to power a minimum of 50 percent of the negative air machines at any time during the work. When power fails, the generator controls must automatically start the generator and switch the negative air pressure system machines to generator power. The generator must not present a carbon monoxide hazard to workers.
- H. Vacuum Systems: Vacuum systems must be suitably sized for the project, and filters must be capable of trapping and retaining all mono-disperse particles as small as 0.3 micrometers (mean aerodynamic diameter) at a minimum efficiency of 99.97 percent. Properly dispose of used filters that are being replaced.
- I. Heat Blower Guns: Heat blower guns must be flameless, electrical, paint-softener type with controls to limit temperature to 1,100 degrees F. Heat blower must be (grounded) 120V ac, and must be equipped with cone, fan, glass protector, and spoon reflector nozzles.

1.07 PROJECT/SITE CONDITIONS

- A. Protection of Existing Work to Remain: Perform work without damage or contamination of adjacent areas. Where existing work is damaged or contaminated, restore work to its original condition or better as determined by the Contracting Officer.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. Keep materials and equipment needed to complete the Project available and on the Site. Submit a description of the materials and equipment required; including Safety Data Sheets (SDSs) for material brought onsite to perform the work.
- B. Expendable Supplies: Submit a description of the expendable supplies required.
 - 1. Polyethylene Bags: Disposable bags must be polyethylene plastic and be a minimum of 6 mils thick (4 mils thick if double bags are used) or any other thick plastic material shown to demonstrate at least equivalent performance; and capable of being made leak-tight. Leak-tight means that solids, liquids or dust cannot escape or spill out.
 - 2. Polyethylene Leak-tight Wrapping: Wrapping used to wrap lead contaminated debris must be polyethylene plastic that is a minimum of 6 mils thick or any other thick plastic material shown to demonstrate at least equivalent performance.
 - 3. Polyethylene Sheeting: Sheeting must be polyethylene plastic with a minimum thickness of 6 mils, or any other thick plastic material shown to demonstrate at least equivalent performance; and be provided in the largest sheet size reasonably accommodated by the Project to minimize the number of seams. Where the Project location constitutes an out of the ordinary potential for fire, or where unusual fire hazards cannot be eliminated, provide flame-resistant polyethylene sheets which conform to the requirements of NFPA 701.
 - 4. Tape and Adhesive Spray: Tape and adhesive must be capable of sealing joints between polyethylene sheets and for attachment of polyethylene sheets to adjacent surfaces. After dry application, tape or adhesive must retain adhesion when exposed to wet conditions, including amended water. Tape must be minimum 2 inches wide, industrial strength.
 - 5. Containers: When used, containers must be leak-tight and be labeled in accordance with EPA, DOT and OSHA standards.

6. Chemical Paint Strippers: Chemical paint strippers must not contain methylene chloride and be formulated to prevent stain, discoloration, or raising of the substrate materials.
7. Chemical Paint Stripper Neutralizer: Neutralizers for paint strippers must be compatible with the substrate and suitable for use with the chemical stripper that has been applied to the surface.
8. Detergents and Cleaners: Detergents or cleaning agents must not contain trisodium phosphate and have demonstrated effectiveness in lead control work using cleaning techniques.

PART 3 EXECUTION

3.01 PREPARATION

A. Protection:

1. Notification: Notify the Contracting Officer 20 days prior to the start of any lead work.
2. Lead Control Area:
 - a. Physical Boundary: Provide physical boundaries around the lead control area by roping off the area designated in the work plan or providing curtains, portable partitions, or other enclosures to ensure that lead will not escape outside of the lead control area. Prohibit the general public from accessing the lead control areas.
 - b. Warning Signs: Provide warning signs at approaches to lead control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs must comply with the requirements of 29 CFR 1926.62.
3. Furnishings: The Government will remove furniture and equipment from the building before lead work begins.
4. Heating, Ventilating, and Air Conditioning (HVAC) Systems: Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the lead control areas. Seal intake and exhaust vents in the lead control area with 6-mil plastic sheet and tape. Seal seams in HVAC components that pass through the lead control area. Provide temporary HVAC system for areas in which HVAC has been shut down outside the lead control area.
5. Local Exhaust System: Provide a local exhaust system in the lead control area in accordance with ASSP Z9.2, 29 CFR 1926.62 that will provide at least 4 air changes per hour inside of the negative pressure enclosure. Local exhaust equipment must be operated 24 hours per day, until the lead control area is removed and must be leak proof to the filter and equipped with HEPA filters. Maintain a minimum pressure differential in the lead control area of minus 0.02 inch of water column relative to adjacent, unsealed areas. Provide continuous 24-hour per day

monitoring of the pressure differential with a pressure differential automatic recording instrument. The building ventilation system must not be used as the local exhaust system for the lead control area. Filters on exhaust equipment must conform to ASSP Z9.2 and UL 586. Terminate the local exhaust system out of doors and remote from any public access or ventilation system intakes.

