**SECTION 02 83 10 - LCP/LBP DISTURBANCES USING OSHA LEAD SAFE WORK PRACTICES**

1. **GENERAL**

**1.01 SCOPE OF WORK**

 A. The work covered by this Specification shall consist of furnishing all labor, materials, tools,

 and equipment necessary to control and mitigate potential lead-based paint (LBP) and lead-

containing paint (LCP) material hazards during demolition/renovation activities pertaining to the project at (Name of facility, building ID(s), address, DASNY project name and number).

This Specification shall be used as a guideline for Contractors who complete the demolition/renovation activities pertaining to this Project***,*** as detailed within Section 1.01, B of this Specification. The intent of this Specification is to remain in conformance with Occupational Safety and Health Administration (OSHA) Regulation 29 CFR 1926.62 “Lead Exposure in Construction” and to maintain an airborne concentration of lead-dust below the Action Level. This Specification is written to outline the worst-case scenario regarding lead safe work practices.

B. The following is a detailed listing of identified LBP and/or LCP, above the laboratory and/or

 device detection limit:

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| --- | --- | --- | --- | --- | --- |
| **Location** | **Component** | **Substrate** | **Concentration** | **Color** | **Condition** |
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| *It should be noted that several components tested did contain minimal lead-concentrations below the EPA threshold level of 1.0 mg/cm2 or 0.5% by weight for classification as LBP and are considered lead-containing paints or coatings by 29CFR 1926.62. OSHA does not recognize a minimum limit for lead concentration in paint for the purpose of disturbance. Personal Air monitoring of workers performing demolition/cleaning/disturbance of painted surfaces shall be completed to document personnel occupational exposure and reviewed by the Contractor’s Competent Person. Items containing any amount of lead concentration are considered lead-containing paints or coatings per 29 CFR 1926.62. See project environmental survey report for lead paint reports. Lead paint summary information is located within the Appendices of this specification.* |

For Storage, Transportation and Disposal requirements, refer to the DASNY Standard Specification for the Identification and Disposal of Hazardous Waste 028600.

1. Manual demolition, scraping and sanding of lead-based paint or lead containing paint coated surfaces, power tool cleaning with dust collection systems shall be performed in conjunction with engineering and work practice controls meeting the requirements of 29 CFR 1926.62(e)(1).
2. Components with LBP and LCP shall be removed intact to the extent practicable. A 6-mil polyethylene drop cloth shall be placed around and/or beneath the component, prior to its removal, to catch any paint chips that may become dislodged. Intact components shall be wrapped in a layer of clear 6-mil polyethylene prior to movement to the disposal container. The area around the component removal shall be wet wiped and high-efficiency particulate air (HEPA) filter vacuumed, including the tent enclosure (if applicable). The polyethylene sheeting shall be carefully folded in on itself and placed in a 6-mil disposal bag and sealed closed. All debris shall be properly disposed of in accordance with the respective waste stream Resource Conservation Recovery Act (RCRA) Toxicity Characteristic Leaching Procedure (TCLP) testing results.
3. Chemical stripping may be used for LBP and LCP removal on surfaces that will be subjected to welding, cutting, torch burning or where it is the only acceptable procedure. No chemical strippers containing methylene chloride shall be used by the Contractor on this project. SDS for stripping and neutralizing chemicals must be reviewed and approved by the Consultant prior to use and a copy shall be posted at the site.
4. The Contractor’s use of a subcontractor (must be approved) shall not relieve the Contractor of full responsibility for the work to be performed.
5. If available and approved by the Competent Person, the Contractor may utilize exposure assessment data that is compliant with OSHA and was obtained within the last twelve (12) months from previous jobs conducted under similar conditions, control methods, work practices and environmental conditions to be used in this contract for LCP disturbances only. Other objective data may be used to demonstrate that work activities in this contract will not result in occupational exposures to airborne lead that exceeds the PEL for LCP disturbances only. The assessment shall include comparable lead concentrations (LCP only) in paint/coating materials, work practices, engineering controls and work schedules.
6. The Contractor must provide to his workers the following: Respiratory protection in accordance with the Contractor’s Respiratory Protection Program, personal protective clothing, lead-free change areas, hand washing/shower facilities, blood lead level monitoring and training per 29 CFR 1926.62. **Respiratory Protection is required for all LBP disturbances**.
7. The Contractor shall ensure that any HVAC equipment intakes within and around the control areas are protected by shutting down the units. The Contractor shall alter the size and extent of the isolation barriers as necessary due to weather conditions, functional space use and density of building occupants in the vicinity, as required.

