



AHERA Building Inspector
Annual Refresher
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Regulations
OSHA and EPA Interpretive rulings
Discussion Quiz

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OSHA references a certified AHERA Inspector

OSHA 29 CFR 1926.1101 (k) Communication of Hazards

(k)(1) This section applies to the communication of information concerning asbestos hazards in construction activities to facilitate compliance with this standard. Most asbestos-related construction activities involve previously installed building materials. Building owners often are the only and/or best sources of information concerning them. Therefore, they, along with employers of potentially exposed employees, are assigned specific information conveying and retention duties under this section. Installed Asbestos Containing Building Material. Employers and building owners shall identify TSI and sprayed or troweled on surfacing materials in buildings as asbestos-containing, unless they determine in compliance with paragraph (k)(5) of this section that the material is not asbestos-containing. Asphalt and vinyl flooring material installed no later than 1980 must also be considered as asbestos containing unless the employer, pursuant to paragraph (g)(8)(i)(I) of this section determines that it is not asbestos-containing. If the employer/building owner has actual knowledge, or should have known through the exercise of due diligence, that other materials are asbestos-containing, they too must be treated as such. When communicating information to employees pursuant to this standard, owners and employers shall identify "PACM" as ACM. Additional requirements relating to communication of asbestos work on multi-employer worksites are set out in paragraph (d) of this section.

(k)(2) Duties of building and facility owners.

(k)(2)(i) Before work subject to this standard is begun, building and facility owners shall determine the presence, location, and quantity of ACM and/or PACM at the work site pursuant to paragraph (k)(1) of this section.

(k)(2)(ii) Building and/or facility owners shall notify the following persons of the presence, location and quantity of ACM or PACM, at the work sites in their buildings and facilities. Notification either shall be in writing, or shall consist of a personal communication between the owner and the person to whom notification must be given or their authorized representatives:

(k)(2)(ii)(A) Prospective employers applying or bidding for work whose employees reasonably can be expected to work in or adjacent to areas containing such material;

(k)(2)(ii)(B) Employees of the owner who will work in or adjacent to areas containing such material:

(k)(2)(ii)(C) On multi-employer worksites, all employers of employees who will be performing work within or adjacent to areas containing such materials;

(k)(2)(ii)(D) Tenants who will occupy areas containing such material.

(k)(3) Duties of employers whose employees perform work subject to this standard in or adjacent to areas containing ACM and PACM. Building/facility owners whose employees perform such work shall comply with these provisions to the extent applicable.

(k)(3)(i) Before work in areas containing ACM and PACM is begun; employers shall identify the presence, location, and quantity of ACM, and/or PACM therein pursuant to paragraph (k)(1) of this section.

(k)(3)(ii) Before work under this standard is performed employers of employees who will perform such work shall inform the following persons of the location and quantity of ACM and/or PACM present in the area and the precautions to be taken to insure that airborne asbestos is confined to the area.

(k)(3)(ii)(A) Owners of the building/facility;

(k)(3)(ii)(B) Employees who will perform such work and employers of employees who work

and/or will be working in adjacent areas.

(k)(3)(iii) Within 10 days of the completion of such work, the employer whose employees have performed work subject to this standard, shall inform the building/facility owner and employers of employees who will be working in the area of the current location and quantity of PACM and/or ACM remaining in the area and final monitoring results, if any.

(k)(4) In addition to the above requirements, all employers who discover ACM and/or PACM on a worksite shall convey information concerning the presence, location and quantity of such newly discovered ACM and/or PACM to the owner and to other employers of employees working at the work site, within 24 hours of the discovery.

(k)(5) Criteria to rebut the designation of installed material as PACM.

(k)(5)(i) At any time, an employer and/or building owner may demonstrate, for purposes of this standard, that PACM does not contain asbestos. Building owners and/or employers are not required to communicate information about the presence of building material for which such a demonstration pursuant to the requirements of paragraph (k)(5)(ii) of this section has been made. However, in all such cases, the information, data and analysis supporting the determination that PACM does not contain asbestos, shall be retained pursuant to paragraph (n) of this section.

(k)(5)(ii) An employer or owner may demonstrate that PACM does not contain more than 1 percent asbestos by the following:

(k)(5)(ii)(A) Having a completed inspection conducted pursuant to the requirements of AHERA (40 CFR Part 763, Subpart E) which demonstrates that the material is not ACM; or

(k)(5)(ii)(B) Performing tests of the material containing PACM which demonstrate that no ACM is present in the material. Such tests shall include analysis of bulk samples collected in the manner described in 40 CFR 763.86. The tests, evaluation and sample collection shall be conducted by an accredited inspector or by a CIH. Analysis of samples shall be performed by persons or laboratories with proficiency demonstrated by current successful participation in a nationally recognized testing program such as the National Voluntary Laboratory Accreditation Program (NVLAP) or the National Institute for Standards and Technology (NIST) or the Round Robin for bulk samples administered by the American Industrial Hygiene Association (AIHA) or an equivalent nationally-recognized round robin testing program.

(k)(5)(iii) The employer and/or building owner may demonstrate that flooring material including associated mastic and backing does not contain asbestos, by a determination of an industrial hygienist based upon recognized analytical techniques showing that the material is not ACM.

NESHAP requires a thorough inspection

EPA 40 CFR 61, subpart M The Asbestos NESHAP

Sec. 61.141 Definitions.

Friable asbestos material means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

This is the most important definition in the NESHAP Regulation. It tells us:

1. The definition of ACM
2. The regulatory analytical method
3. The definition of friability
4. The requirement to point count

Sec. 61.145 Standard for demolition and renovation.

(a) Applicability. To determine which requirements of paragraphs (a), (b), and (c) of this section apply to the owner or operator of a demolition or renovation activity and prior to the commencement of the demolition or renovation, thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable ACM. The requirements of paragraphs (b) and (c) of this section apply to each owner or operator of a demolition or renovation activity, including the removal of RACM as follows:

(1) In a facility being demolished, all the requirements of paragraphs (b) and (c) of this section apply, except as provided in paragraph (a)(3) of this section, if the combined amount of RACM is

- (i) At least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or
- (ii) At least 1 cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously.

(2) In a facility being demolished, only the notification requirements of paragraphs (b)(1), (2), (3)(i) and (iv), and (4)(i) through (vii) and (4)(ix) and (xvi) of this section apply, if the combined amount of RACM is

- (i) Less than 80 linear meters (260 linear feet) on pipes and less than 15 square meters (160 square feet) on other facility components, and
- (ii) Less than one cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously or there is no asbestos.

(3) If the facility is being demolished under an order of a State or local government agency, issued because the facility is structurally unsound and in danger of imminent collapse, only the requirements of paragraphs (b)(1), (b)(2), (b)(3)(iii), (b)(4) (except (b)(4)(viii)), (b)(5), and (c)(4) through (c)(9) of this section apply.

(4) In a facility being renovated, including any individual nonscheduled renovation operation, all the requirements of paragraphs (b) and (c) of this section apply if the combined amount of RACM to be stripped, removed, dislodged, cut, drilled, or similarly disturbed is

- (i) At least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or
- (ii) At least 1 cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously.

Point count

Thorough Inspection

Demo above threshold

Demo below threshold

Ordered demo

Renovation with RACM

(iii) To determine whether paragraph (a)(4) of this section applies to planned renovation operations involving individual nonscheduled operations, predict the combined additive amount of RACM to be removed or stripped during a calendar year of January 1 through December 31.

(iv) To determine whether paragraph (a)(4) of this section applies to emergency renovation operations, estimate the combined amount of RACM to be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation.

AHERA

Asbestos Hazard Emergency Response Act
40 CFR 763, Subpart E



Arizona, California, Nevada and World-wide

MANAGING ASBESTOS IN BUILDINGS

Although this federal regulation applies only to schools, it is the only regulatory reference we have to apply to the concept of “O&M” (Operations and Maintenance), or how to manage asbestos safely in an occupied building which contains installed asbestos containing materials (ACM). If a building owner needs to reference federal regulation to support asbestos management practices, this is the regulation.

