
USACE / NAVFAC / AFCEA / NASA UFGS-02 83 13.00 20 (August 2011)

Preparing Activity: NAVFAC Superseding
UFGS-02 83 13.00 20 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated April 2012

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SECTION 02 83 13.00 20

LEAD IN CONSTRUCTION
08/11

NOTE: This guide specification covers the requirements for protection of workers, disposal of lead painted material.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable items(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

NOTE: This guide specification also provides guidelines/recommendations for cleanup of lead on construction projects impacting material containing lead and/or lead based paint. This guide specification does not apply to abatement of lead hazards in target housing or child occupied facilities. Section 02 82 33.13 20 REMOVAL/CONTROL AND DISPOSAL OF PAINT WITH LEAD is to be used for abatement or control of lead hazards in 40 CFR 745 defined child occupied facilities or target housing.

NOTE: Obtain project specific information and appropriate sampling of Paint with Lead (PWL) or Material Containing Lead (MCL) that will be removed or disturbed.

NOTE: When historic preservation work will disturb
PWL, refer to the Secretary of the Interior's
Standards for the Treatment of Historic Properties
and/or Brief 37, "Appropriate Methods for Reducing
Lead-Paint Hazards in Historic Housing" as
appropriate.

NOTE: Projects involving housing improvement,
maintenance, or repair are not considered a
lead-based paint hazard abatement action even if the
effect of the work removes (or reduces) lead
exposure potentials to the occupants. However,
appropriate precautions for protecting occupants and
leaving the housing clean (clearance) after
concluding any work disturbing lead must be
considered. Specific training and certification
requirements (40 CFR 745 or authorized state program
requirements) may not be necessary for all projects.
However, it is strongly recommended that the
specification editor have appropriate training
regarding lead.

PART 1 GENERAL

1.1 REFERENCES

NOTE: This paragraph is used to list the
publications cited in the text of the guide
specification. The publications are referred to in
the text by basic designation only and listed in
this paragraph by organization, designation, date,
and title.

Use the Reference Wizard's Check Reference feature
when you add a RID outside of the Section's
Reference Article to automatically place the
reference in the Reference Article. Also use the
Reference Wizard's Check Reference feature to update
the issue dates.

References not used in the text will automatically
be deleted from this section of the project
specification when you choose to reconcile
references in the publish print process.

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.

AMERICAN INDUSTRIAL HYGIENE ASSOCIATION (AIHA)

AIHA Z88.6

(2006) Respiratory Protection - Respirator

Use-Physical Qualifications for Personnel

STATE OF VIRGINIA ADMINISTRATIVE CODE (VAC)

- 16 VAC 25-35 Title 16, Agency 25, Chapter 35:
Regulation Concerning Certified Lead
Contractor's Notification, Lead Project
Permits And Permit Fees
- 18 VAC 15-30 Title 18, Agency 15, Chapter 30: Virginia
Lead-Based Paint Activities Regulations

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

- HUD 6780 (1995; Errata Aug 1996;Rev Ch. 7 - 1997)
Guidelines for the Evaluation and Control
of Lead-Based Paint Hazards in Housing

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

- 29 CFR 1926.103 Respiratory Protection
- 29 CFR 1926.21 Safety Training and Education
- 29 CFR 1926.33 Access to Employee Exposure and Medical
Records
- 29 CFR 1926.55 Gases, Vapors, Fumes, Dusts, and Mists
- 29 CFR 1926.59 Hazard Communication
- 29 CFR 1926.62 Lead
- 29 CFR 1926.65 Hazardous Waste Operations and Emergency
Response
- 40 CFR 260 Hazardous Waste Management System: General
- 40 CFR 261 Identification and Listing of Hazardous
Waste
- 40 CFR 262 Standards Applicable to Generators of
Hazardous Waste
- 40 CFR 263 Standards Applicable to Transporters of
Hazardous Waste
- 40 CFR 264 Standards for Owners and Operators of
Hazardous Waste Treatment, Storage, and
Disposal Facilities
- 40 CFR 265 Interim Status Standards for Owners and
Operators of Hazardous Waste Treatment,
Storage, and Disposal Facilities
- 40 CFR 268 Land Disposal Restrictions
- 40 CFR 745 Lead-Based Paint Poisoning Prevention in
Certain Residential Structures

49 CFR 172 Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements

49 CFR 178 Specifications for Packagings

UNDERWRITERS LABORATORIES (UL)

UL 586 (2009) Standard for High-Efficiency Particulate, Air Filter Units

1.2 DEFINITIONS

1.2.1 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.