**1.02 DEFINITIONS, REGULATIONS & REFERENCE STANDARDS**

1. Definitions (excerpted from 29 CFR 1926.62)
2. **Action Level:** Employee exposure, without regard to the use of respirators, to an airborne lead concentration of 30 micrograms per cubic meter (30 ug/m3) calculated as an 8-hour time-weighted average (TWA). Exceedance of the Action Level requires blood lead monitoring implementation.
3. **Competent Person:** One who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has the authorization to take prompt corrective measures to eliminate them. For LBP work, the Competent Person shall also be the on-site Supervisor/Foreman in-charge of the work crew.
4. **Exposure Assessment:** Each employer who has a workplace or operation covered by 29 CFR 1926.62 shall initially determine if any employee may be exposed to lead at or above the Action Level.
5. **Lead:** Metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.
6. **Lead-Based Paint (LBP):** Paint, varnish, shellac or other coatings on surfaces that contain 1.0 milligram per square centimeter (1.0 mg/cm2) or more lead or 0.5% or more lead by weight. The concentration 0.5% is equivalent to:
	1. 5,000 parts per million (5,000 ppm) and;
	2. 5,000 milligrams per kilogram (5,000 mg/kg)
7. **Lead-Containing Paint (LCP):** Paint, varnish, shellac or other coatings on surfaces that contain measurable concentrations less than 1.0 milligrams per square centimeter (1.0 mg/cm2) lead or less than 0.5% or more lead by weight including equivalents less than 5,000 ppm and 5,000 mg/kg. This does not include paint, varnish, shellac or other coatings on surfaces where the concentration is below the detection limit of the respective laboratory method / device.
8. **LBP Inspection:** A surface by surface investigation to determine the presence of LBP. A report is then issued that identifies if there is LBP present and where it is located.
9. **Lead Risk Assessor:** EPA trained and certified to conduct LBP inspections and collect samples for the presence of lead in air, dust and soil for the purposes of abatement clearance testing as well as conduct risk assessments.
10. **Permissible Exposure Limit (PEL):** The limit above which the employer shall not expose workers to lead. The current PEL for lead is 50 ug/m3  over an eight-hour time-weighted-average for all employees covered.
11. General Requirements

The Contractor is required to perform all work related to this project in strict accordance with all applicable Federal, State and Local regulations.

 Where these requirements vary, the most stringent shall apply.

1. Specific Requirements
2. American National Standards Institute (ANSI)
ANSI Z9.2-79 – Fundamentals Governing the Design and Operation of Local Exhaust Systems.
3. Z88.2-80 – Practice for Respiratory Protection.
4. Code of Federal Regulations (CFR)
5. 29 CFR Part 1910.120 – Hazardous Waste Operations and Emergency Response.
6. 29 CFR Part 1910.134 – Respiratory Protection.
7. 29 CFR Part 1910.146 – Confined Space Entry Program.
8. 29 CFR Part 1910.1025 – Lead (General Industry Standard).
9. 29 CFR Part 1910.1200 – Hazard Communication.
10. 29 CFR Part 1926.55 – Gases, Vapors, Fumes, Dusts and Mists.
11. 29 CFR Part 1926.57 – Ventilation.
12. 29 CFR Part 1926.62 – Lead (Construction Industry Standard).
13. 40 CFR Part 260 – Hazardous Waste Management Systems: General.
14. 40 CFR Part 261 – Identification and Listing of Hazardous Waste.
15. 40 CFR Part 262 – Generators of Hazardous Wastes.
16. 40 CFR Part 263 – Transporters of Hazardous Waste.
17. 40 CFR Part 264 – Owners and Operators of Hazardous Waste Treatment, Storage & Disposal Facilities.
18. 40 CFR Part 265 – Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage & Disposal Facilities.
19. 40 CFR Part 268 – Land Disposal Restrictions.
20. 40 CFR Part 745 – Lead; Requirements for Lead-Based Paint Activities in Child Occupied Facilities
21. 49 CFR Parts 170-178 – Department of Transportation Regulations.
22. New York Codes of Rules and Regulations (NYCRR)
23. 6 NYCRR Part 360 – Solid Waste Regulations.
24. 6 NYCRR Part 364 – Waste Transporter Permits.
25. 6 NYCRR Part 370-373 – Hazardous Waste Regulations.

22. Steel Structures Painting Council (SSPC)

1. SSPC-Guide 6 – Guide for Containing Debris Generated During Paint Removal Operations.
2. SSPC-Guide 7 – Guide for the Disposal of Lead-Contaminated Surface Preparation Debris.

23. Underwriters Laboratories. Inc. (UL)

1. UL 586 – High Efficiency, Particulate Air Filter Units.

**1.03 QUALITY ASSURANCE**

The Contractor’s Competent Person is required to maintain a copy of the following documents on-site:

1. Qualifications
2. Contractor: Documentation that the Contractor has prior experience on LBP and LCP activity projects similar in nature and extent to ensure the capability to perform the required work procedures in a satisfactory manner.
3. Competent Person: Certification that the Contractor’s full-time on-site Competent Person meets the Competent Person requirements of 29 CFR Part 1926.62 and is experienced in administration and supervision of LBP and LCP activity projects, including work practices, protective measures for building and personnel, disposal procedures, etc. The Competent Person shall also be the project Supervisor.
4. Contractor’s Testing Laboratory: Documentation that the laboratory performing the OSHA personal sample analysis is an EPA National Lead Laboratory Accreditation Program (NLLAP) accredited laboratory and that it is listed proficient in the NIOSH/EPA Environmental Lead Proficiency Analytical Testing Program (ELPAT), and is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. Certification shall include accreditation for heavy metal analysis, and a Quality Assurance and Quality Control Program. Currently, the American Association for Laboratory Accreditation (ASLA) and the American Industrial Hygiene Association (AIHA) are the EPA recognized laboratory accreditors. Documentation shall include the date of accreditation or reaccreditation.
5. Blood Lead Testing Laboratory: Adequate documentation that the laboratory is certified to perform blood lead analysis for the State where the work site is located.
6. Respiratory Protection Devices

Manufacturer’s NIOSH certification for respiratory protection devices utilized on the site.

1. Cartridges, Filters, and Vacuum Systems

Manufacturer’s NIOSH certification of approval of respirator cartridges (organic vapor, acid gas, mist, dust, high efficiency particulate); High Efficiency Particulate Air (HEPA) filtration capabilities for all cartridges, filters, and HEPA vacuum systems.