An extra-regulatory reference that should be used is “*Managing Asbestos in Buildings: A Guide for Owners and Managers*”, published by the Environmental Information Association (EIA), 2015. This is the most up to date, accurate and comprehensive resource on the subject.

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40 CFR 763
Subpart E—Asbestos-Containing Materials in Schools
SOURCE: 52 FR 41846, Oct. 30, 1987, unless otherwise noted.

Sec.

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§ 763.80 Scope and purpose.

(a) This rule requires local education agencies to identify friable and nonfriable asbestos-containing material (ACM) in public and private elementary and secondary schools by visually inspecting school buildings for such materials, sampling such materials if they are not assumed to be ACM, and having samples analyzed by appropriate techniques referred to in this rule. The rule requires local education agencies to submit management plans to the Governor of their State by October 12, 1988, begin to implement the plans by July 9, 1989, and complete implementation of the plans in a timely fashion. In addition, local education agencies are required to use persons who have been accredited to conduct inspections, reinspections, develop management plans, or perform response actions. The rule also includes recordkeeping requirements. Local education agencies may contractually delegate their duties under this rule, but they remain responsible for the proper performance of those duties. Local education agencies are encouraged to consult with EPA Regional Asbestos Coordinators, or if applicable, a State's lead agency designated by the State Governor, for assistance in complying with this rule.

(b) Local education agencies must provide for the transportation and disposal of asbestos in accordance with EPA's "Asbestos Waste Management Guidance." For convenience, applicable sections of this guidance are reprinted as Appendix D of this subpart. There are regulations in place, however, that affect transportation and disposal of asbestos waste generated by this rule. The transportation of asbestos waste is covered by the Department of Transportation (49 CFR part 173, subpart J) and disposal is covered by the National Emissions Standards for Hazardous Air Pollutants (NESHAP) (40 CFR part 61, subpart M).

§ 763.83 Definitions.

For purposes of this subpart:

Act means the Toxic Substances Control Act (TSCA), 15 U.S.C. 2601, *et seq.*

Accessible when referring to ACM means that the material is subject to disturbance by school building occupants or custodial or maintenance personnel in the course of their normal activities.

Accredited or accreditation when referring to a person or laboratory means that such person or laboratory is accredited in accordance with section 206 of Title II of the Act.

Air erosion means the passage of air over friable ACBM which may result in the release of asbestos fibers.

Asbestos means the asbestiform varieties of: Chrysotile (serpentine); crocidolite (riebeckite); amosite (cummingtonite/grunerite); anthophyllite; tremolite; and actinolite.

Asbestos-containing material (ACM) when referring to school buildings means any material or product which contains more than 1 percent asbestos.

Asbestos-containing building material (ACBM) means surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a school building.

Asbestos debris means pieces of ACBM that can be identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.

Damaged friable miscellaneous ACM means friable miscellaneous ACM which has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or, if applicable, which has delaminated such that its bond to the substrate (adhesion) is inadequate or which for any other reason lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separation of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; significant or repeated water stains, scrapes, gouges, mars or other signs of physical injury on the ACM. Asbestos debris originating from the ACBM in question may also indicate damage.

Damaged friable surfacing ACM means friable surfacing ACM which has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or which has delaminated such that its bond to the substrate (adhesion) is inadequate, or which, for any other reason, lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separation of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; significant or repeated water stains, scrapes, gouges, mars or other signs of physical injury on the ACM. Asbestos debris originating from the ACBM in question may also indicate damage.

Damaged or significantly damaged thermal system insulation ACM means thermal system insulation ACM on pipes, boilers, tanks, ducts, and other thermal system insulation equipment where the insulation has lost its structural integrity, or its covering, in whole or in part, is crushed, waterstained, gouged, punctured, missing, or not intact such that it is not able to contain fibers. Damage may be further illustrated by occasional punctures, gouges or other signs of physical injury to ACM; occasional water damage on the protective coverings/jackets; or exposed ACM ends or joints. Asbestos debris originating from the ACBM in question may also indicate damage.

Encapsulation means the treatment of ACBM with a material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent the release of fibers, as the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material and binds its components together (penetrating encapsulant).

Enclosure means an airtight, impermeable, permanent barrier around ACBM to prevent the release of asbestos fibers into the air.

Fiber release episode means any uncontrolled or unintentional disturbance of ACBM resulting in visible emission.

Friable when referring to material in a school building means that the material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, and includes previously nonfriable material after such previously nonfriable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

Functional space means a room, group of rooms, or homogeneous area (including crawl spaces or the space between a dropped ceiling and the floor or roof deck above), such as classroom(s), a cafeteria, gymnasium, hallway(s), designated by a person accredited to prepare management plans, design abatement projects, or conduct response actions.

High-efficiency particulate air (HEPA) refers to a filtering system capable of trapping and retaining at least 99.97 percent of all monodispersed particles 0.3 μ m in diameter or larger.

Homogeneous area means an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture.

Local education agency means:

(1) Any local educational agency as defined in section 198 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 3381).

(2) The owner of any nonpublic, nonprofit elementary, or secondary school building.

(3) The governing authority of any school operated under the defense dependent's education system provided for under the Defense Dependents' Education Act of 1978 (20 U.S.C. 921, et seq.).

Miscellaneous ACM means miscellaneous material that is ACM in a school building.

Miscellaneous material means interior building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation.

Nonfriable means material in a school building which when dry may not be crumbled, pulverized, or reduced to powder by hand pressure.

Operations and maintenance program means a program of work practices to maintain friable ACBM in good condition, ensure clean up of asbestos fibers previously released, and prevent further release by minimizing and controlling friable ACBM disturbance or damage.

Potential damage means circumstances in which:

(1) Friable ACBM is in an area regularly used by building occupants, including maintenance personnel, in the course of their normal activities.

(2) There are indications that there is a reasonable likelihood that the material or its covering will become damaged, deteriorated, or delaminated due to factors such as changes in building use, changes in operations and maintenance practices, changes in occupancy, or recurrent damage.

Potential significant damage means circumstances in which:

(1) Friable ACBM is in an area regularly used by building occupants, including maintenance personnel, in the course of their normal activities.

(2) There are indications that there is a reasonable likelihood that the material or its covering will become significantly damaged, deteriorated, or delaminated due to factors such as changes in building use, changes in operations and maintenance practices, changes in occupancy, or recurrent damage.

(3) The material is subject to major or continuing disturbance, due to factors including, but not limited to, accessibility or, under certain circumstances, vibration or air erosion.

Preventive measures means actions taken to reduce disturbance of ACBM or otherwise eliminate the reasonable likelihood of the material's becoming damaged or significantly damaged.

Removal means the taking out or the stripping of substantially all ACBM from a damaged area, a functional space, or a homogeneous area in a school building.

Repair means returning damaged ACBM to an undamaged condition or to an intact state so as to prevent fiber release.

Response action means a method, including removal, encapsulation, enclosure, repair, operations and maintenance, that protects human health and the environment from friable ACBM.

Routine maintenance area means an area, such as a boiler room or mechanical room, that is not normally frequented by students and in which maintenance employees or contract workers regularly conduct maintenance activities.

School means any elementary or secondary school as defined in section 198 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 2854).

School building means:

(1) Any structure suitable for use as a classroom, including a school facility such as a laboratory, library, school eating facility, or facility used for the preparation of food.

(2) Any gymnasium or other facility which is specially designed for athletic or recreational activities for an academic course in physical education.

(3) Any other facility used for the instruction or housing of students or for the administration of educational or research programs.

(4) Any maintenance, storage, or utility facility, including any hallway, essential to the operation of any facility described in this definition of "school building" under paragraphs (1), (2), or (3).

(5) Any portico or covered exterior hallway or walkway.

(6) Any exterior portion of a mechanical system used to condition interior space.

Significantly damaged friable miscellaneous ACM means damaged friable miscellaneous ACM where the damage is extensive and severe.

Significantly damaged friable surfacing ACM means damaged friable surfacing ACM in a functional space where the damage is extensive and severe.

State means a State, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Northern Marianas, the Trust Territory of the Pacific Islands, and the Virgin Islands.

Surfacing ACM means surfacing material that is ACM.

Surfacing material means material in a school building that is sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

Thermal system insulation means material in a school building applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes.

