Lead Poisoning Prevention and Control

19a-111-1. Definitions

As used in sections 19a-111-1 thru 19a-111-11 inclusive:

(1) "Abatement" means any set of measures designed to eliminate lead hazards in accordance with standards established pursuant to Sections 20-474 through 20-482 and subsections (e) and (f) of Section 19a-88 of the Connecticut General Statutes and regulations of Connecticut State Agencies sections 19a-111-1 through 19a-111-11 and 20-478-1 and 20-478-2 including, but not limited to, the encapsulation, replacement, removal, enclosure or covering of paint, plaster, soil or other material containing toxic levels of lead and all preparation, clean-up, disposal and reoccupancy clearance testing.

(2) "Abatement area" means a room or area isolated with containment in accordance with subdivision 19a-111-4(c)(2) of the regulations of Connecticut State Agencies where lead abatement is occurring.

(3) "Accessible surface" means any surface which is below five (5) feet in height or is exposed in such a way that a child can come in contact with the surface.

(4) "Apparent lead concentration" (ALC) means the average of at least three displayed lead concentration readings taken using a direct reading type x-ray fluorescence analyzer.

(5) "Approved training course" or "approved refresher training course" means a training course or a refresher training course, respectively, approved by the department pursuant to Section 20-477 of the Connecticut General Statutes.

(6) "Atomic absorption spectrophotometer" (AAS) means an instrument which measures the lead content in parts per million (ppm) using a lead source lamp, a flame capable of measuring the absorbed energy and converting it to concentration.

(7) "Biological monitoring" means the analysis of a person's blood and/or urine, to determine the level of lead contamination in the body.

(8) "Certificate" means a document issued by the department indicating successful completion of an approved training course.

(9) "Certified historic property" means any building, structure, or site which has been determined historic by the Connecticut Historical Commission. Historic properties must be included in or eligible for inclusion in the national or state registers of historic places.

(10) "Certified industrial hygienist" means a person possessing a certificate from the American Board of Industrial Hygiene which indicates that they have specific academic credentials, five years professional experience in industrial hygiene, and have passed an examination given by the American Board of Industrial Hygiene.

(11) "Certified lead inspector risk assessor" means any lead consultant who completes an appropriate approved training course and obtains a certificate as a lead inspector risk assessor from the department. A certified lead inspector risk assessor conducts inspections and collects and interprets information to assess the level of risk from lead hazards.

(12) "Certified lead abatement supervisor" means any person who completes an appropriate approved training course and obtains a certificate as a lead abatement supervisor from the department. A lead abatement supervisor oversees lead abatement activities.

(13) "Certified lead abatement worker" means any person who completes an appropriate approved training course and obtains a certificate as a lead abatement worker from the department. A lead abatement worker performs lead abatement activities.

(14) "Certified lead inspector" means any lead consultant who completes an appropriate approved training course and obtains a certificate as a lead inspector from the department. A certified lead inspector conducts inspections to determine the presence of lead in paint, other surface coverings and various environmental media. The terms "lead inspector" and "inspector" mean "certified lead inspector" or "code enforcement official" as defined in subsection (20) of this section unless specifically noted otherwise.

(15) "Certified lead planner-project designer" means any lead consultant who completes an appropriate approved training course and obtains a certificate as a lead planner-project

designer from the department. A certified lead planner-project designer designs lead abatement and management activities.

(16) "Chewable surface" means any projection one half (0.50) inch or greater from an interior or exterior surface up to five (5) feet in height that can be mouthed by a child. The chewable surface includes window sills, door frames, stair rails and stairs, two (2) inches back from any edge, and any other exterior and interior surface that may be readily chewed by children. Baseboards with an exposed horizontal edge may have quarter round molding applied to the top so that only vertical edges forming outside corners, if present, constitute a chewable surface.

(17) "Child" means a person under the age of six (6).

(18) "Child day care services" means a program of supplementary care in accordance with section 19a-77(a) of the Connecticut General Statutes.

(19) "Child day care center" means a program of supplementary care in accordance with section 19a-77(a)(1) of Connecticut General Statutes.

(20) "Code enforcement agency" means the local health department responsible for enforcing the public health code or the local housing agency responsible for enforcing housing code regulations or any other agency designated by the appropriate authority to enforce either the public health code or housing code regulations.

(21) "Code enforcement official" means the director of health or a person authorized by him to act on his behalf, the local housing code official or a person authorized by him to act on his behalf, or an agent of the commissioner.

(22) "Commissioner" means the commissioner of public health.

(23) "Common area" means a room or area that is accessible to all tenants in a building (e.g. hallway, boiler room).

(24) "Containment" means a process for protecting workers, residents, and the environment by controlling exposures to lead dust and debris created during abatement.

(25) "Confirmatory testing" means analysis using atomic absorption spectrophotometry (AAS), graphite furnace atomic absorption spectrophotometry (GFAAS), inductively coupled plasma atomic emission spectrophotometry (ICP-AES), or x-ray fluorescence spectrum analysis spectrometry with a 240 second spectrum analyzer test.

(26) "Corrected lead concentration" (CLC) means the difference between the average displayed lead concentration readings (using a direct reading type x-ray fluorescence analyzer) taken on a painted surface and the average of three readings taken on a bare substrate (substrate contribution).

(27) "Department" means the department of public health.

(28) "Defective surface" means peeling, flaking, chalking, scaling or chipping paint; paint over crumbling, cracking or falling plaster, or plaster with holes in it; paint over a defective or deteriorating substrate; or paint that is damaged in any manner such that a child can get paint from the damaged area.

(29) "Director" means the director of the state program for childhood lead poisoning prevention.