1. Medical Examination and Records
2. Certification that employees who are involved in LBP and LCP work have received medical examinations and will receive continued medical surveillance, including blood lead level monitoring, as required by 29 CFR Part 1926.62, 29 CFR Part 910.1200, 29 CFR Part 1910.120 and by the state and local regulations pertaining to such work. Records shall be retained, at Contractor expense, in accordance with 29 CFR Part 1910.20.
3. Provide medical surveillance to workers until exposure monitoring reveals that workers are not exposed to airborne lead at or above the Action Level of 30 ug/m3. This consists of a blood test measuring the level of lead and zinc protoporphyrin by a licensed physician. Further testing and medical exams may be necessary depending on the results of initial blood tests and/or the initial exposure assessment.
4. Training

Training certification shall be maintained and posted at the site, prior tothe start of work involving LBP and LCP work, for all of the Contractors’ workers, supervisors and Competent Person. Training shall meet the requirements of 29 CFR Part 1926.62, 29 CFR Part 1926.59, 29 CFR Part 1910.1200 and 49 CFR 172. Training shall be provided prior to the time of job assignment and as required by the regulations thereafter. The project specific training shall, at a minimum, include the following.

1. Lead Paint Awareness Training as per 29 CFR 1926.62.
2. Specific nature of the operation, which could result in exposure to lead.
3. Purpose, proper selection, fitting, use and limitations of respirators.
4. Purpose and description of the medical surveillance program and the medical removal protection program, including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females, hazards to the fetus and additional precautions for employees who are pregnant).
5. Relevant engineering controls and good work practices.
6. The contents of any compliance plan in effect.
7. Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.
8. The employee’s right of access to records under 29 CFR part 1910.20.
9. Respiratory Protection Program
10. Furnish each employee required to wear a negative pressure respirator or other appropriate type with a respirator fittest at the time of initial fitting and at least every 12 months thereafter as required by 29 CFR Part1910.134 and 29 CFR Part 1926.62.
11. Establish and implement a respiratory protection program as required by ANSI Z88.2, 29 CFR Part 1910.134 and 29 CFR Part 1926.62.
12. All workers are required to don respirator(s) with the appropriate level of protection commensurate with the airborne concentrations of lead in which they are working. The level of protection will be determined by the Contractor, based on objective air monitoring data.

**1.04 ON-SITE SUBMITTALS**

The Contractor’s Competent Person is required to maintain a copy of the following documents on-site:

1. Certifications

Prior to the start of work, maintain the on-site, required certifications and licenses listed above in Section 1.03.

1. Equipment List

Maintain a list of equipment items to be used in the work, including brand names, model, capacity, performance characteristics, quantities, and other pertinent information.

1. LBP and LCP Safe Work Practice Compliance Plan

The contractor shall prepare a detailed LBP and LCP Safe Work Practice Compliance Plan that identifies the work procedures, health and safety measures to be used in LBP and LCP work procedures; and that addresses spill prevention, containment, and emergency response procedures. The Plan shall be maintained on-site. The plan shall address the methods to be undertaken during LBP and LCP disturbances to include all requirements of 1926.62(e)(2)(ii) including, but not limited to the following key elements:

1. LBP and LCP containment methods to control employee exposure to lead at or below the permissible exposure limit.
2. Training requirements as required by Federal, State, and Local regulations.
3. Unique problems associated with the LBP and LCP project.
4. Sketch of location and details of LBP and LCP control areas, decontamination procedures. Refer to the DASNY Standard Specification for the Identification and Disposal of Hazardous Waste 028600 for waste storage area requirements.
5. Eating, drinking, smoking, and rest room procedures.
6. Sequencing of LBP and LCP related work.
7. Personal protective equipment and respiratory protection program, including controls.
8. Engineering controls, containment structures and safety measures. Refer to 1.07, D of this Section for HEPA filtered negative air unit requirements, as applicable.
9. Worker exposure assessment procedures.
10. Work Practice controls.
11. Housekeeping.
12. Hygiene facilities and practice.
13. Medical surveillance, including medical removal procedures.
14. Sampling, testing and analytical methods for personal air sampling requirements of 29 CFR Part 1926.62. Procedures must include frequency, locations, sampling, and analytical methods to be used.
15. Contractor to include the segregation and minimization of lead waste streams from construction and demolition waste in their lead-based paint management plan.
16. Visual clearance log for each control area that is maintained by the Contractor’s Competent Person.
17. Compliance Program

 Contractor’s Compliance Program prepared in accordance with 29 CFR Part 1926.62 (e) (2) shall be maintained on-site.

1. Sampling and Laboratory Analysis Reports

 Maintain on-site all field sampling logs for all personal air samples taken, including copies of laboratory analysis reports and chain of custody records for all sample analyses.

1. Competent Person certification per Sections 1.02 and 1.03.

**1.05** **CLOSEOUT SUBMITTALS:** At the conclusion of the LBP/LCP project, the Contractor shall provide the following closeout submittals:

Refer to DASNY Standard Specification for the Identification and Disposal of Hazardous Waste 02 86 00 for closeout document requirements related to the disposal of hazardous waste, if applicable.

Submit copies of all “Visual Clearance Logs” to the DASNY Project Manager for owner’s reference.

Signed Certification from the Contractor’s Competent Person that all required documentation has been provided.

**1.06 POSTED WARNINGS & NOTICES**

The following regulations, warnings and notices shall be posted at the work site in accordance with 29 CFR Part 1926.62.

1. Regulations

 A copy of applicable Federal, State, and Local regulations shall be maintained at the work site.