1.2.2 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 1.5 to 1.8 meters 5 to 6 feet above the floor).

1.2.3 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. 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 is the best choice.

1.2.4 Contaminated Room

Refers to a room for removal of contaminated personal protective equipment (PPE).

1.2.5 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.

1.2.6 High Efficiency Particulate Arrestor (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.

1.2.7 Lead

Metallic lead, inorganic lead compounds, and organic lead soaps. Excludes

other forms of organic lead compounds.

1.2.8 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.

1.2.9 Lead Permissible Exposure Limit (PEL)

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 eight hours in a work day, the PEL shall be determined by the following formula:

$$\text{PEL (micrograms/cubic meter of air)} = 400/\text{No. hrs worked per day}$$

1.2.10 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 does 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.

1.2.11 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 shall be representative of the employees' work tasks. Breathing zone shall be considered an area within a hemisphere, forward of the shoulders, with a radius of 150 to 225 mm 6 to 9 inches and centered at the nose or mouth of an employee.

1.2.12 Physical Boundary

Area physically roped or partitioned off around lead control area to limit unauthorized entry of personnel.

1.3 DESCRIPTION

1.3.1 Description of Work

NOTE: Specify the construction activities that will impact lead based paint or lead containing material. Show the location of MCL/PWL impacted construction activities on the contract drawings and indicate its condition (well adhered sheets or wrappings, solid, aggregates, bricks or blocks, powdered, liquid, sludge, etc.). Example activities include: preparing surfaces for painting, saw cutting through painted material, sanding painted surfaces, scabbling painted or otherwise leaded concrete surfaces, blast cleaning painted surfaces,

torch cutting through painted metal.

Construction activities impacting PWL or material containing lead which are covered by this specification include the demolition and/or removal of material containing lead in [_____] condition, located [_____] and as indicated on the drawings. [_____]

1.3.2 Coordination with Other Work

The contractor shall coordinate with work being performed in adjacent areas. Coordination procedures shall be explained in the Plan and shall describe how the Contractor will prevent lead exposure to other contractors and/or Government personnel performing work unrelated to lead activities.

1.4 SUBMITTALS

NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project.

The Guide Specification technical editors have designated those items that require Government approval, due to their complexity or criticality, with a "G". Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item, if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.] [for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

[Occupational and Environmental Assessment Data Report (if objective data is used to justify excluding the initial occupational exposure assessment) [; G] [; G, [____]]]

Lead Compliance Plan including CP approval (signature, date, and certification number) [; G] [; G, [____]]

Competent Person qualifications [; G] [; G, [____]]

Training Certification of workers and supervisors [; G] [; G, [____]]

lead waste management plan [; G] [; G, [____]]

[written evidence that TSD is approved for lead disposal [; G] [; G, [____]]]

Certification of Medical Examinations [; G] [; G, [____]]

SD-06 Test Reports

sampling results [; G] [; G, [____]]

Occupational and Environmental Assessment Data Report [; G] [; G, [____]]

SD-07 Certificates

Testing laboratory qualifications [; G] [; G, [____]]

[Occupant Notification [; G] [; G, [____]]]

NOTE: See Criteria Notes in paragraphs entitled "Air and Wipe Sampling" and "Clearance Certification" to determine whether these items should be included in the project.

[Third party consultant qualifications [; G] [; G, [____]]]

[Clearance Certification [; G] [; G, [____]]]

SD-11 Closeout Submittals

Completed and signed hazardous waste manifest from treatment or disposal facility [; G] [; G, [____]]

[Waste turn-in documents or weight tickets for non-hazardous wastes that are disposed of at sanitary or construction and demolition landfills [; G] [; G, [____]]]

1.5 QUALITY ASSURANCE

1.5.1 Qualifications

1.5.1.1 Competent Person (CP)

Submit name, address, and telephone number of the CP selected to perform

responsibilities specified in paragraph entitled "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. Submit proper documentation that the CP is trained [and licensed] [and certified] in accordance with federal, State [(18 VAC 15-30)] and local laws. [The competent person shall be a licensed lead-based paint abatement Supervisor/Project Designer in the [State of [____]] [Commonwealth of Virginia]].

1.5.1.2 Training Certification

NOTE: State or local regulations may consider PWL or MCL removal work as "lead based paint hazard reduction activities" even if the work does not include lead based paint. The training provider may be required to be "accredited" by either the State or the United States Environmental Protection Agency (USEPA).