(30) "Dwelling" means every building or shelter used or intended for human habitation, including exterior surfaces and all common areas thereof, and the exterior of any other structure located within the same lot, even if not used for human habitation.

(31) "Dwelling unit" means a room or group of rooms within a dwelling arranged for use as a single household by one or more individuals living together who share living and sleeping facilities.

(32) "Elevated blood lead level" means a blood lead concentration equal to or greater than twenty (20) micrograms per deciliter (ug/dl) or as defined by Connecticut General Statutes section 19a-111.

(33) "Encapsulation" means resurfacing or covering surfaces, and sealing or caulking with durable materials, so as to prevent or control chalking, flaking substances containing toxic levels of lead from becoming part of house dust or accessible to children.

(34) "Entity" means any person, partnership, firm, association, corporation, sole proprietorship or any other business concern, state or local government agency or political subdivision or authority thereof, or any religious, social or union organization, whether operated for profit or otherwise.

(35) "Epidemiological investigation" means an examination and evaluation to determine the cause of elevated blood lead levels. An epidemiological investigation will include an inspection conducted by a lead inspector to detect lead-based paint and report of findings. This investigation must also include evaluation of other sources such as soil, dust, pottery, gasoline, toys, or occupational exposures, to determine the cause of elevated blood lead levels. The investigation may also include isotopic analysis of lead-containing items.

(36) "Family day care home" means a program of supplementary care in accordance with section 19a-77(a)(3) of Connecticut General Statutes.

(37) "Graphite furnace atomic absorption spectrophotometer" (GFAAS) means an instrument that functions the same as an AAS, with one exception, i.e., the flame is replaced by an electrically heated chamber, a graphite tube, into which the sample is deposited.

(38) "Group day care home" means a program of supplementary care in accordance with section 19a-77(a)(2) of Connecticut General Statutes.

(39) "High efficiency particulate air" (HEPA) means a type of filtering system capable of filtering out particles of 0.3 microns or greater diameter from a body of air at 99.97% efficiency or greater.

(40) "High phosphate detergent" is detergent which contains at least five (5%) percent tri-sodium phosphate (TSP).

(41) "Inductively coupled plasma-atomic emission spectrophotometer" (ICP-AES) is an instrument which measures lead in ppm using a heat source (plasma torch) to dissociate and ionize lead atoms thereby emitting energy. This emission energy is measured and converted to concentration by the detector.

(42) "Intact surface" means a defect-free surface with no loose, peeling, chipping or flaking paint. Painted surfaces must be free from crumbling, cracking or falling plaster and must not have holes in them. Intact surfaces must not be damaged in any way such that a child can get paint from the damaged area.

(43) "Isotopic analysis" means a physicochemical method which differentiates between chemical elements having different atomic weight and electrical charge.

(44) "Lead-based" refers to paints, glazes, and other surface coverings, containing a toxic level of lead.

(45) "Lead abatement plan" means a written plan that identifies the location of intact and defective lead-based paint and describes how defective lead-based surfaces will be abated and how the environment, health, and safety will be protected. The plan also identifies the location of soil containing lead and describes sampling protocol used and abatement options.

(46) "Lead consultant" means any person who performs lead detection, risk assessment, abatement design or related services in disciplines including, but not necessarily limited to, inspector, inspector risk assessor and planner-project designer.

(47) "Lead management plan" means a written plan that describes how an intact surface with lead-based paint will be monitored to ensure that defective paint surfaces will be identified and abated.

(48) "Licensed lead abatement contractor" means any entity that contracts to perform lead hazard reduction by means of abatement including, but not limited to, the encapsulation, replacement, removal, enclosure or covering of paint, plaster, soil or other material containing toxic levels of lead and obtains a license from the department to conduct such abatement work. The contractor utilizes certified lead abatement supervisors to oversee such lead abatement activities and certified lead abatement workers to perform such abatement activities. The terms "lead abatement contractor" and "abatement contractor" mean "licensed lead abatement contractor" unless specifically noted otherwise.

(49) "Licensed lead consultant contractor" means any entity that contracts to perform lead hazard reduction consultation work utilizing an inspector, inspector risk assessor and/or planner-project designer and obtains a license from the department to conduct such consultation work. The terms "lead consultant contractor" and "consultant contractor" mean "licensed lead consultant contractor" unless specifically noted otherwise.

(50) "Owner" means any person, partnership, firm, association, corporation, sole proprietorship or any other business concern, state or local government agency or political subdivision or authority thereof, or any religious, social or union organization, whether operated for profit or otherwise, who, alone or jointly with others owns, holds, or controls the whole or any part of the deed or title to any property. No holder of an easement, mortgagee, bank or lender holding the mortgage, shall be considered an owner except when the holder of an easement, mortgagee, banker, or lender takes physical possession of the property.

(51) "Paint removal" means a strategy of abatement which entails stripping lead paint from surfaces.

(52) "Replacement" means a strategy of abatement which entails the removal of components such as windows, doors and trim that contain toxic levels of lead and installing new components which are lead free.

(53) "Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" means the guidelines and methods approved by the state and federal governments for alterations to historic properties (36 CFR section 67).

(54) "State laboratory for lead and lead poisoning detection" means the laboratory established by the commissioner, for the purpose of analyzing blood specimens from persons for the presence of lead; and analyzing samples of paint, plaster, soil and other materials, within the laboratory or on site with mobile units, for toxic levels of lead.

(55) "State program" means the childhood lead poisoning prevention program established by the department.

(56) "Substrate" means the underlying surface which remains after paint is removed.

(57) "Substrate equivalent lead" (SEL) means the average of at least three displayed lead concentration readings with a direct reading type x-ray fluorescence analyzer after paint is removed from the substrate.