1. Warning Signs

 Warning signs shall be provided at approaches to LBP/LCP control areas. Signs shall be located at a distance from the LBP and LCP control areas that will allow personnel to read the sign and take the necessary protective actions required before entering the LBP/LCP control area. The signs shall comply with the requirements of 29 CFR Part 1926.62.

1. Worker Information

 Right-to-know notices shall be placed in clearly visible areas of the work site in compliance with Federal, State and Local regulations.

1. Exposure Air Monitoring Results

 Exposure air monitoring results shall be prepared in order to be easily understood by the workers and shall be placed in a clearly visible area of the work site.

1. Emergency Telephone Numbers

 A list of telephone numbers shall be posted at the site. The list shall include numbers of the local hospital, emergency squad, police and fire departments, Government and Contractor representatives who can be reached 24 hours per day as well as professional consultants directly involved in the project.

**1.07 EQUIPMENT & MATERIALS**

Sufficient quantities of health and safety materials required by 29 CFR Part 1926.62, and other materials and equipment needed to complete the project, shall be available and kept on the site.

1. Respirators

 Air-purifying respirators shall be approved by NIOSH for use with dust, fumes and mists having permissible exposure limits less than 0.05 milligrams per cubic meter (i.e. have high-efficiency particulate air [HEPA] filters) and for other hazardous airborne contaminants that may be encountered, as determined by the Competent Person. The Contractor shall furnish, at no cost to personnel/employees, respirators to provide protection from airborne concentrations of lead. Respirators shall comply with the requirements of 29 CFR Part 1926.62 and shall be used in accordance with 29 CFR Part 1926.62, 29 CFR Part 1926.103 and 29 CFR Part 1910.134.

1. Respirator Cartridges

 A sufficient supply of respirator cartridges shall be maintained at the work site to provide new cartridges to employees and authorized visitors throughout the duration of the project. Cartridges shall be replaced according to the manufacturer’s recommendations, when breathing becomes difficult, or if the cartridges become wet.

1. Protective Clothing
2. The Contractor shall furnish, at no cost to personnel/employee, equipment/ clothing for protection from airborne and waterborne LBP and LCP debris. An adequate supply of these items shall be available for worker and authorized visitor use. Workers and visitors shall not take protective clothing and equipment off the work site at any time. Protective clothing includes:
3. Coveralls (Whole Body Protective Coverings): Full-body coveralls and head covers shall be worn by workers in the control area as necessary. Sleeves shall be secured at the wrist and pants legs at the ankle with tape. Permeable clothing shall be provided in heat-stress conditions. Where non-disposable coveralls are provided, these coveralls shall be cleaned after each wearing and kept within the control area or decon/airlock (bagged). Cleaning of coveralls and other non-disposable clothing shall be in accordance with the provisions for cleaning in 29 CFR Part 1926.62.
4. Boots: Work boots with nonskid soles or impermeable work boot covers shall be worn by workers. Where required by OSHA, safety boots (steel toe or steel toe and shank) shall be worn. Paint the uppers of boots red with waterproof enamel. Do not allow boots to be removed from the control area for any reason after being contaminated with LBP or LCP debris. Keep within control area or decon/airlock (bagged).
5. Gloves: Inner gloves, appropriate for items and hazards encountered, and disposable outer work gloves shall be provided to each worker and shall be worn while the worker is in the control area. Glove material shall be appropriate for the specific chemical exposure. Gloves shall not be removed from the control area and shall be disposed of as LBP or LCP contaminated waste at the end of the work.
6. Hard Hats: Head protection (hard hats) shall be provided as required by OSHA for workers and authorized visitors. Protective plastic-strap suspension hats shall be used. Hard hats shall be worn at all times when work is in progress. Hard hats shall remain in the control area until the project is completed. Hard hats shall be thoroughly cleaned, decontaminated, dried and bagged before being removed from the control area at the end of the project.
7. Eye Protection: Fog-proof goggles for personnel engaged in LBP and LCP operations shall be worn when the use of a full-face piece respirator is not required and kept within control area or decon/airlock (bagged) until completion of project.
8. Negative Air Pressure System

When a LBP or LCP control area requires the use of an airtight containment barrier, a negative air pressure system shall be used and pressure differential recordings taken. LBP and LCP shall not be removed from the LBP/LCP control area until the proper engineering controls and HEPA filtration systems are in place.

1. HEPA Filter Requirements

The negative air pressure system shall be equipped with approved HEPA filters per UL 586. Negative air pressure equipment shall be equipped with new HEPA filters, and shall be sufficient to maintain a minimum pressure differential of minus 5 Pascals(Pa), equivalent to 0.02 inch of water column relative to adjacent, unsealed areas. Negative air pressure system minimum requirements are listed below.