Thermal system insulation ACM means thermal system insulation that is ACM.

Vibration means the periodic motion of friable ACBM which may result in the release of asbestos fibers.

§ 763.84 General local education agency responsibilities.

Each local education agency shall:

(a) Ensure that the activities of any persons who perform inspections, reinspections, and periodic surveillance, develop and update management plans, and develop and implement response actions, including operations and maintenance, are carried out in accordance with subpart E of this part.

(b) Ensure that all custodial and maintenance employees are properly trained as required by this subpart E and other applicable Federal and/or State regulations (e.g., the Occupational Safety and Health Administration asbestos standard for construction, the EPA worker protection rule, or applicable State regulations).

(c) Ensure that workers and building occupants, or their legal guardians, are informed at least once each school year about inspections, response actions, and post-response action activities, including periodic reinspection and surveillance activities that are planned or in progress.

(d) Ensure that short-term workers (e.g., telephone repair workers, utility workers, or exterminators) who may come in contact with asbestos in a school are provided information regarding the locations of ACBM and suspected ACBM assumed to be ACM.

(e) Ensure that warning labels are posted in accordance with § 763.95.

(f) Ensure that management plans are available for inspection and notification of such availability has been provided as specified in the management plan under § 763.93(g).

(g)(1) Designate a person to ensure that requirements under this section are properly implemented.

(2) Ensure that the designated person receives adequate training to perform duties assigned under this section. Such training shall provide, as necessary, basic knowledge of:

(i) Health effects of asbestos.

(ii) Detection, identification, and assessment of ACM.

(iii) Options for controlling ACBM.

(iv) Asbestos management programs.

(v) Relevant Federal and State regulations concerning asbestos, including those in this subpart E and those of the Occupational Safety and Health Administration, U.S. Department of Labor, the U.S. Department of Transportation and the U.S. Environmental Protection Agency.

(h) Consider whether any conflict of interest may arise from the interrelationship among accredited personnel and whether that should influence the selection of accredited personnel to perform activities under this subpart.

§ 763.85 Inspection and reinspections.

(a) **Inspection.** (1) Except as provided in paragraph (a)(2) of this section, before October 12, 1988, local education agencies shall inspect each school building that they lease, own, or otherwise use as a school building to identify all locations of friable and nonfriable ACBM.

(2) Any building leased or acquired on or after October 12, 1988, that is to be used as a school building shall be inspected as described under paragraphs (a) (3) and (4) of this section prior to use as a school building. In the event that emergency use of an uninspected building as a school building is necessitated, such buildings shall be inspected within 30 days after commencement of such use.

(3) Each inspection shall be made by an accredited inspector.

(4) For each area of a school building, except as excluded under § 763.99, each person performing an inspection shall:

(i) Visually inspect the area to identify the locations of all suspected ACBM.

(ii) Touch all suspected ACBM to determine whether they are friable.

(iii) Identify all homogeneous areas of friable suspected ACBM and all homogeneous areas of nonfriable suspected ACBM.

(iv) Assume that some or all of the homogeneous areas are ACM, and, for each homogeneous area that is not assumed to be ACM, collect and submit for analysis bulk samples under §§ 763.86 and 763.87.

(v) Assess, under § 763.88, friable material in areas where samples are collected, friable material in areas that are assumed to be ACBM, and friable ACBM identified during a previous inspection.

(vi) Record the following and submit to the person designated under § 763.84 a copy of such record for inclusion in the management plan within 30 days of the inspection:

(A) An inspection report with the date of the inspection signed by each accredited person making the inspection, State of accreditation, and if applicable, his or her accreditation number.

(B) An inventory of the locations of the homogeneous areas where samples are collected, exact location where each bulk sample is collected, dates that samples are collected, homogeneous areas where friable suspected ACBM is assumed to be ACM, and homogeneous areas where nonfriable suspected ACBM is assumed to be ACM.

(C) A description of the manner used to determine sampling locations, the name and signature of each accredited inspector who collected the samples, State of accreditation, and, if applicable, his or her accreditation number.

(D) A list of whether the homogeneous areas identified under paragraph (a)(4)(vi)(B) of this section, are surfacing material, thermal system insulation, or miscellaneous material.

(E) Assessments made of friable material, the name and signature of each accredited inspector making the assessment, State of accreditation, and if applicable, his or her accreditation number.

(b) Reinspection. (1) At least once every 3 years after a management plan is in effect, each local education agency shall conduct a reinspection of all friable and nonfriable known or assumed ACBM in each school building that they lease, own, or otherwise use as a school building.

(2) Each inspection shall be made by an accredited inspector.

(3) For each area of a school building, each person performing a reinspection shall:

(i) Visually reinspect, and reassess, under § 763.88, the condition of all friable known or assumed ACBM.

(ii) Visually inspect material that was previously considered nonfriable ACBM and touch the material to determine whether it has become friable since the last inspection or reinspection.

(iii) Identify any homogeneous areas with material that has become friable since the last inspection or reinspection.

(iv) For each homogeneous area of newly friable material that is already assumed to be ACBM, bulk samples may be collected and submitted for analysis in accordance with §§ 763.86 and 763.87.

(v) Assess, under § 763.88, the condition of the newly friable material in areas where samples are collected, and newly friable materials in areas that are assumed to be ACBM.

(vi) Reassess, under § 763.88, the condition of friable known or assumed ACBM previously identified.

(vii) Record the following and submit to the person designated under § 763.84 a copy of such record for inclusion in the management plan within 30 days of the reinspection:

(A) The date of the reinspection, the name and signature of the person making the reinspection, State of accreditation, and if applicable, his or her accreditation number, and any changes in the condition of known or assumed ACBM.

(B) The exact locations where samples are collected during the reinspection, a description of the

manner used to determine sampling locations, the name and signature of each accredited inspector who collected the samples, State of accreditation, and, if applicable, his or her accreditation number.

(C) Any assessments or reassessments made of friable material, the name and signature of the accredited inspector making the assessments, State of accreditation, and if applicable, his or her accreditation number.

(c) General. Thermal system insulation that has retained its structural integrity and that has an undamaged protective jacket or wrap that prevents fiber release shall be treated as nonfriable and therefore is subject only to periodic surveillance and preventive measures as necessary.

§ 763.86 Sampling.

(a) Surfacing material. An accredited inspector shall collect, in a statistically random manner that is representative of the homogeneous area, bulk samples from each homogeneous area of friable surfacing material that is not assumed to be ACM, and shall collect the samples as follows:

(1) At least three bulk samples shall be collected from each homogeneous area that is 1,000 ft² or less, except as provided in § 763.87(c)(2).

(2) At least five bulk samples shall be collected from each homogeneous area that is greater than 1,000 ft² but less than or equal to 5,000 ft², except as provided in § 763.87(c)(2).

(3) At least seven bulk samples shall be collected from each homogeneous area that is greater than 5,000 ft², except as provided in § 763.87(c)(2).

(b) Thermal system insulation. (1) Except as provided in paragraphs (b) (2) through (4) of this section and § 763.87(c), an accredited inspector shall collect, in a randomly distributed manner, at least three bulk samples from each homogeneous area of thermal system insulation that is not assumed to be ACM.

(2) Collect at least one bulk sample from each homogeneous area of patched thermal system insulation that is not assumed to be ACM if the patched section is less than 6 linear or square feet.

(3) In a manner sufficient to determine whether the material is ACM or not ACM, collect bulk samples from each insulated mechanical system that is not assumed to be ACM where cement or plaster is used on fittings such as tees, elbows, or valves, except as provided under § 763.87(c)(2).

(4) Bulk samples are not required to be collected from any homogeneous area where the accredited inspector has determined that the thermal system insulation is fiberglass, foam glass, rubber, or other non-ACBM.

(c) Miscellaneous material. In a manner sufficient to determine whether material is ACM or not ACM, an accredited inspector shall collect bulk samples from each homogeneous area of friable miscellaneous material that is not assumed to be ACM.

(d) Nonfriable suspected ACBM. If any homogeneous area of nonfriable suspected ACBM is not assumed to be ACM, then an accredited inspector shall collect, in a manner sufficient to determine whether the material is ACM or not ACM, bulk samples from the homogeneous area of nonfriable suspected ACBM that is not assumed to be ACM.