6. Negative Air Pressure System Containment:
 - a. Operate the negative air pressure systems to provide at least four air changes per hour inside the containment. Operate the local exhaust unit equipment continuously until the containment is removed. Smoke test the negative air pressure system for leaks at the beginning of each shift. The certified supervisor is responsible to continuously monitor and keep a pressure differential log with an automatic manometric recording instrument. Notify the Contracting Officer immediately if the pressure differential falls below the prescribed minimum. Submit the continuously monitored pressure differential log, as specified. Do not use the building ventilation system as the local exhaust system. Terminate the local exhaust system out of doors unless the Contracting Officer allows an alternate arrangement. All filters must be new at the beginning of the Project and be periodically changed as necessary to maintain specified pressure differential and disposed of as contaminated waste.
 - b. Discontinuing Negative Air Pressure System: Operate the negative air pressure system continuously during abatement activities unless otherwise authorized by the Contracting Officer. At the completion of the Project, units must be run until full cleanup has been completed and final clearance testing requirements have been met. Dismantling of the negative air pressure systems must conform to written decontamination procedures as presented in the Lead Compliance Plan. Seal the HEPA filter machine intakes with polyethylene to prevent environmental contamination.
7. Decontamination Shower Facility: Provide clean and contaminated change rooms and shower facilities in accordance with this specification and 29 CFR 1926.62.
8. Eye Wash Station: Provide suitable facilities within the work area for quick drenching or flushing of the eyes where eyes may be exposed to injurious corrosive materials.
9. Mechanical Ventilation System:
 - a. Use adequate ventilation to control personnel exposure to lead in accordance with 29 CFR 1926.62. To the extent feasible, use local exhaust ventilation or other collection systems, approved by the CP. Evaluate and maintain local exhaust ventilation systems in accordance with 29 CFR 1926.62.

- b. Vent local exhaust outside the building and away from building ventilation intakes or ensure system is connected to HEPA filters.
 - c. Use locally exhausted, power actuated tools or manual hand tools.
10. Personnel Protection: Personnel must wear and use protective clothing and equipment as specified herein. Eating, smoking, or drinking or application of cosmetics is not permitted in the lead control area. No one will be permitted in the lead control area unless they have been appropriately trained and provided with protective equipment.

3.02 ERECTION

A. Lead Control Area Requirements:

- 1. Establish a lead control area by completely establishing barriers and physical boundaries around the area or structure where PWL or MCL removal operations will be performed.
- 2. For containment areas larger than 1,000 square feet install a minimum of two 18-inch square viewing ports. Locate ports to provide a view of the required work from the exterior of the enclosed contaminated area. Glaze ports with laminated safety glass.

3.03 APPLICATION

A. Lead Work: Perform lead work in accordance with approved Lead Compliance Plan. Use procedures and equipment required to limit occupational exposure and environmental contamination with lead when the work is performed in accordance with 29 CFR 1926.62, and as specified herein. Dispose of all PWL or MCL and associated waste in compliance with federal, state, and local requirements.

B. Paint with Lead or Material Containing Lead Removal:

- 1. Manual or power sanding or grinding of lead surfaces or materials is not permitted unless tools are equipped with HEPA attachments or wet methods. The dry sanding or grinding of surfaces that contain lead is prohibited. Provide methodology for removing lead in the Lead Compliance Plan. Select lead removal processes to minimize contamination of work areas outside the control area with lead contaminated dust or other lead contaminated debris or waste and to ensure that unprotected personnel are not exposed to hazardous concentrations of lead. Describe this removal process in the Lead Compliance Plan.
- 2. Avoid deterioration of the substrate. Provide surface preparations for painting in accordance with Section 09 90 00, Painting and Coating.
 - a. Provide methodology for lead, LBP/PWL removal and processes to minimize contamination of work areas outside the control area with lead contaminated dust or other lead contaminated

debris/waste and to ensure that unprotected personnel are not exposed to hazardous concentrations of lead. Describe this lead, LBP/PWL removal/control process in the Lead Compliance Plan.

3. Paint with Lead or Material Containing Lead:
 - a. Indoor Removal: Perform manual removal and thermal cutting in the lead control areas using enclosures, barriers, or containments. Collect residue and debris for disposal in accordance with federal, state, and local requirements.
4. Paint with Lead or Material Containing Lead:
 - a. Outdoor Removal: Perform outdoor removal as indicated in federal, state, and local regulations and in the Lead Compliance Plan. The worksite preparation (barriers or containments) must be job dependent and presented in the Lead Compliance Plan.