1. The unit shall 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. The units shall be clean and sealed (intake & exhaust) at all times when not operating in a control area.
2. The HEPA filter shall be certified as being capable of removing particles as small as 0.3 micrometers at a minimum efficiency of 99.97 percent. 700 hours is the manufacturer life recommendation of a HEPA filter (approximately 1 month of continuous operating).
3. The unit shall be capable of continuing to deliver no less than 70 percent of rated capacity when the HEPA filter is 70 percent full or measures 620 Pa (2.5 inches of water) static pressure differential on a magnehelic gauge.
4. The unit shall be equipped 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 shall be calibrated in accordance with the manufacturer’s recommendations. Record manually manometer readings of the pressure differential between the LBP control area and adjacent unsealed areas at the beginning and end of each work day.
5. The unit shall be equipped 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. The unit shall be equipped with an electronic mechanism that automatically shuts the machine off in the event of a filter breech or absence of a filter.
7. The unit shall be equipped with an audible horn that sounds an alarm when the machine has shut itself off.
8. The unit shall be equipped with an automatic safety mechanism that prevents a worker from improperly inserting the main HEPA filter.
9. The unit shall be ducted through the containment barrier wall to the exterior of the building. The unit shall not be exhausted into any interior areas. If exhausting to the exterior is not feasible, utilize an unoccupied area or room that is large enough to handle the volume of air with two units connected in series. Applicable warning signage shall be posted at this location. DASNY prior approval is required if exhausting into the interior of the building.
10. Number of Units Required

The air within the containment barrier shall be changed at least once every 15 minutes by a continuously operating negative air pressure system, until the LBP/LCP control area barrier is removed. Filters shall be replaced as necessary to maintain the efficiency of the system. A back-up unit shall be maintained on-site.

1. Auxiliary Generator

If site conditions can’t provide power, an auxiliary generator shall be provided. The generator shall not present a carbon monoxide hazard to workers.

1. Discontinuing Negative Air Pressure System

The negative air pressure system shall not be shut down during LBP/LCP work unless authorized by the DASNY’s third-party environmental consultant. At the completion of the LBP/LCP work procedures and disposal project, units shall be run until removal is completed satisfactorily and full cleanup has been completed and satisfactory clearance has been achieved. Dismantling of the negative air pressure systems shall conform to the written decontamination procedures. Pre­filters shall be removed and properly disposed. The intake and exhaust of the machines shall be sealed with polyethylene to prevent environmental contamination.

1. Expendable Materials
2. Polyethylene Sheet and Bags - General

Polyethylene sheet and bags shall be minimum 6-mil thick. Bags shall have pre-printed labels, and 5-inch (minimum) long plastic ties, pointed and looped to secure the filled bags. Polyethylene sheets shall be in roll sizes to minimize seams.

1. Polyethylene Sheet - Flame Resistant

Where a potential for fire exists, flame-resistant polyethylene sheets shall be provided. Polyethylene film shall conform to the requirements of NFPA 701.

1. Polyethylene Sheet - Reinforced

Reinforced polyethylene sheet shall be provided where high skin strength is required such as where it constitutes the only barrier between the LBP control area and the indoor and outdoor environments. The sheet stock shall consist of translucent, nylon-reinforced or woven-polyethylene thread laminated between two layers of polyethylene film. Film shall meet flame resistant standards of NFPA 701.

1. Tape and Adhesive Spray

Tape and adhesive shall be capable of sealing joints between polyethylene sheets and for attachment of polyethylene sheets to adjacent surfaces. After dry application, tape or adhesive shall retain adhesion when exposed to wet conditions, including amended water. Tape shall be minimum 2 inches wide, industrial strength.

1. Containers

DOT approved impermeable containers shall be used to receive and retain LBP and LCP waste and debris and lead contaminated material until disposal. Containers shall be labeled in accordance with EPA, DOT and OSHA standards, as applicable for the type of waste. Waste streams shall be segregated in a manner to reduce the potential volume of hazardous waste generated.

1. Chemicals

 Chemicals, including caustics and paint strippers, shall be properly labeled, stored in leak-tight containers and properly/safely secured from the general public.

1. Vacuum Systems

 HEPA filtered vacuum systems shall be used during LBP/LCP operations which generate dust. The systems shall be suitably sized for the project, and filters shall be capable of removing particles as small as 0.3 micrometers at a minimum efficiency of 99.97 percent. Vacuum opening, wands and hoses shall be sealed at all times when not in a control area.

1. Chemical Paint Strippers

 Chemical paint strippers shall contain no methylene chloride.

1. Chemical Paint Stripper Neutralizer

Neutralizers for paint strippers shall be compatible with the substrate and suitable for use with the chemical stripper that has been applied to the surface.

1. Storage of Materials

 Materials shall be stored in an approved enclosed structure, which protects them from damage, rain, wind, etc. and contamination. During periods of cold weather, plastic materials shall be protected from the cold. Regularly inspect materials to identify damaged or deteriorating items. Damaged or deteriorated items shall not be used and shall be removed from the site as soon as they are discovered. Stored materials shall not present a hazard or an inconvenience to workers, visitors, employees and/or other building occupants.

**PART 2 – EXECUTION**

**2.01 WORK PROCEDURES**

 LBP and LCP work procedures and related work shall be performed in accordance with the accepted Contractor’s LBP and LCP Safe Work Practice Compliance Plan, 29 CFR Part 1926.62 and as specified herein. LBP/LCP waste and debris, lead contaminated debris and personal protective clothing and equipment shall be disposed of in compliance with Federal, State, and Local regulations and in accordance with the respective waste stream TCLP testing results.

1. Personal Protection Procedures

 **Respiratory Protection is required for all LBP disturbances.** Personnel shall wear and use protective clothing and equipment as specified and required by 29 CFR Part 1926.62 and 29 CFR Part 1910.120. Eating, smoking, drinking, chewing tobacco, chewing gum, applying makeup and use of non-work-related walkie-talkies/phones shall not be permitted in the LBP and LCP control area. Personnel of trades not engaged in the LBP or LCP work procedures and disposal of LBP and LCP shall not be exposed at any time to airborne concentrations of lead equal to or in excess of 30 micrograms per cubic meter of air (30 ug/m3). Electrical service shall be disconnected when wet removal is performed, and temporary electrical service protected by a ground fault circuit interrupter (GFCI) shall be provided.