(58) "Target housing" means any housing constructed prior to 1978, except any zero-bedroom dwelling unit or any housing for the elderly or persons with disabilities unless a child resides or is expected to reside in such dwelling unit or housing.

(59)

(60) "Toxic level of lead" means a level of lead that:

(A) when present in paint offered for sale for use on or in a residential dwelling contains more than 0.06 percent lead by weight as measured by atomic absorption spectrophotometry (AAS), graphite furnace atomic absorption spectrophotometry (GFAAS), or inductively coupled plasma atomic emission spectrophotometry (ICP-AES) or another accurate and precise testing method that has been approved by the commissioner, by a laboratory approved by the department for lead analysis.

(B) when present in a dried paint, plaster or other accessible surface on or in a residential dwelling contains equal to or greater than 0.50 percent lead by dry weight as measured by atomic absorption spectrophotometry (AAS), graphite furnace atomic absorption spectrophotometry (GFAAS), inductively coupled plasma-atomic emission spectrophotometry (ICP-AES) or another accurate and precise testing method that has been approved by the commissioner, by a laboratory approved by the department for lead analysis, or equal to or greater than 1.0 milligrams lead per square centimeter of surface as measured on site by an X-ray fluorescence analyzer or another accurate and precise testing method that has been approved by the commissioner.

(61) "Treatment" means any method, technique or process designed to change the physical chemical, or biological character or composition of any hazardous waste so as to render it non-hazardous, or to recover it, or to make it safer to transport, store or dispose of, or to make it amenable for recovery, storage, or volume reduction.

(62) "TSP" means tri-sodium phosphate. A TSP solution contains at least 5% TSP or its equivalent.

(63) "X-ray fluorescence analyzer (XRF)" means an analytical instrument that measures lead concentration of dried paint on surfaces or in a laboratory sample in milligrams per square centimeter (mg/cm[2]) using a radioactive source within the instrument.

(Effective September 29, 1992; Amended effective November 29, 1996; Amended July 25, 1997; Amended effective September 30, 2003.)

19a-111-2. Applicability of regulations

(a) When a child resides in a dwelling unit all defective lead-based surfaces shall be abated. A property owner may not avoid abatement by taking eviction action against a family with a child.

(b) When a child resides in a dwelling all defective exterior surfaces and all defective surfaces in common areas containing toxic levels of lead shall be abated.

(c) When a child has an elevated blood lead level then abatement shall include all lead-based chewable surfaces whether or not that surface is defective and all lead-based movable parts of windows and surfaces that rub against movable parts of windows.

(d) When a child resides in a dwelling requiring lead abatement, interior dust, drinking water and exterior soil shall be assessed. When soil or sand areas that are not covered by grass, sod, other live ground covers, wood chips, gravel, artificial turf, or similar covering are found to contain lead concentrations in excess of 400 parts per million, such bare soil or sand areas shall be abated. When lead dust hazards are found to be a source or a potential source of elevated blood lead in a child, lead dust shall be reduced to a safe level using appropriate cleaning methods. When lead in drinking water is determined to be a source or potential source of elevated blood lead in a child, appropriate remedial action approved by the local director of health shall be implemented.

(e) Intact surfaces containing toxic levels of lead except as noted in section 19a-111-2(c) of regulations of Connecticut State Agencies are not required to be abated by these regulations, however, when a child resides in a dwelling the owner shall have a lead management plan written within sixty (60) days of receipt of inspection results. The plan shall be implemented and kept by the owner and transferred with ownership upon transfer of title. The management plan shall identify the location of intact lead surfaces and describe how these intact surfaces will be monitored on a regular basis by the owner to ensure that if they become defective, the surfaces will be identified and abated. The plan must be submitted to the local director of health or the commissioner upon request.

(f) Repealed.

(Effective September 29, 1992; amended November 29, 1995; Amended effective September 30, 2003.)

19a-111-3. Inspections, reports and notifications

(a) Methods - Lead inspectors may conduct inspections, tests and measurements and issue reports on forms prescribed by the Department for the purpose of recording the presence of toxic levels of lead. When used to determine compliance with Connecticut General Statutes section 19a-111 and regulations of Connecticut State Agencies Sections 19a-111-1 through 19a-111-11, such reports shall be based upon X-ray fluorescence (XRF), atomic absorption spectrophotometry (AAS) graphite furnace atomic absorption spectrophotometry (GFAAS), or inductively coupled plasma-atomic emission spectrophotometry (ICP-AES). Paint samples taken for AAS, GFAAS, or ICP-AES analysis shall be a minimum size of 1 square inch and shall contain all layers of paint down to the substrate.

(1) Surface testing sites

(A) Interior Locations - In each area of an interior location (e.g. back room closet, pantry, hall, or part of a divided room), the following representative surfaces will be tested for the presence of toxic levels of lead: baseboard, ceiling, crown molding, door surface and side of door frame for a representative interior door, floor, fireplace, radiator, shelf, shelf support, stair riser, stair tread, stair stringer, stair newel post, stair railing cap, stair balustrade, upper wall, lower wall, chair rail, window sash and window casing and window sill for a representative window, representative door and window lintel.

(B) Exterior Locations - For each side of an exterior surface the following representative surface will be tested for the presence of toxic levels of lead: bulkhead, porch, entrance canopy, exterior wall, siding, lattice, ceiling, railing, railing cap, stair stringer, stair tread, stair riser, trim, cellar window unit, window sill, window casing, window sash for a representative window.