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(l) [and is certified to perform or supervise deleading, lead removal or demolition activities] [in the state of [____]].

1.5.1.3 Testing Laboratory

Submit the name, address, and telephone number of the testing laboratory selected to perform the air [and wipe] 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 shall be OSHA approved.

[1.5.1.4 Third Party Consultant Qualifications

NOTE: See Criteria Notes in paragraphs entitled "Air and Wipe Sampling" and "Clearance Certification" to determine whether this paragraph should be included in the project.

Submit the name, address and telephone number of the third party consultant selected to perform the wipe sampling for determining concentrations of lead in dust. Submit proper documentation that the consultant is trained and certified as an inspector technician or inspector/risk assessor by the USEPA authorized State (or local) certification and accreditation program.

]1.5.2 Requirements

1.5.2.1 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 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.

1.5.2.2 Lead Compliance Plan

NOTE: State or local regulations may have specific requirements for written project designs. Research specific State or local requirements for public, commercial buildings or structures. Consider the bracketed occupant protection plan for high profile sensitive work such as present in family housing, childcare facilities, administrative buildings, kitchens, etc.

Submit a detailed job-specific plan of the work procedures to be used in the disturbance of PWL or MCL. The plan shall include 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.

[The plan shall be developed by a certified planner/project designer in the State of [____].]

[In occupied buildings, the plan shall also include an occupant protection program that describes the measures that will be taken during the work to [notify and] protect the building occupants.]

1.5.2.3 Occupational and Environmental Assessment Data Report

NOTE: Sampling results of previous jobs or initial monitoring during the job determine the requirements for further monitoring and the need to fully implement the control and protective requirements. Some PWL or MCL work may not require full implementation of the requirements of 29 CFR 1926.62. Based on the experience of the Contractor or the use of a specific process or method for performing the work, the Contractor may be able to provide historic data (previous 12 months) to demonstrate that airborne exposures are controlled below the action level. Such methods or controls shall be fully presented in the Lead Compliance Plan.

If initial monitoring is necessary, submit occupational and environmental [sampling results](#) to the Contracting Officer within three working days of collection, signed by the testing laboratory employee performing the analysis, the employee that performed the sampling, and the CP.

[In order to reduce the full implementation of [29 CFR 1926.62](#), the Contractor shall 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.]

- a. The initial monitoring shall 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 1926.62](#). The data shall represent the worker's regular daily exposure to lead for stated work.
- b. 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.
- c. The initial assessment shall 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](#).

1.5.2.4 Medical Examinations

Initial medical surveillance as required by 29 CFR 1926.62 shall be made available to all employees exposed to lead at any time (1 day) above the action level. Full medical surveillance shall 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 shall 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.

1.5.2.5 Training

NOTE: Use training requirements for location.
Include 18 VAC 15-30 for Virginia projects.

Train each employee performing work that disturbs lead, who performs 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, and State [(18 VAC 15-30)] and local regulations where appropriate.

1.5.2.6 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 AIHA Z88.6, 29 CFR 1926.103, 29 CFR 1926.62, and 29 CFR 1926.55.

1.5.2.7 Hazard Communication Program

Establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

1.5.2.8 Lead Waste Management

NOTE: Research local requirements. The EPA has clarified waste requirements where lead-based paint debris generated by contractors in households is excluded from RCRA Subtitle C hazardous waste regulations. Contractors may dispose of LBP-wastes as household wastes subject to applicable State regulations. Determination of the expected waste materials as hazardous or solid waste for disposal should be performed in conjunction with site work. Some construction waste contains lead at lower concentrations, which may be disposed of at local sanitary landfills or Construction and Demolition (C&D) landfills, which are not approved by EPA.

The [Lead Waste Management Plan](#) shall comply with applicable requirements of federal, State, and local hazardous waste regulations. and address:

- a. Identification and classification of wastes associated with the work.
- b. Estimated quantities of wastes to be generated and disposed of.

NOTE: Reference 16 VAC 25-35 for projects in the Commonwealth of Virginia.

- c. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location [and operator] and a 24-hour point of contact. Furnish two copies of [USEPA] [State (in accordance with [16 VAC 25-35](#))] [and] [local] hazardous waste [permit applications] [permits] [manifests] [and] [USEPA Identification numbers].
- d. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.
- e. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.
- f. Spill prevention, containment, and cleanup contingency measures including a health and safety plan to be implemented in accordance with [29 CFR 1926.65](#).
- g. 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. Wastes shall be cleaned up and containerized daily.
- h. Include any process that may alter or treat waste rendering a hazardous waste non hazardous.
- i. Unit cost for hazardous waste disposal according to this plan.