1. Safety and Health Procedures

The Competent Person shall be present on the work site throughout the LBP and LCP project to supervise, monitor and document the project’s health and safety provisions. A daily log shall be maintained showing the results of air sampling tests throughout the project area. LBP and LCP work being conducted within a LBP or LCP control area where an airtight barrier is required shall be stopped if measured airborne lead concentrations, collected during LBP or LCP work procedures, exceed the Action Level.

1. Safety and Health Responsibilities

The Competent Person shall:

1. Verify that training meets applicable requirements.
2. Review and approve LBP/LCP Safe Work Practice Compliance Plan for conformance to the applicable referenced standards.
3. Inspect LBP and LCP removal work for conformance with the accepted Safe Work Practice Compliance Plan.
4. Ensure that worker exposure air monitoring activities are in accordance with 29 CFR Part 1926.62.
5. Ensure work is performed in strict accordance with specifications.
6. Ensure hazardous exposure to personnel and to the environment are adequately controlled.
7. The Contractor’s Competent Person shall be responsible for directing personal air monitoring and shall also perform visual inspections prior to the visual inspection conducted by DASNY’s third-Party Environmental Consultant (if applicable), to verify the control areas are free of all visible debris.
8. If required, the Contractor’s Competent Person shall coordinate with DASNY and the DASNY’s third-party environmental consultant for any control areas requiring final air/wipe testing clearance testing (Action Level/wipe) in accordance with OSHA and/or US Department of Housing and Urban Development (HUD) protocols.
9. Medical Surveillance Procedures

 Medical surveillance shall be implemented in accordance with the accepted Contractor’s LBP/LCP Safe Work Practice Compliance Plan and shall comply with the requirements of 29 CFR Part 1926.62, including the provisions for blood lead level monitoring, medical removal, protection and a physician’s written opinion, signed by the physician performing the employee examination. The Contractor’s Competent Person shall maintain on-site, a copy of the written opinion for Contractor’s employees prior to each employee’s commencement of work.

1. Engineering Controls and Containment Structures

Engineering and work practice controls are the primary means of maintaining exposures to lead below the PEL. Paint removal and surface preparation activities must keep dust levels at a minimum. Power tools must be equipped with manufacturer equipped vacuum shrouds including an attached HEPA filtered vacuum system.

1. LBP/LCP Control Area

The control area is where LBP/LCP work procedures occur and as such shall be considered contaminated. The LBP/LCP control area shall be isolated to prevent LBP/LCP containing dust or debris from passing into adjacent areas. The control area shall be decontaminated at the completion of the LBP/LCP work procedures and disposal work.

1. Boundary Requirements.

Physical boundaries along with Warning Signage shall be provided around exterior LBP/LCP control areas by taping off the area indicated in the Safe Work Practice Compliance Plan.

1. Control Barriers

The LBP/LCP control area shall be designated and separated from other outside areas with control barriers. The polyethylene sheeting shall mask and seal all openings. The LBP/LCP control area shall be erected according to the Contractors LBP/LCP Safe Work Practice Compliance Plan. Polyethylene sheeting shall be mechanically supported, independent of duct tape or spray adhesive.

1. Exterior Masking and Sealing

Exterior LBP/LCP control area requirements: Where the construction of a contained LBP/LCP control area is impractical or not required based on the method of lead work procedures, a taped-off perimeter shall be installed around the area where the LBP/LCP handling procedures are performed and other requirements for LBP/LCP control areas shall be maintained. Personal monitoring of airborne concentrations is still required and shall be conducted in accordance with 29 CFR Part 1926.62.

1. Hand Wash Station

An operational hand washing station shall be provided to all workers adjacent to each LBP/LCP control area utilizing polyethylene sheeting as a drop cloth. Water shall be hot and cold or warm. Soap dish, continuing supply of soap, and clean towels shall be provided. The hand wash station shall be maintained in a sanitary condition. Waste water shall be collected and placed within 6‑mil polyethylene bags and sealed. Bags shall be immediately placed within non-leaking, drums and sealed.

1. Equipment Decontamination

An equipment decontamination area shall be installed at the entrance to each LBP/LCP control area to allow for the cleaning of all equipment utilized on the project. Polyethylene sheeting shall be utilized as a drop cloth, along with a utility tub to clean and capture debris/water during the cleaning process. Water shall be hot and cold or warm. Continuing supply of detergent, and clean towels shall be provided. The equipment decontamination area shall be maintained in a sanitary condition. Waste water shall be collected and placed within 6‑mil polyethylene bags and sealed. Bags shall be immediately placed within non-leaking, drums and sealed.

1. Temporary Utilities
2. Temporary equipment as necessary to provide adequate power, light, heat, and water shall be installed, as needed, to accomplish the LBP/LCP operations properly and safely. The Contractor shall maintain the security and maintenance of the utility system in the LBP/LCP control areas. In the event of a failure of any utility system, the Owner will not be responsible for any loss of time or other expense incurred by the Contractor. In addition to any site-specific temporary utility requirements, the Contractor shall provide:
3. Back-flow protection on all water connections. Fittings installed by the Contractor shall be removed after completion of work with no damage or alteration to existing water piping and equipment.
4. When applicable, heavy-duty abrasion-resistant hoses to provide water to each control area and decontamination area.
5. A hot water heater, if necessary, to provide warm water to the decontamination showers, hand wash station and equipment decontamination area.
6. Electrical service to control areas. Electrical service shall comply with National Electric Code, State and Local requirements and UL standards. Warning signs shall be posted at power outlets, which are other than 110-120 volt power. Only grounded extension cords connected into a GFCI shall be used. Incandescent lamps and light fixtures shall be of adequate wattage to provide good illumination in LBP/LCP control areas.
7. Temporary heating units, when needed, that have been tested and labeled by UL, FM, or another recognized trade association related to the fuel being consumed. Forced air or fan type units shall not be utilized inside a control area. Units shall have tip-over protection.