§ 763.87 Analysis.

(a) Local education agencies shall have bulk samples, collected under § 763.86 and submitted for analysis, analyzed for asbestos using laboratories accredited by the National Bureau of Standards (NBS). Local education agencies shall use laboratories which have received interim accreditation for polarized light microscopy (PLM) analysis under the EPA Interim Asbestos Bulk Sample Analysis Quality Assurance Program until the NBS PLM laboratory accreditation program for PLM is operational.

(b) Bulk samples shall not be composited for analysis and shall be analyzed for asbestos content by PLM, using the "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" found at appendix E to subpart E of this part.

(c)(1) A homogeneous area is considered not to contain ACM only if the results of all samples required to

be collected from the area show asbestos in amounts of 1 percent or less.

(2) A homogeneous area shall be determined to contain ACM based on a finding that the results of at least one sample collected from that area shows that asbestos is present in an amount greater than 1 percent.

(d) The name and address of each laboratory performing an analysis, the date of analysis, and the name and signature of the person performing the analysis shall be submitted to the person designated under § 763.84 for inclusion into the management plan within 30 days of the analysis.

[52 FR 41846, Oct. 30, 1987, as amended at 60 FR 31922, June 19, 1995]

§ 763.88 Assessment.

(a)(1) For each inspection and reinspection conducted under § 763.85 (a) and (c) and previous inspections specified under § 763.99, the local education agency shall have an accredited inspector provide a written assessment of all friable known or assumed ACBM in the school building.

(2) Each accredited inspector providing a written assessment shall sign and date the assessment, provide his or her State of accreditation, and if applicable, accreditation number, and submit a copy of the assessment to the person designated under § 763.84 for inclusion in the management plan within 30 days of the assessment.

(b) The inspector shall classify and give reasons in the written assessment for classifying the ACBM and suspected ACBM assumed to be ACM in the school building into one of the following categories:

- (1) Damaged or significantly damaged thermal system insulation ACM.
- (2) Damaged friable surfacing ACM.
- (3) Significantly damaged friable surfacing ACM.
- (4) Damaged or significantly damaged friable miscellaneous ACM.
- (5) ACBM with potential for damage.
- (6) ACBM with potential for significant damage.
- (7) Any remaining friable ACBM or friable suspected ACBM.

(c) Assessment may include the following considerations:

(1) Location and the amount of the material, both in total quantity and as a percentage of the functional space.

(2) Condition of the material, specifying:

(i) Type of damage or significant damage (e.g., flaking, blistering, water damage, or other signs of physical damage).

(ii) Severity of damage (e.g., major flaking, severely torn jackets, as opposed to occasional flaking, minor tears to jackets).

(iii) Extent or spread of damage over large areas or large percentages of the homogeneous area.

(3) Whether the material is accessible.

(4) The material's potential for disturbance.

(5) Known or suspected causes of damage or significant damage (e.g., air erosion, vandalism, vibration, water).

(6) Preventive measures which might eliminate the reasonable likelihood of undamaged ACM from becoming significantly damaged.

(d) The local education agency shall select a person accredited to develop management plans to review the results of each inspection, reinspection, and assessment for the school building and to conduct any other necessary activities in order to recommend in writing to the local education agency appropriate response actions. The accredited person shall sign and date the recommendation, provide his or her State of accreditation, and, if applicable, provide his or her accreditation number, and submit a copy of the recommendation to the person designated under § 763.84 for inclusion in the management plan.

§ 763.90 Response actions.

(a) The local education agency shall select and implement in a timely manner the appropriate response actions in this section consistent with the assessment conducted in § 763.88. The response actions selected shall be sufficient to protect human health and the environment. The local education agency may then select, from the response actions which protect human health and the environment, that action which is the least burdensome method. Nothing in this section shall be construed to prohibit removal of ACM from a school building at any time, should removal be the preferred response action of the local education agency.

(b) If damaged or significantly damaged thermal system insulation ACM is present in a building, the local education agency shall:

- (1) At least repair the damaged area.
- (2) Remove the damaged material if it is not feasible, due to technological factors, to repair the damage.
- (3) Maintain all thermal system insulation ACM and its covering in an intact state and undamaged condition.

(c)(1) If damaged friable surfacing ACM or damaged friable miscellaneous ACM is present in a building, the local education agency shall select from among the following response actions: encapsulation, enclosure, removal, or repair of the damaged material.

(2) In selecting the response action from among those which meet the definitional standards in § 763.83, the local education agency shall determine which of these response actions protects human health and the environment. For purposes of determining which of these response actions are the least burdensome, the local education agency may then consider local circumstances, including occupancy and use patterns within the school building, and its economic concerns, including short- and long-term costs.

(d) If significantly damaged friable surfacing ACM or significantly damaged friable miscellaneous ACM is present in a building the local education agency shall:

- (1) Immediately isolate the functional space and restrict access, unless isolation is not necessary to protect human health and the environment.
- (2) Remove the material in the functional space or, depending upon whether enclosure or encapsulation would be sufficient to protect human health and the environment, enclose or encapsulate.

(e) If any friable surfacing ACM, thermal system insulation ACM, or friable miscellaneous ACM that has potential for damage is present in a building, the local education agency shall at least implement an operations and maintenance (O&M) program, as described under § 763.91.

(f) If any friable surfacing ACM, thermal system insulation ACM, or friable miscellaneous ACM that has potential for significant damage is present in a building, the local education agency shall:

- (1) Implement an O&M program, as described under § 763.91.
- (2) Institute preventive measures appropriate to eliminate the reasonable likelihood that the ACM or its covering will become significantly damaged, deteriorated, or delaminated.
- (3) Remove the material as soon as possible if appropriate preventive measures cannot be effectively implemented, or unless other response actions are determined to protect human health and the environment. Immediately isolate the area and restrict access if necessary to avoid an imminent and substantial endangerment to human health or the environment.

(g) Response actions including removal, encapsulation, enclosure, or repair, other than small-scale, short-duration repairs, shall be designed and conducted by persons accredited to design and conduct response actions.

(h) The requirements of this subpart E in no way supersede the worker protection and work practice requirements under 29 CFR 1926.1101 (Occupational Safety and Health Administration (OSHA) asbestos worker protection standards for construction), 40 CFR part 763, subpart G (EPA asbestos worker protection standards for public employees), and 40 CFR part 61, subpart M (National Emission Standards for Hazardous Air Pollutants—Asbestos).

(i) Completion of response actions. (1) At the conclusion of any action to remove, encapsulate, or enclose ACBM or material assumed to be ACBM, a person designated by the local education agency shall visually inspect each functional space where such action was conducted to determine whether the action has been properly completed.

(2)(i) A person designated by the local education agency shall collect air samples using aggressive sampling as described in appendix A to this subpart E to monitor air for clearance after each removal, encapsulation, and enclosure project involving ACBM, except for projects that are of small-scale, short-duration.

(ii) Local education agencies shall have air samples collected under this section analyzed for asbestos using laboratories accredited by the National Bureau of Standards to conduct such analysis using transmission electron microscopy (TEM) or, under circumstances permitted in this section, laboratories enrolled in the American Industrial Hygiene Association Proficiency Analytical Testing Program for phase contrast microscopy (PCM).

(iii) Until the National Bureau of Standards TEM laboratory accreditation program is operational, local educational agencies shall use laboratories that use the protocol described in appendix A to subpart E of this part.

(3) Except as provided in paragraphs (i)(4), and (i)(5), of this section, an action to remove, encapsulate, or enclose ACBM shall be considered complete when the average concentration of asbestos of five air samples collected within the affected functional space and analyzed by the TEM method in appendix A of this subpart E, is not statistically significantly different, as determined by the Z-test calculation found in appendix A of this subpart E, from the average asbestos concentration of five air samples collected at the same time outside the affected functional space and analyzed in the same manner, and the average asbestos concentration of the three field blanks described in appendix A of this subpart E is below the filter background level, as defined in appendix A of this subpart E, of 70 structures per square millimeter (70 s/mm²).