1.5.2.9 Environmental, Safety and Health Compliance

NOTE: Include applicable State, regional, and local laws, regulations, and statutes. Do careful research since not all State and local laws are similar. Verify with the State or local authorities whether the city, county, State and/or the USEPA has jurisdiction and whether licensing and/or certification is required. Also identify the authority or code sponsor and the laws, regulations and statutes cited under paragraph entitled "References" using complete title and number.

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 requirement shall apply. [The following [local] [and] [State] laws, ordinances, criteria, rules and regulations regarding removing, handling, storing, transporting, and disposing of lead-contaminated materials apply:

- a. [_____]
- b. [_____]
- c. [_____]

[[Licensing] [and certification] in the state of [_____] is required.]]

1.5.3 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.

1.6 EQUIPMENT

1.6.1 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 shall comply with the requirements of 29 CFR 1926.62.

1.6.2 Special Protective Clothing

Furnish personnel who will be exposed to lead-contaminated dust with proper [disposable] [uncontaminated, reusable] 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.

1.6.3 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.

1.6.4 Vacuum Filters

UL 586 labeled HEPA filters.

1.6.5 Equipment for Government Personnel

NOTE: Verify the number of sets required with the Contracting Officer.

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 shall include disposable whole body covering, including appropriate foot, head, eye, and hand protection. PPE shall remain the property of the Contractor. The Government will provide respiratory protection for the Contracting Officer.

1.7 PROJECT/SITE CONDITIONS

1.7.1 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

Not used.

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 Protection

3.1.1.1 Notification

- a. Notify the Contracting Officer [20] [_____] days prior to the start of any lead work.

[b. [Occupant Notification](#)

NOTE: Projects in target housing involving improvement, or maintenance (renovation or repair), that disrupt more than 2 square feet of painted surface while being occupied requires occupant notification prior to work.

Submit occupant written acknowledgment of the delivery of lead hazard information pamphlet (EPA 747-K-99-001 "Protect Your Family From Lead in Your Home") prior to commencing the renovation work for each affected unit using language provided in [40 CFR 745](#) Subpart E.]

3.1.1.2 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.
- 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 shall comply with the requirements of [29 CFR 1926.62](#).

3.1.1.3 Furnishings

**NOTE: Verify with the activity furniture or
equipment requirements.**

[The Government will remove furniture and equipment from the building before lead work begins.]

[Furniture [_____] and equipment will remain in the [building] [lead control area]. Protect and cover furnishings or remove furnishings from the work area and store in a location approved by the Contracting Officer.]

[Existing [furniture] [and] [equipment] is lead contaminated,
[decontaminate] [dispose of as lead contaminated waste].]

3.1.1.4 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 0.15 mm 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.]

3.1.1.5 Decontamination Shower Facility

Provide clean and contaminated change rooms and shower facilities in accordance with this specification and 29 CFR 1926.62.

3.1.1.6 Eye Wash Station

Where eyes may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes shall be provided within the work area.

3.1.1.7 Mechanical Ventilation System

- a. To the extent feasible, use local exhaust ventilation or other collection systems, approved by the CP. Local exhaust ventilation systems shall be evaluated and maintained 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.

3.1.1.8 Personnel Protection

Personnel shall 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.

3.2 ERECTION

3.2.1 Lead Control Area Requirements

NOTE: Choose the first paragraph if PWL or MCL will be removed by means that will not create airborne, dust containing lead (such as carefully unfastening sheets containing lead from walls). Choose the second paragraph if removal practice will create airborne, dust containing lead (such as sanding, sawing, grinding, thermal cutting or digging or demolition activities). Select the control method that will ensure efficiency and prevents lead from escaping outside of the lead control area.

[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.]

NOTE: The Designer should consider the use of viewing ports for lead control areas under 100 square meters 1,000 square feet to save inspection time.

[Full containment - Contain removal operations by the use of [critical barriers] [and HEPA filtered exhaust] [a negative pressure enclosure system with decontamination facilities and with HEPA filtered exhaust if required by the CP]. For containment areas larger than 100 square meters 1,000 square feet install a minimum of two 450 mm 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.]