**2.02 LEAD-BASED/CONTAINING PAINT WORK PRACTICES (Use methods as applicable)**

1. Component Removal:

Components shall be removed intact to the extent practicable. A 6-mil polyethylene drop cloth shall be placed around and/or beneath the component, prior to its removal, to catch any paint chips that may become dislodged. The component shall be wrapped and sealed in a layer of clear 6-mil polyethylene prior to movement to the disposal container. Follow proper disposal requirements. The area around the component removal shall be wet wiped and HEPA vacuumed. The polyethylene sheeting shall be carefully folded in on itself and placed in a 6-mil disposal bag. Containment debris shall be properly stored of in accordance with respective waste stream as per the Contractor’s LBP/LCP Safe Work Practice Compliance Plan

1. Chemical Stripping:

Chemical stripping may be used for LBP and LCP removal on surfaces that will be subjected to welding, cutting, torch burning or where it is the only acceptable procedure. No chemical strippers or associated neutralizer chemicals containing methylene chloride shall be used by the Contractor on this project.

1. Horizontal surfaces directly below and in a radial direction from the area where chemical stripping is to be performed shall be covered with 6-mil plastic sheeting and shall also extend ten (10)feet on either side of the control area or to the furthest practical distance to catch any paint chips that may become dislodged.
2. All LBP/LCP on specified surfaces shall be removed to the bare substrate. The job is not considered complete until the substrate is dry, free of paint, debris, and LBP/LCP residue.
3. LBP/LCP stripping agents shall be brushed or troweled on the designated surfaces, or otherwise applied to a minimum thickness in accordance with manufacturer's specifications.
4. The required application/reaction time for stripping will depend upon the ambient temperature, humidity, and thickness of LBP/LCP. If LBP/LCP is not completely removed following the initial application of stripper, additional applications and wet scrapings may be required.
5. Removed LBP/LCP shall not be deposited on the polyethylene containment surfaces but shall be transferred directly into clear 6‑mil polyethylene bags from the scraper and sealed. LBP/LCP shall be removed by wet scraping to the maximum extent feasible. If the substrate is to be reused, the removal activities shall not damage the substrate.
6. Any residue not removable by wet scraping shall be washed down to the bare metal substrate with an appropriate, pre-approved solution. LBP/LCP‑contaminated wastewater shall be kept to a minimum using wet scrub brushes or sponges. These residues and disposable cleaning media shall also be directly transferred to 6‑mil polyethylene bags and sealed. Bags shall be immediately placed within non-leaking, drums and sealed. Free standing water shall be eliminated by use of a drying agent. Contractor to include the segregation and minimization of lead waste from construction and demolition waste in their LBP/LCP Safe Work Practice Compliance Plan .
7. Manual Demolition/Scraping/Cleaning:
8. Manual demolition, scraping, sanding and power tool cleaning with dust collection systems shall be performed in conjunction with engineering and work practice controls meeting the requirements of 29 CFR 1926.62(e)(1).
9. Seal openings of HVAC ductwork and other penetrations (doors, windows, etc.) within the Control Area with two layers of 6-mil polyethylene sheeting. For work on vertical surfaces, place a layer of 6-mil polyethylene sheeting below the area prior to manual demolition/scraping/sanding/cleaning. The sheeting shall extend ten (10)feet on either side of the control area or to the furthest practical distance to catch any paint chips that may become dislodged.
10. Wet methods shall be used during manual scraping, sanding and power tool cleaning with dust collection systems. Local HEPA ventilation shall be utilized in conjunction with manual scraping, sanding and power tool cleaning with dust collection systems. In the case that local HEPA ventilation is not sufficient to control dust hazards, the Contractor shall be required to install engineering controls to meet requirements of specification section 1.06, D., “Negative Air Pressure System”.
11. Removed LBP/LCP shall not be allowed to accumulate on surfaces within the Control Area but shall be HEPA vacuumed or placed directly into 6‑mil polyethylene bags. The Contractor shall maintain all surfaces as free as practicable of accumulated lead dust to prevent the dispersal of lead into the work places that are outside of the lead paint control areas. LBP/LCP shall be removed by manual methods to the maximum extent feasible.
12. Debris shall be bagged in 6-mil polyethylene bags, sealed, and secured in leak proof drums. The area around the surfaces subject to work shall be wet wiped and HEPA vacuumed, including the polyethylene sheeting. Upon a satisfactory clearance inspection by DASNY’s Third-Party Environmental Consultant (if applicable) and the Contractor’s Competent Person, the cleaned polyethylene sheeting shall be carefully folded in on itself and placed in a 6-mil disposal bag. Containment debris shall be properly stored of in accordance with the respective waste stream as indicated in the contractor’s LBP/LCP Safe Work Practice Compliance Plan . The contractor shall coordinate with the DASNY’s third-party environmental consultant to test the waste streams for disposal.
13. Alternative Lead Work Procedures
14. Any work procedure deviating from the outlined procedures above shall be submitted to DASNY Code Compliance and the Owner’s third-party Environmental Consultant for review and approval prior to the start of the project. As there are many different components in different areas of the building(s), it is impractical to address every potential lead work procedure. The intent of alternative lead work procedures shall be to maintain compliance with 29 CFR 1926.62 and maintain airborne concentrations of lead dust below the Action Level of 30 ug/m3.