(2) Testing protocols for determining lead present at or above the toxic level using XRF analyzer instruments

(A) The methodology shall be consistent with performance characteristics specific to each make and model of instrument so as to maintain accuracy and precision. Readings shall be classified as (1) lead present at or above the toxic level of lead as defined in section 19a-111-1(59), (2) inconclusive or (3) lead not present at or above the toxic level. Instruments used to determine these classifications shall have verified accuracy and precision utilizing x-ray fluorescence performance characteristic sheets published jointly by the United States Environmental Protection Agency and the United States Department of Housing and Urban Development. The performance characteristic sheets describe the methodology to be used for obtaining x-ray fluorescence readings taken on specific substrates, calibration check tolerances, and provide information describing the performance of the specific model of x-ray fluorescence instrument, including inconclusive ranges.

(B) Multifamily dwelling protocols and decision flowcharts shall not be acceptable methodology for residential lead inspections conducted pursuant to section 19a-111-3 (a) (1).

(C) XRF testing of representative surfaces as described within section 19a-111-3 (a)(1) shall require testing of a representative surface on each listed component when present within an interior area (e.g. room, closet, pantry, hall) or on an exterior side of a building. When multiple readings are required upon a component per performance characteristic sheet protocol, these readings shall be taken on different locations upon the component testing surface. The average of the multiple readings shall then be used to determine the classification of the readings as described within subdivision (2)(A) of this subsection and within the performance characteristic sheet for the specific model of the XRF instrument used to obtain the readings. An inspector or inspector risk assessor may terminate the series of readings when an individual reading or readings are sufficiently high so as to substantiate a conclusion that lead is present at or above the toxic level without completion of the full test sequence.

(D) When the reading classification obtained from a surface has been determined to be within the inconclusive range, confirmation shall be required except as noted in this subsection. Confirmation shall be performed through testing with atomic absorption spectrophotometry

(AAS), graphite furnace atomic absorption spectrophotometry (GFAAS), inductively coupled plasma atomic emission spectrophotometry (ICP-AES), or another testing protocol deemed acceptable by the commissioner. Alternatively at the discretion of the owner and in lieu of confirmation, (1) a surface that is found to be within the inconclusive range may be presumed to contain a toxic level of lead and abated with no further confirmation or (2) an intact surface, except for those noted in subsection (c) of section 19a-111-2, may be placed under the auspices of a lead management plan without confirmatory testing. If deterioration occurs on any such intact surface, the owner shall provide confirmatory testing of that surface and abate the surface if found to contain a toxic level of lead or, at the discretion of the owner, abate any such defective surface as containing a toxic level of lead, without further confirmatory testing.

(E) XRF testing shall be immediately preceded by a minimum of three calibration check readings. Calibration check readings shall be made immediately after an inspection has been completed. Additional calibration check readings shall be made every 4 hours during an inspection or as indicated by the manufacturer, whichever is more frequent. Calibration check readings shall be within the calibration check tolerances outlined in the performance characteristic sheet of the model being utilized before the inspection may proceed. Calibration check readings shall be logged within the inspection documents by the inspector.

(F) XRF instruments may be used to test surfaces that are flat and accessible to the measuring probe of the instrument. XRF instruments shall not be used to test surfaces that are curved, ornate or inaccessible.

(G) For those XRF instruments that require substrate correction, apparent lead concentration (ALC) analysis results may be used to determine that lead is present at or above the toxic level when an ALC result is greater than or equal to 4.0 mg/cm[2].

(H) Where manufacturer's protocol including calibration check criteria are more stringent than those specified in the performance characteristic sheet for that XRF, the manufacturer's protocol shall take precedence.

(b) Soil - The methodology for sampling soil for lead varies depending on the site. The methodology used shall be detailed in the lead abatement plan.

(a) Inspection priorities - Code enforcement agencies shall carry out inspections according to the following priorities:

(1) Elevated blood lead level - As part of an epidemiological investigation of a child's elevated blood lead level, dwelling units in which the child resides shall be inspected for toxic levels of lead by the local director of health. This epidemiological investigation shall begin within five (5) working days after notification of the local director of health by the child's physician, hospital, clinic or by the state lead poisoning prevention program and be completed as expeditiously as possible.

(2) Other dwellings - Inspections shall begin within thirty (30) working days and be completed as expeditiously as possible in all dwelling units in which a child resides in the same building as those identified under section 19a-111-3(c)(1) of regulations of Connecticut State Agencies.

(3) Child day care services - Before licensure or relicensure of a child day care center or group day care home by the department, or before registration of a family day care home by the State of Connecticut department of human services, the premises in which the services are provided shall be inspected by a lead inspector for toxic levels of lead.

(b) Report of inspection - Whenever an inspector finds a toxic level of lead requiring abatement, the inspector shall report this to the owner, local director of health, and the commissioner. This report shall include a properly completed copy of the inspection form prescribed by the department and shall be postmarked and sent by certified mail or hand delivered by the end of the second working day following completion of the inspection. The inspection form will indicate all defective and intact lead-based surfaces. Soil and dust exposure pathways shall be investigated and the potential for lead poisoning to a child assessed. Soil sampling methodology shall be documented.

(c) Notification - Within two (2) days after receipt of an inspection report identifying toxic levels of lead requiring abatement the owner shall have posted notice on each entrance to the dwelling unit or common area of dwelling if affected. The notice shall measure at least 8 1/2" x 11" with letters measuring at least one half (1/2) inch. The notice shall state that the dwelling unit contains a toxic level of lead which may be dangerous and which a child should not be allowed to mouth or chew. The notice shall not be removed until the dwelling unit has been found to comply with Connecticut General Statutes section 19a-111 and regulations of Connecticut State Agencies sections 19a-111-1 through 19a-111-11. The owner will provide a summary report of the lead inspection and/or lead management plan, and the post-abatement inspection report to the residents. This summary inspection report will contain the results of lead-based surface testing as required by section 19a-111-3 of the regulations of Connecticut State Agencies and will include a description of the testing methods used. The owner shall also provide the residents with information prescribed by the department concerning the toxicity of lead and precautions that should be taken to avoid exposure.