C. Personnel Exiting Procedures:

1. Whenever personnel exit the lead controlled area, they must perform the following procedures and must not leave the work place wearing any clothing or equipment worn in the control area:
 - a. Vacuum all clothing before entering the contaminated change room.
 - b. Remove protective clothing in the contaminated change room and place them in an approved impermeable disposal bag.
 - c. Shower.
 - d. Wash hands and face at the Site, don appropriate disposable or uncontaminated reusable clothing, move to an appropriate shower facility, shower.
 - e. Change to clean clothes prior to leaving the clean clothes storage area.

3.04 FIELD QUALITY CONTROL

A. Tests:

1. Air Sampling: Conduct sampling for lead in accordance with 29 CFR 1926.62 and as specified herein. Air sampling must be directed or performed by the CP.
 - a. The CP must be on the Job Site directing the air and wipe sampling and inspecting the PWL or MCL removal work to ensure that the requirements of the Contract have been satisfied during the entire PWL or MCL operation.
 - b. Collect personal air samples on employees who are anticipated to have the greatest risk of exposure as determined by the CP. In addition, collect air samples on at least 25 percent of the work crew or a minimum of two employees, whichever is greater, during each work shift.

- c. Submit results of air samples, signed by the CP, within 72 hours after the air samples are taken.
 - d. Conduct area air sampling daily, on each shift in which lead and lead-based paint removal operations are performed, in areas immediately adjacent to the lead control area. Conduct sufficient area monitoring to ensure unprotected personnel are not exposed at or above 30 micrograms of lead per cubic meter of air. If 30 micrograms of lead per cubic meter of air is reached or exceeded, stop work, correct the condition(s) causing the increased levels notify the Contracting Officer immediately. Determine if condition(s) require any further change in work methods. Resume removal work only after the CP and the Contracting Officer give approval.
2. Testing of Material Containing Lead Residue: Test residue in accordance with 40 CFR 261 for hazardous waste.

3.05 CLEANING AND DISPOSAL

- A. Cleanup: Maintain surfaces of the lead control area free of accumulations of dust and debris. Restrict the spread of dust and debris; keep waste from being distributed over the work area. Do not dry sweep or use pressurized air to clean up the area. At the end of each shift and when the lead operation has been completed, clean the controlled area of all visible contamination by vacuuming with a HEPA filtered vacuum cleaner, wet mopping the area and wet wiping the area as indicated by the Lead Compliance Plan. Reclean areas showing dust or debris. After visible dust and debris is removed, wet wipe and HEPA vacuum all surfaces in the controlled area. If adjacent areas become contaminated at any time during the work, clean, visually inspect, and then wipe sample all contaminated areas. The CP must then certify in writing that the area has been cleaned of lead contamination before clearance testing.
- B. Disposal:
 1. Dispose of material, whether hazardous or non-hazardous in accordance with all laws and provisions and all federal, state, or local regulations. Ensure all waste is properly characterized. The result of each waste characterization (TCLP for RCRA materials) will dictate disposal requirements.
 2. Contractor is responsible for segregation of waste. Collect lead contaminated waste, scrap, debris, bags, containers, equipment, and lead contaminated clothing that may produce airborne concentrations of lead particles. Label the containers in accordance with 29 CFR 1926.62 and 40 CFR 261, 40 CFR 262 and corresponding state regulations.
 3. Dispose of lead contaminated material classified as hazardous waste at an EPA approved hazardous waste treatment, storage, or disposal facility off Government property.

4. Accumulate waste materials in U.S. Department of Transportation (49 CFR 178) approved 55-gallon drums or appropriately sized container for smaller volumes. Properly label each drum to identify the type of hazardous material (49 CFR 172). For hazardous waste, the collection container requires marking/labeling in accordance with 40 CFR 262 and corresponding state regulations during the accumulation/collection timeframe. The Contracting Officer or an authorized representative will assign an area for accumulation of waste containers. Coordinate authorized accumulation volumes and time limits with the host installation environmental function.
5. Handle, store, transport, and dispose lead or lead contaminated waste in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, and 40 CFR 265. Comply with land disposal restriction notification requirements as required by 40 CFR 268.
6. All lead waste generation, management, and disposal will be coordinated with the host installation environmental function.
7. Disposal Documentation: Coordinate all disposal or offsite shipments of lead waste with the host installation environmental function. Submit written evidence of TSD approval to demonstrate the hazardous waste TSD is approved for lead disposal by the EPA, state, or local regulatory agencies. Submit one copy of the completed hazardous waste manifest, signed and dated by the initial transporter in accordance with 40 CFR 262. Provide a certificate that the waste was accepted by the disposal facility. Provide turn-in documents or weight tickets for non-hazardous waste disposal.
8. Payment for Hazardous Waste: Payment for disposal of hazardous and non-hazardous waste will not be made until a signed copy of the manifest from the treatment or disposal facility is received and approved by the Contracting Officer. The manifest must detail and certify the amount of lead containing materials or non-hazardous waste delivered to the treatment or disposal facility.

END OF SECTION