**2.03PERSONAL AIR MONITORING, WASTE SAMPLING & CLEARANCE SAMPLING (If Required by DASNY)**

During all LBP/LCP removal and disposal operations, the Contractor’s OSHA Competent Person shall be on-site inspecting the work to ensure that the health and safety requirements of this contract are satisfied. DASNY may elect to have a Third-Party Environmental Consultant on-site to perform visual clearance inspections and/or clearance sampling.

1. Personal Air Monitoring (Provided by the Contractor, as necessary)
2. Personal air monitoring samples for airborne concentrations of lead shall be collected and analyzed in accordance with 29 CFR Part 1926.62. Results shall be reported in micrograms per cubic meter of air. The Competent Person shall use personal air monitoring results to determine the effectiveness of engineering controls, the adequacy of PPE and to determine if proper work practices are being employed. The DASNY’s third-party environmental consultant shall be notified if any personal air monitoring result meets or exceeds 30 ug/m3 of air. The Contractor shall stop work and take steps to reduce the concentration of lead in the air. Such corrective actions shall be documented in the daily log. Personal air sampling results shall be verbally available within 24-hours of sampling with hard copy reports available within five (5) calendar days of sampling.
3. Waste Sampling and Testing (Provided by DASNY’s Third Party Environmental Consultant)
4. Sampling and testing of all waste streams, shall be in accordance with 40 CFR Part 261, 6 NYCRR Part 371and SW-846, Chapter 9, Sampling Plan. See Paragraph 2.05 C.of this specification section for waste sampling and analyses requirements.
5. Dust/Wipe Sampling (If Required by DASNY, will be provided by DASNY’s Third Party Environmental Consultant).
6. Dust/wipe samples shall be taken after clean-up activities have been completed and the control areas passed a visual inspection. Refer to Section 2.01 C. 7. for visual inspection requirements.
7. Sampling for clearance criteria shall be performed in compliance with HUD Guidance document.
8. If clearance fails, the recleaning and any additional costs (dust/wipe sample analyses, etc.) to clear the control area shall be the responsibility of the Contractor. The control area shall remain in place until satisfactory clearance has been achieved.
9. Clearance Levels:
	1. Floors: 10 ug/ft2
	2. Window Sills: 50 ug/ft2
	3. Window Wells: 100 ug/ft2

**2.04 ADJACENT AREAS**

Damage to adjacent areas shall be repaired by the Contractor to the approval of the Owner.

**2.05 CLEAN-UP & DISPOSAL**

1. Cleanup
2. Daily:
Surfaces in the LBP/LCP control area shall be maintained free of accumulations of paint chips, LBP/LCP debris and dust. Spread of dust and debris shall be restricted; waste shall not be distributed over the control area. Dry sweeping or compressed air shall not be used for cleanup. At the end of each shift, the area shall be cleaned of visible lead paint contamination by vacuuming with a HEPA filtered vacuum cleaner and wet wiping the area. LBP/LCP work procedures shall cease during the cleanup.
3. At completion of LBP/LCP work and a satisfactory visual inspection by DASNY’s Third Party Environmental Consultant (if applicable) and OSHA Competent Person, a clean-up shall be performed by the Contractor. This clean-up includes removal of any contaminated material, equipment or debris including polyethylene sheeting from the control area. The polyethylene sheeting shall be sprayed or misted with water for dust control, construction debris removed and polyethylene sheeting wet wiped. Then the sheeting shall be removed by folding it in upon itself.
4. Lead-contaminated debris shall be containerized in accordance with the Contractor’s LBP/LCP Safe Work Practice Compliance Plan Waste bags shall not be overloaded and shall be securely sealed and stored in the designated area.
5. Removal of surface polyethylene sheeting shall begin from top to bottom. Removal of floor polyethylene sheeting shall begin at the corners and folded in the middle to contain the dust. Polyethylene shall be disposed of as per the Contractor’s LBP/LCP Safe Work Practice Compliance Plan Cleaning Equipment. The Contractor shall decontaminate the lead abatement equipment and equipment used in the control area. The wastewater from cleaning shall be contained, sampled and disposed of as specified within Section 2.01 E. 6. and 2.02 B. 7 *and as per* contractor’s LBP/LCP Safe Work Practice Compliance Plan.
6. Certification
7. The Contractor’s Competent Person shall certify and sign within the log that the respiratory protection for the employees was adequate, the work procedures were performed in accordance with 29 CFR Part 1926.62 and that there was no visible accumulations of LBP/LCP paint/coating or dust on the worksite. Do not remove warning signs at the lead control area or roped-off boundary signs prior to the completion of the Competent Person’s signed certification. If applicable, the Contractor’s Competent Person’s certification shall be forwarded to the DASNY Project Manager and the DASNY’s Third Party Environmental Consultant’s for review prior to removing warning signs at the lead control area or roped-off boundary signs.
8. Waste Storage and Disposal (Provided by the Contractor) and Sampling/Analysis (Provided by DASNY’s Third Party Environmental Consultant).
9. LBP/LCP Wastes and Lead-Contaminated Water. Refer to DASNY Standard Specification for the Identification and Disposal of Hazardous Waste section 02 86 00.

**END OF SECTION 02 83 10**

**Appendix A: LBP and LCP Survey Report Documentation Summary:**

**For Details, refer to the Environmental Survey Report Included as Part of this Project Manual.**