(4) An action may also be considered complete if the volume of air drawn for each of the five samples collected within the affected functional space is equal to or greater than 1,199 L of air for a 25 mm filter or equal to or greater than 2,799 L of air for a 37 mm filter, and the average concentration of asbestos as analyzed by the TEM method in appendix A of this subpart E, for the five air samples does not exceed the filter background level, as defined in appendix A, of 70 structures per square millimeter (70 s/mm²). If the average concentration of asbestos of the five air samples within the affected functional space exceeds 70 s/mm², or if the volume of air in each of the samples is less than 1,199 L of air for a 25 mm filter or less than 2,799 L of air for a 37 mm filter, the action shall be considered complete only when the requirements of paragraph (i)(3) or (i)(5), of this section are met.

(5) At any time, a local education agency may analyze air monitoring samples collected for clearance purposes by phase contrast microscopy (PCM) to confirm completion of removal, encapsulation, or enclosure of ACBM that is greater than small-scale, short-duration and less than or equal to 160 square feet or 260 linear feet. The action shall be considered complete when the results of samples collected in the affected functional space and analyzed by phase contrast microscopy using the National Institute for Occupational Safety and Health (NIOSH) Method 7400 entitled "Fibers" published in the NIOSH Manual of Analytical Methods, 3rd Edition, Second Supplement, August 1987, show that the concentration of fibers for each of the five samples is less than or equal to a limit of quantitation for PCM (0.01 fibers per cubic centimeter (0.01 f/cm³) of air). The method is available for public inspection at the Non-Confidential Information Center (NCIC) (7407), Office of Pollution Prevention and Toxics, U.S. Environmental Protection Agency, Room B-607 NEM, 401 M St., SW., Washington, DC 20460, between the hours of 12 p.m. and 4 p.m. weekdays excluding legal holidays or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federalregister/codeoffederalregulations/ibrlocations.html>. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The method is incorporated as it exists on the effective date of this rule, and a notice of any change to the method will be published in the FEDERAL REGISTER.

(6) To determine the amount of ACBM affected under paragraph (i)(5) of this section, the local education agency shall add the total square or linear footage of ACBM within the containment barriers used to isolate the functional space for the action to remove, encapsulate, or enclose the ACBM.

Contiguous portions of material subject to such action conducted concurrently or at approximately the same time within the same school building shall not be separated to qualify under paragraph (i)(5), of this section.

[52 FR 41846, Oct. 30, 1987, as amended at 53 FR 12525, Apr. 15, 1988; 60 FR 31922, June 19, 1995; 60 FR 34465, July 3, 1995; 69 FR 18803, Apr. 9, 2004]

§ 763.91 Operations and maintenance.

(a) Applicability. The local education agency shall implement an operations, maintenance, and repair (O&M) program under this section whenever any friable ACBM is present or assumed to be present in a building that it leases, owns, or otherwise uses as a school building. Any material identified as nonfriable ACBM or nonfriable assumed ACBM must be treated as friable ACBM for purposes of this section when the material is about to become friable as a result of activities performed in the school building.

(b) Worker protection. Local education agencies must comply with either the OSHA Asbestos Construction Standard at 29 CFR 1926.1101, or the Asbestos Worker Protection Rule at 40 CFR 763.120, whichever is applicable.

(c) Cleaning. (1) *Initial cleaning.* Unless the building has been cleaned using equivalent methods within the previous 6 months, all areas of a school building where friable ACBM, damaged or significantly damaged thermal system insulation ACM, or friable suspected ACBM assumed to be ACM are present shall be cleaned at least once after the completion of the inspection required by § 763.85(a) and before the initiation of any response action, other than O&M activities or repair, according to the following procedures:

- (i) HEPA-vacuum or steam-clean all carpets.
- (ii) HEPA-vacuum or wet-clean all other floors and all other horizontal surfaces.
- (iii) Dispose of all debris, filters, mopheads, and cloths in sealed, leaktight containers.

(2) *Additional cleaning.* The accredited management planner shall make a written recommendation to the local education agency whether additional cleaning is needed, and if so, the methods and frequency of such cleaning.

(d) Operations and maintenance activities. The local education agency shall ensure that the procedures described below to protect building occupants shall be followed for any operations and maintenance activities disturbing friable ACBM:

- (1) Restrict entry into the area by persons other than those necessary to perform the maintenance project, either by physically isolating the area or by scheduling.
- (2) Post signs to prevent entry by unauthorized persons.
- (3) Shut off or temporarily modify the air-handling system and restrict other sources of air movement.
- (4) Use work practices or other controls, such as, wet methods, protective clothing, HEPA-vacuums, mini-enclosures, glove bags, as necessary to inhibit the spread of any released fibers.
- (5) Clean all fixtures or other components in the immediate work area.
- (6) Place the asbestos debris and other cleaning materials in a sealed, leak-tight container.

(e) Maintenance activities other than small-scale, short-duration. The response action for any maintenance activities disturbing friable ACBM, other than small-scale, short-duration maintenance activities, shall be designed by persons accredited to design response actions and conducted by persons accredited to conduct response actions.

(f) Fiber release episodes. (1) *Minor fiber release episode.* The local education agency shall ensure that the procedures described below are followed in the event of a minor fiber release episode (i.e., the falling or dislodging of 3 square or linear feet or less of friable ACBM):

- (i) Thoroughly saturate the debris using wet methods.
- (ii) Clean the area, as described in paragraph (e) of this section.
- (iii) Place the asbestos debris in a sealed, leak-tight container.
- (iv) Repair the area of damaged ACM with materials such as asbestos-free spackling, plaster, cement, or insulation, or seal with latex paint or an encapsulant, or immediately have the appropriate

response action implemented as required by § 763.90.

(2) *Major fiber release episode.* The local education agency shall ensure that the procedures described below are followed in the event of a major fiber release episode (i.e., the falling or dislodging of more than 3 square or linear feet of friable ACBM):

(i) Restrict entry into the area and post signs to prevent entry into the area by persons other than those necessary to perform the response action.

(ii) Shut off or temporarily modify the air-handling system to prevent the distribution of fibers to other areas in the building.

(iii) The response action for any major fiber release episode must be designed by persons accredited to design response actions and conducted by persons accredited to conduct response actions.

[52 FR 41846, Oct. 30, 1987, as amended at 65 FR 69216, Nov. 15, 2000]

§ 763.92 Training and periodic surveillance.

(a) Training. (1) The local education agency shall ensure, prior to the implementation of the O&M provisions of the management plan, that all members of its maintenance and custodial staff (custodians, electricians, heating/ air conditioning engineers, plumbers, etc.) who may work in a building that contains ACBM receive awareness training of at least 2 hours, whether or not they are required to work with ACBM. New custodial and maintenance employees shall be trained within 60 days after commencement of employment. Training shall include, but not be limited to:

(i) Information regarding asbestos and its various uses and forms.

(ii) Information on the health effects associated with asbestos exposure.

(iii) Locations of ACBM identified throughout each school building in which they work.

(iv) Recognition of damage, deterioration, and delamination of ACBM.

(v) Name and telephone number of the person designated to carry out general local education agency responsibilities under § 763.84 and the availability and location of the management plan.

(2) The local education agency shall ensure that all members of its maintenance and custodial staff who conduct any activities that will result in the disturbance of ACBM shall receive training described in paragraph (a)(1) of this section and 14 hours of additional training. Additional training shall include, but not be limited to:

(i) Descriptions of the proper methods of handling ACBM.

(ii) Information on the use of respiratory protection as contained in the EPA/NIOSH *Guide to Respiratory Protection for the Asbestos Abatement Industry*, September 1986 (EPA 560/OPPTS-86-001), available from the Director, Environmental Assistance Division (7408), Office of Pollution Prevention and Toxics, U.S. Environmental Protection Agency, Room E-543B, 1200 Pennsylvania Ave., NW., Washington, DC 20460, Telephone: (202) 554-1404, TDD: (202) 544-0551 and other personal protection measures.

(iii) The provisions of this section and § 763.91, Appendices A, C, and D of this subpart E of this part, EPA regulations contained in 40 CFR part 763, subpart G, and in 40 CFR part 61, subpart M, and OSHA regulations contained in 29 CFR 1926.1101.

(iv) Hands-on training in the use of respiratory protection, other personal protection measures, and good work practices.