3.3 APPLICATION

3.3.1 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 [or 40 CFR 745], and as specified herein. Dispose of all PWL or MCL and associated waste in compliance with federal, State, and local requirements.

3.3.2 Paint with Lead or Material Containing Lead Removal

NOTE: Use bracketed prohibition on manual and power sanding/grinding of lead surfaces/materials when appropriate. Large scale manual or power sanding/grinding of lead containing surfaces should never be allowed in family housing, child care facilities, administrative buildings, galleys, barracks, etc., due to problems associated with the resulting dust fallout/contamination of crevices and cracks which may retain unseen quantities of

lead-contaminated dust. Use of these techniques for exteriors should be limited because the resulting airborne dust could result in significant contamination of the ground in the immediate vicinity of the facility. Manual or power sanding/grinding of lead containing surfaces may be an acceptable work method only if appropriate engineering controls for personnel/environmental protection are in place.

NOTE: For commercial/public buildings and industrial buildings, the designer will have to ascertain appropriate procedures, methods and techniques to control lead hazards. The use of enclosure or soil barriers as a control system requires the input of engineering/ architectural experts familiar with these controls. Add additional paragraphs to address unique local or state requirements.

[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. [_____]

3.3.2.1 Paint with Lead or Material Containing Lead - Indoor Removal

Perform [manual] [mechanical] removal [and thermal cutting] in the lead control areas using enclosures, barriers or containments [and powered locally exhausted tools]. Collect residue [debris] for disposal in accordance with federal, State, and local requirements.

3.3.2.2 Paint with Lead or Material Containing Lead - 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) shall be job dependent and presented in the Lead Compliance Plan.

3.3.3 Personnel Exiting Procedures

Whenever personnel exit the lead-controlled area, they shall perform the following procedures and shall 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.

NOTE: Showering is the preferred method of personal

decontamination. However, extenuating circumstances may prevent the use of a shower at the work site. In that event, choose the alternate selection. Note that the alternate is generally a very expensive method and should be used only when showering at the site is unfeasible.

[c. Shower.

]

[c. Wash hands and face at the site, don appropriate disposable or uncontaminated reusable clothing, move to an appropriate shower facility, shower.]

d. Change to clean clothes prior to leaving the clean clothes storage area.

3.4 FIELD QUALITY CONTROL

3.4.1 Tests

3.4.1.1 Air and Wipe Sampling

Conduct sampling for lead in accordance with 29 CFR 1926.62 and as specified herein. Air and wipe sampling shall be directed or performed by the CP.

- a. The CP shall 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 twenty-five 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-based paint removal operations are performed, in areas immediately adjacent to the lead control area. Sufficient area monitoring shall be conducted to ensure unprotected personnel are not exposed at or above 30 micrograms per cubic meter of air. If 30 micrograms 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. Removal work shall resume only after the CP and the Contracting Officer give approval.

NOTE: Include the following paragraph for high profile, sensitive work such as present in family housing, child care facilities, administrative buildings, kitchens, barracks, etc. Use the following paragraph along with clearance certification by a third party consultant specified in paragraph entitled "Clearance Certification" to

determine if significant contamination was due to the contract work. Surface dust sampling to determine clearance (i.e., that the work has not contaminated surfaces within and adjacent to the control area) should be performed by a third party to reduce a conflict of interest. Samples must be conducted by an individual not paid or employed or otherwise compensated by the lead Contractor. State or local regulations may require third party.

- [e. Before any work begins, [a third party consultant shall] collect and analyze baseline wipe [and soil] samples in accordance with methods defined by federal, State, and local standards inside and outside of the physical boundary to assess the degree of dust contamination in the facility prior to lead disturbance or removal.]

NOTE: Lead hazard control area containment adequacy should be checked by surface wipe sampling of floors in all buildings that are or will be occupied. The exceptions being buildings to be demolished or industrial buildings.

- [f. Surface Wipe Samples - Collect surface wipe samples on floors at a location no greater than 3 m 10 feet outside the lead control area at a frequency of once per day while lead removal work is conducted in occupied buildings. Surface wipe results shall meet criteria in paragraph "Clearance Certification.]

3.4.1.2 Sampling After Removal

After the visual inspection, [conduct soil sampling if bare soil is present during external removal operations and] collect wipe [and soil] samples according to the HUD protocol contained in HUD 6780 to determine the lead content of settled dust in micrograms per square meter foot of surface area [and micrograms per gram (ug/g) parts per million (ppm) for soil].