(d) Corrective action - The local code enforcement agency shall issue an order to correct all defective lead-based surfaces requiring abatement and soil areas identified as a source, or potential source for elevated blood lead within the time period specified in section 19a-111-5 of regulations of Connecticut State Agencies.

(e) Identification and certification of historic properties - When a dwelling is fifty (50) years old or older and requires lead abatement, the owner shall within five (5) working days after completion of the inspection report postmark or hand deliver an inspection report and a good quality photograph of the property to the Connecticut Historical Commission. The commission will determine whether properties over fifty (50) years old which require lead abatement are historic in order to provide guidance on which lead abatement techniques are appropriate for historic properties. The commission will certify properties which are included in or eligible for inclusion in the national or state registers of historic places. The commission shall within ten (10) working days after receipt of the inspection report and photograph send by first class mail a written report of the building's historic status.

(f) Post abatement inspection - consists of:

(1) Reinspection: All areas where abatement has been completed in accordance with the abatement plan mandated in section 19a-111-4(a) of the regulations of Connecticut State Agencies shall be reinspected by the code enforcement agency within ten (10) working days after notification has been received from the owner that lead abatement has been completed. The inspection shall ascertain whether the defective lead based paint has been properly abated. A lead abatement project shall be considered complete when all defective lead based paint has been abated, there is no visible residue in the work area, and the level of lead has been reduced in the abatement area to below the toxic level of lead as determined by the use of lead in dust sampling in the abatement area. A copy of the post abatement inspection report shall be sent by certified mail or hand delivered to the owner of the residential property, the local director of health and the commissioner within two (2) working days after the reinspection is completed.

(2) Lead in dust sampling: Wipe sampling procedure – The standard sample size in this technique is one square foot, which is obtained with a plastic template or

measuring device according to the following formula: length in inches times width in inches divided by 144 equals the fraction or multiple of one square foot. Disposable gloves are worn throughout the sampling procedure. A pre-moistened wipe or towelette is placed flat on the surface to be sampled. The wipe is rubbed in an "S" pattern over the entire measured area. The wipe is then folded in half and rubbed once over the surface again at a 90 degree angle to the first series of wipes. Finally, the wipe is folded and placed in a marked tube or plastic bag for laboratory determination of lead via AAS, GFAAS, or ICP-AES. A minimum of 2 unused wipes or 1 wipe for every 20 used, whichever number is greater, is submitted to the laboratory as a blank.

(i) Conflict of interest - The lead inspector shall not be an owner or the lead abatement contractor for any property for which the lead inspector issues a lead inspection report.

(j) Risk Assessment-For the purpose of assessing the level of risk from lead dust, a lead dust hazard is present when the concentration of lead in dust is equal to or exceeds the following.

(A) floors -- 40 µg/sq. ft. (micrograms per square foot);

(B) window sills -- 250 µg/sq. ft.

(Effective September 29, 1992; Amended July 25, 1997; Amended effective September 30, 2003.)

19a-111-4. Abatement of toxic levels of lead

(a) Lead abatement plan - When toxic levels of lead requiring abatement have been identified the owner shall have a written lead abatement plan prepared and submitted to the local director of health according to the time period for compliance listed in section 19a-111-5 of regulations of Connecticut State Agencies. The local director of health shall review the plan for completeness and compliance with sections 19a-111-1 through 19a-111-11 of the regulations of Connecticut State Agencies. The plan shall describe repair work necessary prior to abatement, all surfaces and soil areas containing toxic levels of lead, the sampling and testing methodologies utilized, how surfaces and soil areas requiring abatement will be abated, clean up procedures, and clearance testing prior to reoccupancy. The plan shall state estimated starting and completion dates for the abatement project. The abatement project shall follow the plan and be in compliance with section 19a-111-1 through 19a-111-11 of the regulations of Connecticut State Agencies. If the property is a certified historic property as identified according to section 19a-111-3(g) of the regulations of Connecticut State Agencies the lead abatement plan must also be submitted to the Connecticut Historical Commission for review. Review of the plan by the Connecticut Historical Commission will be completed and state if the lead abatement plan proposes to use lead abatement techniques which are appropriate for historic properties. This written review shall be postmarked within ten (10) working days of receipt of the abatement plan and be sent to the owner and local director of health. If the plan requires revision the local director of health shall establish a time table for development of a revised plan with the owner.

(b) Notice to residents - Prior to beginning a lead abatement project, the owner shall give the affected premises or dwelling unit residents a minimum of five (5) working days written notice of the date the abatement will begin. This notice shall inform the residents of their rights and responsibilities in accordance with general statutes section 19a-111 and sections 19a-111-1 through 19a-111-11 of the regulations of Connecticut State Agencies and state which surfaces or soil areas shall be abated.

(c) Methods of abatement - The owner of a dwelling is responsible for proper abatement of toxic levels of lead in dwelling units where a child resides. All defective paint, plaster or other material containing toxic levels of lead on both interior and exterior surfaces and soil areas and fixtures shall be adequately abated by proper preparation, containment, abatement, cleanup, and waste disposal.

(1) Preparation prior to abatement

(A) Post warnings - Warning signs shall be placed at all entrances and exits to abatement area.

(B) Packing residents' belongings - The residents shall pack their belongings in easily handled containers. The owner shall have these belongings moved from the abatement area to a secure area where the residents can have access to their belongings on a daily basis. Belongings must be moved unless abatement methods of replacement or encapsulation are used in a limited area and very little dust is expected to be generated and the abatement plan specifies that the belongings will remain in the abatement area.

(C) Covering residents' belongings - The abatement contractor shall ensure that all permanent fixtures are covered with 6 mil polyethylene sheeting and sealed with duct tape.