(3) Local education agency maintenance and custodial staff who have attended EPA-approved asbestos training or received equivalent training for O&M and periodic surveillance activities involving asbestos shall be considered trained for the purposes of this section.

(b) Periodic surveillance. (1) At least once every 6 months after a management plan is in effect, each local education agency shall conduct periodic surveillance in each building that it leases, owns, or otherwise uses as a school building that contains ACBM or is assumed to contain ACBM.

(2) Each person performing periodic surveillance shall:

(i) Visually inspect all areas that are identified in the management plan as ACBM or assumed ACBM.

(ii) Record the date of the surveillance, his or her name, and any changes in the condition of the materials.

(iii) Submit to the person designated to carry out general local education agency responsibilities under § 763.84 a copy of such record for inclusion in the management plan.

[52 FR 41846, Oct. 30, 1987, as amended at 60 FR 34465, July 3, 1995; 65 FR 69216, Nov. 15,

2000]

§ 763.93 Management plans.

(a)(1) On or before October 12, 1988, each local education agency shall develop an asbestos management plan for each school, including all buildings that they lease, own, or otherwise use as school buildings, and submit the plan to an Agency designated by the Governor of the State in which the local education agency is located. The plan may be submitted in stages that cover a portion of the school buildings under the authority of the local education agency.

(2) If a building to be used as part of a school is leased or otherwise acquired after October 12, 1988, the local education agency shall include the new building in the management plan for the school prior to its use as a school building. The revised portions of the management plan shall be submitted to the Agency designated by the Governor.

(3) If a local education agency begins to use a building as a school after October 12, 1988, the local education agency shall submit a management plan for the school to the Agency designated by the Governor prior to its use as a school.

(b) On or before October 17, 1987, the Governor of each State shall notify local education agencies in the State regarding where to submit their management plans. States may establish administrative procedures for reviewing management plans. If the Governor does not disapprove a management plan within 90 days after receipt of the plan, the local education agency shall implement the plan.

(c) Each local education agency must begin implementation of its management plan on or before July 9, 1989, and complete implementation in a timely fashion.

(d) Each local education agency shall maintain and update its management plan to keep it current with ongoing operations and maintenance, periodic surveillance, inspection, reinspection, and response action activities. All provisions required to be included in the management plan under this section shall be retained as part of the management plan, as well as any information that has been revised to bring the plan up-to-date.

(e) The management plan shall be developed by an accredited management planner and shall include:

(1) A list of the name and address of each school building and whether the school building contains friable ACBM, nonfriable ACBM, and friable and nonfriable suspected ACBM assumed to be ACM.

(2) For each inspection conducted before the December 14, 1987:

(i) The date of the inspection.

(ii) A blueprint, diagram, or written description of each school building that identifies clearly each location and approximate square or linear footage of any homogeneous or sampling area where material was sampled for ACM, and, if possible, the exact locations where bulk samples were collected, and the dates of collection.

(iii) A copy of the analyses of any bulk samples, dates of analyses, and a copy of any other laboratory reports pertaining to the analyses.

(iv) A description of any response actions or preventive measures taken to reduce asbestos exposure, including if possible, the names and addresses of all contractors involved, start and completion dates of the work, and results of any air samples analyzed during and upon completion of the work.

(v) A description of assessments, required to be made under § 763.88, of material that was identified before December 14, 1987, as friable ACBM or friable suspected ACBM assumed to be ACM, and the name and signature, State of accreditation, and if applicable, accreditation number of each accredited person making the assessments.

(3) For each inspection and reinspection conducted under § 763.85:

(i) The date of the inspection or reinspection and the name and signature, State of accreditation and, if applicable, the accreditation number of each accredited inspector performing the inspection or reinspection.

(ii) A blueprint, diagram, or written description of each school building that identifies clearly each location and approximate square or linear footage of homogeneous areas where material was sampled for ACM, the exact location where each bulk sample was collected, date of collection, homogeneous

areas where friable suspected ACBM is assumed to be ACM, and where nonfriable suspected ACBM is assumed to be ACM.

(iii) A description of the manner used to determine sampling locations, and the name and signature of each accredited inspector collecting samples, the State of accreditation, and if applicable, his or her accreditation number.

(iv) A copy of the analyses of any bulk samples collected and analyzed, the name and address of any laboratory that analyzed bulk samples, a statement that the laboratory meets the applicable requirements of § 763.87(a) the date of analysis, and the name and signature of the person performing the analysis.

(v) A description of assessments, required to be made under § 763.88, of all ACBM and suspected ACBM assumed to be ACM, and the name, signature, State of accreditation, and if applicable, accreditation number of each accredited person making the assessments.

(4) The name, address, and telephone number of the person designated under § 763.84 to ensure that the duties of the local education agency are carried out, and the course name, and dates and hours of training taken by that person to carry out the duties.

(5) The recommendations made to the local education agency regarding response actions, under § 763.88(d), the name, signature, State of accreditation of each person making the recommendations, and if applicable, his or her accreditation number.

(6) A detailed description of preventive measures and response actions to be taken, including methods to be used, for any friable ACBM, the locations where such measures and action will be taken, reasons for selecting the response action or preventive measure, and a schedule for beginning and completing each preventive measure and response action.

(7) With respect to the person or persons who inspected for ACBM and who will design or carry out response actions, except for operations and maintenance, with respect to the ACBM, one of the following statements:

(i) If the State has adopted a contractor accreditation program under section 206(b) of Title II of the Act, a statement that the person(s) is accredited under such plan.

(ii) A statement that the local education agency used (or will use) persons who have been accredited by another State which has adopted a contractor accreditation plan under section 206(b) of Title II of the Act or is accredited by an EPA-approved course under section 206(c) of Title II of the Act.

(8) A detailed description in the form of a blueprint, diagram, or in writing of any ACBM or suspected ACBM assumed to be ACM which remains in the school once response actions are undertaken pursuant to § 763.90. This description shall be updated as response actions are completed.

(9) A plan for reinspection under § 763.85, a plan for operations and maintenance activities under § 763.91, and a plan for periodic surveillance under § 763.92, a description of the recommendation made by the management planner regarding additional cleaning under § 763.91(c)(2) as part of an operations and maintenance program, and the response of the local education agency to that recommendation.

(10) A description of steps taken to inform workers and building occupants, or their legal guardians, about inspections, reinspections, response actions, and post-response action activities, including periodic reinspection and surveillance activities that are planned or in progress.

(11) An evaluation of the resources needed to complete response actions successfully and carry out reinspection, operations and maintenance activities, periodic surveillance and training.

(12) With respect to each consultant who contributed to the management plan, the name of the consultant and one of the following statements:

(i) If the State has adopted a contractor accreditation plan under section 206(b) of Title II of the Act, a statement that the consultant is accredited under such plan.

(ii) A statement that the contractor is accredited by another State which has adopted a contractor accreditation plan under section 206(b) of Title II of the Act, or is accredited by an EPA-approved course developed under section 206(c) of Title II of the Act.

(f) A local education agency may require each management plan to contain a statement signed by an accredited management plan developer that such person has prepared or assisted in the preparation of such plan or has reviewed such plan, and that such plan is in compliance with this subpart E. Such statement may not be signed by a person who, in addition to preparing or assisting in preparing the management plan, also implements (or will implement) the management plan.

(g)(1) Upon submission of a management plan to the Governor for review, a local education agency shall

keep a copy of the plan in its administrative office. The management plans shall be available, without cost or restriction, for inspection by representatives of EPA and the State, the public, including teachers, other school personnel and their representatives, and parents. The local education agency may charge a reasonable cost to make copies of management plans.

(2) Each local education agency shall maintain in its administrative office a complete, updated copy of a management plan for each school under its administrative control or direction. The management plans shall be available, during normal business hours, without cost or restriction, for inspection by representatives of EPA and the State, the public, including teachers, other school personnel and their representatives, and parents. The local education agency may charge a reasonable cost to make copies of management plans.

(3) Each school shall maintain in its administrative office a complete, updated copy of the management plan for that school. Management plans shall be available for inspection, without cost or restriction, to workers before work begins in any area of a school building. The school shall make management plans available for inspection to representatives of EPA and the State, the public, including parents, teachers, and other school personnel and their representatives within 5 working days after receiving a request for inspection. The school may charge a reasonable cost to make copies of the management plan.