[3.4.1.3 Testing of Material Containing Lead Residue

NOTE: Include this paragraph when the residue is questionable with respect to its lead content, otherwise delete.

Test residue in accordance with 40 CFR 261 for hazardous waste.

]3.5 CLEANING AND DISPOSAL

3.5.1 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 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 shall then certify in writing that the area has been cleaned of lead contamination before clearance testing.

3.5.1.1 Clearance Certification

NOTE: The second paragraph must be used for high profile, sensitive work such as present in family housing, child care facilities, kitchens, etc. For work in administrative buildings or the conversion of industrial lead work areas (e.g., firing ranges) into non-industrial work areas open for public access, use the third paragraph otherwise delete. For industrial buildings, use visual clearance only. Surface dust sampling to determine clearance (i.e., that the work has not contaminated surfaces within and adjacent to the control area) should be performed by a third party to reduce a conflict of interest.

The CP shall certify in writing that air samples collected outside the lead control area during paint removal operations are less than 30 micrograms per cubic meter of air; the respiratory protection used for the employees was adequate; the work procedures were performed in accordance with 29 CFR 1926.62; and that there were no visible accumulations of material and dust containing lead left in the work site. Do not remove the lead control area or roped off boundary and warning signs prior to the Contracting Officer's acknowledgement of receipt of the CP certification.

- [The third party consultant shall certify surface wipe sample results collected inside and outside the work area are [less than 40 micrograms per 0.1 square meter square foot on floors, less than 250 micrograms per 0.1 square meter square foot on interior window sills and less than 400 micrograms per 0.1 square meter square foot on window troughs] [not significantly greater than the initial surface loading determined prior to work].]
- [The third party consultant shall certify surface wipe sample results collected inside and outside the work area are less than 200 micrograms per 0.1 square meter square foot on floors or horizontal surfaces.]
- [Certify surface wipe samples are not significantly greater than the initial surface loading determined prior to work.]
- [Clear the lead control area in industrial facilities of all visible dust and debris.]
- [For exterior work, soil samples taken at the exterior of the work site shall be used to determine if soil lead levels had increased at a statistically significant level (significant at the 95 percent confidence limit) from the soil lead levels prior to the operation. If soil lead levels either show a statistically significant increase above soil lead levels prior to work or soil lead levels above any applicable federal or

state standard for lead in soil, the soil shall be remediated.]

3.5.2 Disposal

NOTE: Notify the activity that Federal regulations (40 CFR 260-265) require a USEPA generator identification number for use on the Uniform Hazardous Waste Manifest prior to commencement of removal work. A USEPA generator identification number will not be required if it is certain that the work will not generate HW.

NOTE: Research State, regional, and local laws, regulations, and statutes and revise the specifications accordingly. Proper segregation and handling of waste can significantly reduce the generated volume (and cost) of disposing hazardous wastes.

NOTE: Research State, regional, and local requirements regarding the recycling of lead wastes. Ensure that other hazardous components are not present. The entire waste stream or discreet portions of the waste may be appropriately packaged and transported for recycling (Consider Section 01 74 19 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT). If waste is eligible for sanitary landfill or C&D landfill disposal, some of these requirements are not applicable.

- a. All material, whether hazardous or non-hazardous shall be disposed 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.
- b. 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.
- c. Dispose of lead-contaminated material classified as hazardous waste at an [EPA] [or] [State] approved hazardous waste treatment, storage, or disposal facility off Government property.
- d. Store waste materials in U.S. Department of Transportation (49 CFR 178) approved 208 liter 55 gallon drums. Properly label each drum to identify the type of waste (49 CFR 172) and the date the drum was filled. For hazardous waste, the collection drum requires marking/labeling in accordance with 40 CFR 262 during the accumulation/collection timeframe. The Contracting Officer or an authorized representative will assign an area for interim storage of

waste-containing drums. Do not store hazardous waste drums in interim storage longer than 90 calendar days from the date affixed to each drum.

- e. 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.

3.5.2.1 Disposal Documentation

NOTE: Include the following paragraph if the Contractor is to dispose of waste.

Submit written evidence to demonstrate the hazardous waste treatment, storage, or disposal facility (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. Contractor shall provide a certificate that the waste was accepted by the disposal facility. [Provide turn-in documents or weight tickets for non-hazardous waste disposal.]

3.5.2.2 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 certifying the amount of lead-containing materials or non-hazardous waste delivered is returned and a copy is furnished to the Government.

-- End of Section --