(D) Repair work prior to abatement - Prior to abatement, repairs shall be made to pre-existing conditions that may impede abatement including water leaks and inadequate heat. A description of these repairs shall be summarized in the lead abatement plan.

(2) Containment - The abatement area shall be properly contained using materials such as 6 mil polyethylene sheeting to prevent lead dust from contaminating the dwelling or environment.

(A) Cover objects - Nonmovable objects shall be covered with 6-mil polyethylene sheeting and floors shall be covered with two layers of 6-mil polyethylene sheeting.

(B) Air systems - Air heating and conditioning systems shall be turned off and air intake and exhaust systems shall be sealed.

(C) Entrances - Entrances to the abatement area shall be sealed by using two layers of 6-mil polyethylene sheeting (each layer attached to the top of the entrance and opposite side using heavy duty tape).

(D) Exterior - Exterior abatement shall have proper containment using 6-mil polyethylene sheeting to prevent release of lead into the environment.

(i) For liquid waste extend the end of the polyethylene sheets a sufficient distance to contain the runoff and raise the outside edge of the sheets to trap liquid waste.

(ii) For dry waste extend the sheeting out from the foundation a distance of three (3) feet per story being abated with a minimum of five (5) feet and a maximum of twenty (20) feet. Erect vertical shrouds to contain any potential dust release into the adjacent environment.

(3) Abatement - Defective lead-based surfaces requiring abatement shall be abated by either replacement, encapsulation or removal methods. Repainting or use of paper or vinyl wall covering without abating the defective lead-based surface does not constitute compliance with sections 19a-111-1 through 19a-111-11 of the regulations of Connecticut State Agencies. Appropriate worker protection practices shall be followed as specified in section 19a-111-6 of the regulations of Connecticut State Agencies.

(A) Replacement of surfaces containing toxic levels of lead - Old surfaces shall be removed and new surfaces that have no lead-based surfaces shall be installed.

(B) Encapsulation - A permanent cover shall be installed over the lead-based surface. Encapsulant materials shall bind to the substrate and not just the surface paint.

(C) Removal - Removal methods include:

(i) heat based removal using heat guns with temperature not in excess of 700 degrees F to prevent vaporization of lead (open flames shall not be used);

(ii) chemical removal with caustic or solvent-based chemicals done either on site or components taken off site for removal of the lead-based surface;

(iii) wet scraping by misting the surface and then scraping;

(iv) sanding only with a HEPA vacuum attachment to collect dust;

(v) for exterior lead-based surfaces only, this surface may be removed by abrasive blasting with a HEPA vacuum arrangement or contained water blasting or the methods listed above such that no visible emissions or residue can be observed. Uncontained abrasive blasting is not allowed. Soil shall be sampled for lead content according to methodologies specified in the lead abatement plan both before and after exterior lead abatement to ensure that containment, abatement, and clean-up are effective.

(4) Clean-up - Preliminary clean-up shall be done by wet sweeping the containment area and carefully removing the polyethylene covering by folding the plastic upon itself to trap all dust. After the polyethylene covering is removed the abatement area shall be HEPA vacuumed and then washed with TSP detergent. Then for final clean-up the abatement area shall be HEPA vacuumed, washed with TSP detergent, and HEPA vacuumed again. To give airborne lead time to settle, the final cleanup should be scheduled to start no sooner than twenty-four (24) hours after active abatement has ceased. Final clearance testing should be performed using lead in dust testing and XRF, GFAAS, AAS or ICP-AES after the final clean-up has been performed but before the removal of the polyethylene sheeting material that isolates the abatement area from the rest of the dwelling and seals off the ventilation.

(5) Waste disposal - Disposal of lead abatement waste and soil must be in compliance with local, state, and federal regulations including sections 22a-209-1, 22a-209-8(c), 22a-449(c)-11, and 22a-449(c)-100 through 22a-449(c)-110 of the regulations of Connecticut State Agencies.

(d) Soil Areas - Soil areas shall be abated when necessary in a site specific manner as detailed in the lead abatement plan and in accordance with the Connecticut Department of Environmental Protection regulations as noted in section 19a-111-4(c)(5) of the regulations of Connecticut State Agencies.

(e) Occupancy - Prior to reoccupancy of the abatement area the lead inspector shall ensure through reinspection that the lead abatement plan has been followed and that the following criteria are met.

(1) Every building component upon which removal of lead based surfaces has been performed will be tested using XRF, AAS, GFAAS, or ICP-AES technologies. Successful abatement of these components consists of either meeting the XRF testing criteria defined in 19a-111-3(a)(1) through 19a-111-3(a)(3) or by AAS, GFAAS, or ICP-AES analysis of every component abated and determination of a level of lead less than toxic.

(2) Samples of dust shall be collected at the following locations in each room or area where lead-based paint has been abated. Additionally, if only a portion of a dwelling unit has been abated, a sample shall be collected from the floor outside the containment within ten (10) feet of the entrance to the abatement area upon completion of abatement activities. Any samples collected under this section shall have lead in dust levels that are below the following clearance criteria for reoccupancy to be allowed:

(A) floors -- 40 µg/sq. ft. (micrograms per square foot);

(B) window sills -- 250 µg/sq. ft.;
(C) window wells -- 400 µg/sq. ft.

(3) When abatement methods of replacement or encapsulation are used in a limited area and very little dust is expected to be generated then clearance dust monitoring may be less than specified in section 19a-111-4(e)(2) if the alternative dust monitoring is specified in the lead abatement plan.