(4) Upon submission of its management plan to the Governor and at least once each school year, the local education agency shall notify in writing parent, teacher, and employee organizations of the availability of management plans and shall include in the management plan a description of the steps taken to notify such organizations, and a dated copy of the notification. In the absence of any such organizations for parents, teachers, or employees, the local education agency shall provide written notice to that relevant group of the availability of management plans and shall include in the management plan a description of the steps taken to notify such groups, and a dated copy of the notification.

(h) Records required under § 763.94 shall be made by local education agencies and maintained as part of the management plan.

(i) Each management plan must contain a true and correct statement, signed by the individual designated by the local education agency under § 763.84, which certifies that the general, local education agency responsibilities, as stipulated by § 763.84, have been met or will be met.

§ 763.94 Recordkeeping.

(a) Records required under this section shall be maintained in a centralized location in the administrative office of both the school and the local education agency as part of the management plan. For each homogeneous area where all ACBM has been removed, the local education agency shall ensure that such records are retained for 3 years after the next reinspection required under § 763.85(b)(1), or for an equivalent period.

(b) For each preventive measure and response action taken for friable and nonfriable ACBM and friable and nonfriable suspected ACBM assumed to be ACM, the local education agency shall provide:

(1) A detailed written description of the measure or action, including methods used, the location where the measure or action was taken, reasons for selecting the measure or action, start and completion dates of the work, names and addresses of all contractors involved, and if applicable, their State of accreditation, and accreditation numbers, and if ACBM is removed, the name and location of storage or disposal site of the ACM.

(2) The name and signature of any person collecting any air sample required to be collected at the completion of certain response actions specified by § 763.90(i), the locations where samples were collected, date of collection, the name and address of the laboratory analyzing the samples, the date of analysis, the results of the analysis, the method of analysis, the name and signature of the person performing the analysis, and a statement that the laboratory meets the applicable requirements of § 763.90(i)(2)(ii).

(c) For each person required to be trained under § 763.92(a) (1) and (2), the local education agency shall provide the person's name and job title, the date that training was completed by that person, the location of the training, and the number of hours completed in such training.

(d) For each time that periodic surveillance under § 763.92(b) is performed, the local education agency shall record the name of each person performing the surveillance, the date of the surveillance, and any changes in the conditions of the materials.

(e) For each time that cleaning under § 763.91(c) is performed, the local education agency shall record the name of each person performing the cleaning, the date of such cleaning, the locations cleaned, and the methods used to perform such cleaning.

(f) For each time that operations and maintenance activities under § 763.91(d) are performed, the local education agency shall record the name of each person performing the activity, the start and completion dates of the activity, the locations where such activity occurred, a description of the activity including preventive measures used, and if ACBM is removed, the name and location of storage or disposal site of the ACM.

(g) For each time that major asbestos activity under § 763.91(e) is performed, the local education agency shall provide the name and signature, State of accreditation, and if applicable, the accreditation number of each person performing the activity, the start and completion dates of the activity, the locations where such activity occurred, a description of the activity including preventive measures used, and if ACBM is removed, the name and location of storage or disposal site of the ACM.

(h) For each fiber release episode under § 763.91(f), the local education agency shall provide the date and location of the episode, the method of repair, preventive measures or response action taken, the name of each person performing the work, and if ACBM is removed, the name and location of storage or disposal site of the ACM.

(Approved by the Office of Management and Budget under control number 2070–0091)

§ 763.95 Warning labels.

(a) The local education agency shall attach a warning label immediately adjacent to any friable and nonfriable ACBM and suspected ACBM assumed to be ACM located in routine maintenance areas (such as boiler rooms) at each school building. This shall include:

- (1) Friable ACBM that was responded to by a means other than removal.
- (2) ACBM for which no response action was carried out.

(b) All labels shall be prominently displayed in readily visible locations and shall remain posted until the ACBM that is labeled is removed.

(c) The warning label shall read, in print which is readily visible because of large size or bright color, as follows: CAUTION: ASBESTOS. HAZARDOUS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT.

§ 763.97 Compliance and enforcement.

(a) *Compliance with Title II of the Act.*

(1) Section 207(a) of Title II of the Act (15 U.S.C. 2647) makes it unlawful for any local education agency to:

(i) Fail to conduct inspections pursuant to section 203(b) of Title II of the Act, including failure to follow procedures and failure to use accredited personnel and laboratories.

(ii) Knowingly submit false information to the Governor regarding any inspection pursuant to regulations under section 203(i) of Title II of the Act.

(iii) Fail to develop a management plan pursuant to regulations under section 203(i) of Title II of the Act.

(2) Section 207(a) of Title II of the Act (15 U.S.C. 2647) also provides that any local education agency which violates any provision of section 207 shall be liable for a civil penalty of not more than \$5,000 for each day during which the violation continues. For the purposes of this subpart, a “violation” means a failure to comply with respect to a single school building.

(b) Compliance with Title I of the Act.

(1) Section 15(1)(D) of Title I of the Act (15 U.S.C. 2614) makes it unlawful for any person to fail or refuse to comply with any requirement of Title II or any rule promulgated or order issued under Title II. Therefore, any person who violates any requirement of this subpart is in violation of section 15 of Title I of the Act.

(2) Section 15(3) of Title I of the Act (15 U.S.C. 2614) makes it unlawful for any person to fail or refuse to establish or maintain records, submit reports, notices or other information, or permit access to or copying of records, as required by this Act or a rule thereunder.

(3) Section 15(4) (15 U.S.C. 2614) of Title I of the Act makes it unlawful for any person to fail or refuse to permit entry or inspection as required by section 11 of Title I of the Act.

(4) Section 16(a) of Title I of the Act (15 U.S.C. 2615) provides that any person who violates any provision of section 15 of Title I of the Act shall be liable to the United States for a civil penalty in an amount not to exceed \$25,000 for each such violation. Each day such a violation continues shall, for purposes of this paragraph, constitute a separate violation of section 15. A local education agency is not liable for any civil penalty under Title I of the Act for failing or refusing to comply with any rule promulgated or order issued under Title II of the Act.

(c) Criminal penalties. If any violation committed by any person (including a local education agency) is knowing or willful, criminal penalties may be assessed under section 16(b) of Title I of the Act.

(d) Injunctive relief. The Agency may obtain injunctive relief under section 208(b) of Title II of the Act to respond to a hazard which poses an imminent and substantial endangerment to human health or the environment or section 17 (15 U.S.C. 2616) of Title I of the Act to restrain any violation of section 15 of Title I of the Act or to compel the taking of any action required by or under Title I of the Act.

(e) Citizen complaints. Any citizen who wishes to file a complaint pursuant to section 207(d) of Title II of the Act should direct the complaint to the Governor of the State or the EPA Asbestos Ombudsman, 1200 Pennsylvania Ave., NW., Washington, DC 20460. The citizen complaint should be in writing and identified as a citizen complaint pursuant to section 207(d) of Title II of TSCA. The EPA Asbestos Ombudsman or the Governor shall investigate and respond to the complaint within a reasonable period of time if the allegations provide a reasonable basis to believe that a violation of the Act has occurred.

(f) Inspections. EPA may conduct inspections and review management plans under section 11 of Title I of the Act (15 U.S.C. 2610) to ensure compliance.

§ 763.98 Waiver; delegation to State.

(a) General. (1) Upon request from a state Governor and after notice and comment and an opportunity for a public hearing in accordance with paragraphs (b) and (c) of this section, EPA may waive some or all of the requirements of this subpart E if the state has established and is implementing or intends to implement a program of asbestos inspection and management that contains requirements that are at least as stringent as the requirements of this subpart. In addition, if the state chooses to receive electronic documents, the state program must include, at a minimum, the requirements of 40 CFR part 3—(Electronic reporting).

(2) A waiver from any requirement of this subpart E shall apply only to the specific provision for which a waiver has been granted under this section. All requirements of this subpart E shall apply until a waiver is granted under this section.