(f) Letter of Compliance - After lead abatement has been completed in a dwelling unit according to the lead abatement plan and dust levels have been found to be in compliance with section 19a-111-4(e)(2) of the regulations of Connecticut State Agencies the lead inspector shall issue a letter of compliance within five (5) working days for that dwelling unit stating that the lead inspector has found the dwelling unit free of lead hazards. If intact lead-based surfaces remain then the letter of compliance must state that the lead management plan must be followed to assure compliance with sections 19a-111-1 through 19a-111-11 of the regulations of Connecticut State Agencies.
(Effective September 29, 1992; Amended effective September 30, 2003.)

19a-111-5. Time periods for compliance

The local director of health shall ensure that lead abatement projects be completed in a timely fashion according to the time frames specified in the lead abatement plan and according to the following schedule. However, the local director of health may shorten this time table when he/she deems it necessary for prevention of an imminent health hazard.

(a) Child with an elevated blood lead level - In a dwelling unit in which a child resides, and has an elevated blood lead level, the owner shall submit a written lead abatement plan to the local director of health within fifteen (15) working days of notification of inspection results. When a property is over 50 years old and is being reviewed for historic status by the Connecticut Historical Commission as required in section 19a-111-3(g) of the regulations of Connecticut State Agencies, then the owner shall submit a written lead abatement plan to the local director of health within five (5) working days after notification and guidance from the Connecticut Historical Commission is received. The local director of health shall review the plan for completeness and compliance with sections 19a-111-1 through 19a-111-11 of the regulations of Connecticut State Agencies. If the plan is found to be incomplete, the local director of health shall notify the owner in writing within ten (10) working days of receipt of the plan of the reasons why the plan was not complete and establish a time table for compliance. The owner shall initiate abatement of toxic levels of lead within forty-five (45) working days of notification of inspection results and diligently pursue such abatement.

(b) Other dwellings - In a dwelling in which a child resides, but does not have an elevated blood lead level, the owner shall initiate abatement of all toxic levels of lead in defective condition within ninety (90) working days of notification of the inspection results and diligently pursue such abatement. The owner shall submit a written lead abatement plan to the local director of health within twenty (20) working days of initial identification of a lead hazard. The local director of health shall review the plan for completeness and compliance with sections 19a-111-1 through 19a-111-11 of the regulations of Connecticut State Agencies. If the plan is found to be incomplete the director of health shall notify the owner in writing within fifteen (15) working days of the reasons why the plan was not approved and establish a time table for compliance.
(Effective September 29, 1992).

19a-111-6. Worker protection

(a) Health monitoring - The employer shall provide medical examination and monitoring for lead abatement workers.

(1) Information to physicians - The employer shall instruct any examining physician to:

(A) not reveal to the employer any findings unrelated to a worker's occupational exposure to lead;
(B) advise the worker of any medical condition, occupational or nonoccupational, which dictates further medical examination or treatment;
(C) provide the worker with a clear warning of the reproductive and other health hazards of exposure to high levels of lead.

(2) Employment physical - Health monitoring on all lead abatement workers shall include an employment medical examination by a licensed physician which shall consist of:
(A) a work and medical history;
(B) blood pressure measurement;
(C) blood lead level and erythrocyte protoporphyrin level;
(D) complete blood count;
(E) blood urea nitrogen, serum creatinine, routine urinalysis;
(F) other evaluations deemed necessary by the attending physician.

(3) Periodic monitoring - Lead abatement workers shall have blood lead and erythrocyte protoporphyrin tests monthly for the first three (3) months of employment and every three (3) months thereafter.

(4) Physician's report - Within two (2) working days after the receipt of a medical report from the physician the employer shall furnish the applicant with a copy of a written medical report from the physician which contains:
(A) the physician's opinion as to whether the applicant has any detected medical condition which would place the applicant at increased health risk;
(B) any recommended special protective measures to be provided to the applicant, or limitations to be placed upon the applicant's exposure to lead;
(C) any recommended limitation upon the applicant's use of respirators.

(b) Management of lead poisoned workers

(1) At blood lead level 25-50 ug/dl the following procedures shall apply.
(A) The attending physician shall report the elevated blood lead level to the individual and to the Department.
(B) The attending physician shall determine if there are symptoms of lead poisoning. If symptoms exist then the provisions of subdivision 19a-111-6(b)(2) of regulations of Connecticut State Agencies shall be followed.
(C) The attending physician shall contact the affected individual and arrange for repeat blood lead level and erythrocyte protoporphyrin measurement within one (1) month and repeat blood lead level and erythrocyte protoporphyrin measurement until the blood lead level drops below 25 ug/dl.
(D) The attending physician shall notify the employer of the affected individual that this worker has an elevated blood lead level.

(2) In addition to the procedures in subdivision (1) of this subsection, at a blood lead level of greater than 50 ug/dl the following procedures shall also apply.
(A) The attending physician shall arrange for blood lead and erythrocyte protoporphyrin testing every month until the blood lead level drops below 25 ug/dl.
(B) Until the worker's blood lead is less than 50 ug/dl and exhibits no symptoms of lead poisoning, the worker shall be removed from work. The worker may not return to work until a recommendation to start work from the attending physician is received by the worker with a written copy sent to the Department.

(c) Employer responsibility. The employer is responsible for any costs incurred as a result of the health monitoring system.

(d) Personal protective equipment and precautions

(1) The employer shall ensure that all lead abatement workers wear work clothing and protective equipment during the lead abatement procedure. Such clothing shall include but not necessarily be limited to:

(A) when caustic paste is not used as a deleading agent

(i) coveralls or similar full body covering,

(ii) shoe covers,

(iii) gloves,

(iv) hats,

(v) face shields, vented goggles or other eye protection equipment;

(B) or, when caustic paste is used as a deleading agent

(i) full-body overalls impervious to caustic substances,

(ii) gloves impervious to caustic substances,

(iii) glove extenders

(iv) face shield when workers are applying or removing any caustic substance at or above face level,

(v) appropriate boot or shoe covers;

(C) respirators approved by the National Institute of Occupational Safety and Health (NIOSH) and the U.S. Department of Labor Mine Safety and Health Administration (MSHA) selected according to the type of abatement process as listed below (or, air monitoring may be used according to OSHA lead standard (29 CFR 1910.1025) to demonstrate which form of respiratory protection is appropriate)

(i) for use while vacuum sanding with HEPA filter, scraping and with heat guns - powered air-purifying respirator with high efficiency filters, or the half mask supplied-air respirator operated in the positive-pressure mode;

(ii) for use with caustic materials or during abatement involving replacement - half-mask, air-purifying respirator equipped with high efficiency filters;

(iii) for use with a chemical preparation (for example, a solvent) in conjunction with a mechanical or powered technique – an additional cartridge, appropriate to the exposure, unless a supplied-air respirator is used. Any additional cartridge must meet the requirements of the OSHA/MSHA certification for contaminants appropriate to the exposure.

(2) The employer shall:

(A) maintain records on health monitoring tests required on workers for two (2) years;

(B) provide protective clothing in a clean and dry condition daily;

(C) provide for the cleaning, laundering or disposal of protective clothing or equipment;

(D) repair or replace protective equipment as necessary to maintain its effectiveness;

(E) ensure that all protective clothing is removed only in designated change areas at the completion of a work shift;

(F) ensure that contaminated protective clothing which is to be cleaned, laundered or disposed of, is placed in a closed container located in the designated change area which prevents dispersion of lead outside the container;

(G) inform, in writing, any person who cleans or launders protective clothing and equipment of the potentially harmful effects of exposure to lead

(H) ensure that the containers of contaminated protective clothing and equipment required by these regulations are labeled as follows: CAUTION CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS;

(I) prohibit the removal of lead from protective clothing or equipment by blowing, shaking or any other means which disperses lead into the air.

(e) Hygiene facilities and practices - The employer shall ensure that:

(1) food or beverage is not present or consumed, smoking or chewing of tobacco is not allowed, and cosmetics are not applied in the lead abatement areas;

(2) designated change areas are equipped with separate storage facilities for equipment and protective clothing and for street clothes to prevent contamination with lead;

(3) plastic with a minimum thickness of 6 mils shall cover the walls and floor;

(4) no person shall exit the changing area to enter the work area unless they are equipped in conformance with subsection 19a-111-6(d) of the regulations of Connecticut State Agencies;

(5) no contaminated person shall exit this area unless such person has removed their protective clothing, gloves, boot or shoe covers, and respirator;

(6) nor will a person in any other way cause lead contamination to enter the non-work area;

(7) employees do not leave the job site wearing any clothing or equipment, worn during the work shift, that may be contaminated with lead;

(8) employees in lead abatement areas wash their hands prior to eating, drinking, smoking or applying cosmetics.

(Effective September 29, 1992).

19a-111-7. Absence of non-workers during abatement

(a) Residents - Residents shall not occupy a room or work area where on-site lead paint abatement is occurring. The lead work areas where lead abatement is occurring must be sealed from the remainder of the dwelling according to section 19a-111-4 of the regulations of Connecticut State Agencies.

(b) Work area - No person shall enter or remain in a work area at any time during a lead abatement project which involves the on-site removal of lead paint, except for the lead abatement contractor and lead abatement workers, federal, state, and local enforcement officials and their designees, lead inspectors, and the property owner or the owner's designee.

(1) Persons not listed above may enter the work area only after the lead inspector determines that the lead abatement project has been completed in accordance with sections 19a-111-1 through 19a-111-11 of the regulations of Connecticut State Agencies.

(2) All persons present in a work area during a lead abatement project which involves the removal of lead paint shall wear protective equipment as listed in section 19a-111-6(d) of regulations of Connecticut State Agencies.

(3) At all times when a lead abatement project is being conducted in a common area of a dwelling occupied by two (2) or more dwelling units:

(A) residents shall use alternative entrances and exits which do not require passage through the abatement area, if any such entrance and exit exists;

(B) the lead abatement contractor and lead abatement workers shall use all reasonable efforts to create an uncontaminated passage for all dwelling residents;

(C) in the event that the passage in a building can be reached only through the abatement area, abatement in common areas shall be conducted between the hours of 9 A.M. to 3 P.M. only, and the abatement area shall be thoroughly cleaned with a HEPA vacuum at the end of each working day;

(D) all building unit and fire code requirements for access to a dwelling must be maintained for occupied dwellings. If containment required for lead abatement blocks access, then affected dwelling units must be vacated during blockage.

(Effective September 29, 1992).

19a-111-8. Reports to the commissioner

In addition to notification of inspection reports required under subsection 19a-111-3(d) of regulations of Connecticut State Agencies, local code enforcement agencies shall submit a report to the commissioner, on a form prescribed by the commissioner by the 15th day of January, April, July, and October for the previous quarter signed by the head of such agency. This report shall list:

(a) the medical status of all lead poisoned children,

(b) all uncorrected violations at the end of the previous quarter,

(c) all violations corrected during the previous quarter, and

(d) what legal action has been taken regarding each uncorrected violation.

(Effective September 29, 1992).

19a-111-9, 19a-111-10. [REPEALED]

(Repealed effective November 29, 1995.)

19a-111-11. Severability

If any provision of Sections 19a-111-1 through 19a-111-11 inclusive of the regulations of Connecticut State Agencies shall be held inconsistent with federal laws or the laws of the State of Connecticut, that inconsistency shall not affect the remaining provisions.

(Effective September 29, 1992).