(b) Request. Each request by a Governor to waive any requirement of this subpart E shall be sent with three complete copies of the request to the Regional Administrator for the EPA Region in which the State is located and shall include:

(1) A copy of the State provisions or proposed provisions relating to its program of asbestos inspection and management in schools for which the request is made.

(2)(i) The name of the State agency that is or will be responsible for administering and enforcing the requirements for which a waiver is requested, the names and job titles of responsible officials in that

agency, and phone numbers where the officials can be contacted.

(ii) In the event that more than one agency is or will be responsible for administering and enforcing the requirements for which a waiver is requested, a description of the functions to be performed by each agency, how the program will be coordinated by the lead agency to ensure consistency and effective administration in the asbestos inspection and management program within the State, the names and job titles of responsible officials in the agencies, and phone numbers where the officials can be contacted. The lead agency will serve as the central contact point for the EPA.

(3) Detailed reasons, supporting papers, and the rationale for concluding that the state's asbestos inspection and management program provisions for which the request is made are at least as stringent as the requirements of Subpart E of this part, and that, if the state chooses to receive electronic documents, the state program includes, at a minimum, the requirements of 40 CFR part 3—(Electronic reporting).

(4) A discussion of any special situations, problems, and needs pertaining to the waiver request accompanied by an explanation of how the State intends to handle them.

(5) A statement of the resources that the State intends to devote to the administration and enforcement of the provisions relating to the waiver request.

(6) Copies of any specific or enabling State laws (enacted and pending enactment) and regulations (promulgated and pending promulgation) relating to the request, including provisions for assessing criminal and/or civil penalties.

(7) Assurance from the Governor, the Attorney General, or the legal counsel of the lead agency that the lead agency or other cooperating agencies have the legal authority necessary to carry out the requirements relating to the request.

(c) General notice—hearing. (1) Within 30 days after receipt of a request for a waiver, EPA will determine the completeness of the request. If EPA does not request further information within the 30-day period, the request will be deemed complete.

(2) Within 30 days after EPA determines that a request is complete, EPA will issue for publication in the FEDERAL REGISTER a notice that announces receipt of the request, describes the information submitted under paragraph (b) of this section, and solicits written comment from interested members of the public. Comments must be submitted within 60 days.

(3) If, during the comment period, EPA receives a written objection to a Governor's request and a request for a public hearing detailing specific objections to the granting of a waiver, EPA will schedule a public hearing to be held in the affected State after the close of the comment period and will announce the public hearing date in the FEDERAL REGISTER before the date of the hearing. Each comment shall include the name and address of the person submitting the comment.

(d) Criteria. EPA may waive some or all of the requirements of subpart E of this part if:

(1) The State's lead agency and other cooperating agencies have the legal authority necessary to carry out the provisions of asbestos inspection and management in schools relating to the waiver request.

(2) The State's program of asbestos inspection and management in schools relating to the waiver request and implementation of the program are or will be at least as stringent as the requirements of this subpart E.

(3) The state has an enforcement mechanism to allow it to implement the program described in the waiver request and any electronic reporting requirements are at least as stringent as 40 CFR part 3—(Electronic reporting).

(4) The lead agency and any cooperating agencies have or will have qualified personnel to carry out the provisions relating to the waiver request.

(5) The State will devote adequate resources to the administration and enforcement of the asbestos inspection and management provisions relating to the waiver request.

(6) When specified by EPA, the State gives satisfactory assurances that necessary steps, including specific actions it proposes to take and a time schedule for their accomplishment, will be taken within a reasonable time to conform with applicable criteria under paragraphs (d) (2) through (4) of this section.

(e) Decision. EPA will issue for publication in the FEDERAL REGISTER a notice announcing its decision to grant or deny, in whole or in part, a Governor's request for a waiver from some or all of the requirements of this subpart E within 30 days after the close of the comment period or within 30 days following a public hearing, whichever is applicable. The notice will include the Agency's reasons and

rationale for granting or denying the Governor's request. The 30-day period may be extended if mutually agreed upon by EPA and the State.

(f) Modifications. When any substantial change is made in the administration or enforcement of a State program for which a waiver was granted under this section, a responsible official in the lead agency shall submit such changes to EPA.

(g) Reports. The lead agency in each State that has been granted a waiver by EPA from any requirement of subpart E of this part shall submit a report to the Regional Administrator for the Region in which the State is located at least once every 12 months to include the following information:

(1) A summary of the State's implementation and enforcement activities during the last reporting period relating to provisions waived under this section, including enforcement actions taken.

(2) Any changes in the administration or enforcement of the State program implemented during the last reporting period.

(3) Other reports as may be required by EPA to carry out effective oversight of any requirement of this subpart E that was waived under this section.

(h) Oversight. EPA may periodically evaluate the adequacy of a State's implementation and enforcement of and resources devoted to carrying out requirements relating to the waiver. This evaluation may include, but is not limited to, site visits to local education agencies without prior notice to the State.

(i) Informal conference. (1) EPA may request that an informal conference be held between appropriate State and EPA officials when EPA has reason to believe that a State has failed to:

(i) Substantially comply with the terms of any provision that was waived under this section.

(ii) Meet the criteria under paragraph (d) of this section, including the failure to carry out enforcement activities or act on violations of the State program.

(2) EPA will:

(i) Specify to the State those aspects of the State's program believed to be inadequate.

(ii) Specify to the State the facts that underlie the belief of inadequacy.

(3) If EPA finds, on the basis of information submitted by the State at the conference, that deficiencies did not exist or were corrected by the State, no further action is required.

(4) Where EPA finds that deficiencies in the State program exist, a plan to correct the deficiencies shall be negotiated between the State and EPA. The plan shall detail the deficiencies found in the State program, specify the steps the State has taken or will take to remedy the deficiencies, and establish a schedule for each remedial action to be initiated.

(j) Rescission. (1) If the State fails to meet with EPA or fails to correct deficiencies raised at the informal conference, EPA will deliver to the Governor of the State and a responsible official in the lead agency a written notice of its intent to rescind, in whole or part, the waiver.

(2) EPA will issue for publication in the FEDERAL REGISTER a notice that announces the rescission of the waiver, describes those aspects of the State's program determined to be inadequate, and specifies the facts that underlie the findings of inadequacy.

[52 FR 41846, Oct. 30, 1987, as amended at 70 FR 59889, Oct. 13, 2005]

§ 763.99 Exclusions.

(a) A local education agency shall not be required to perform an inspection under § 763.85(a) in any sampling area as defined in 40 CFR 763.103 or homogeneous area of a school building where:

(1) An accredited inspector has determined that, based on sampling records, friable ACBM was identified in that homogeneous or sampling area during an inspection conducted before December 14, 1987. The inspector shall sign and date a statement to that effect with his or her State of accreditation and if applicable, accreditation number and, within 30 days after such determination, submit a copy of the statement to the person designated under § 763.84 for inclusion in the management plan. However, an accredited inspector shall assess the friable ACBM under § 763.88.

(2) An accredited inspector has determined that, based on sampling records, nonfriable ACBM was identified in that homogeneous or sampling area during an inspection conducted before December 14, 1987. The inspector shall sign and date a statement to that effect with his or her State of accreditation

and if applicable, accreditation number and, within 30 days after such determination, submit a copy of the statement to the person designated under § 763.84 for inclusion in the management plan. However, an accredited inspector shall identify whether material that was nonfriable has become friable since that previous inspection and shall assess the newly-friable ACBM under § 763.88.

(3) Based on sampling records and inspection records, an accredited inspector has determined that no ACBM is present in the homogeneous or sampling area and the records show that the area was sampled, before December 14, 1987 in substantial compliance with § 763.85(a), which for purposes of this section means in a random manner and with a sufficient number of samples to reasonably ensure that the area is not ACBM.

(i) The accredited inspector shall sign and date a statement, with his or her State of accreditation and if applicable, accreditation number that the homogeneous or sampling area determined not to be ACBM was sampled in substantial compliance with § 763.85(a).

(ii) Within 30 days after the inspector's determination, the local education agency shall submit a copy of the inspector's statement to the EPA Regional Office and shall include the statement in the management plan for that school.

(4) The lead agency responsible for asbestos inspection in a State that has been granted a waiver from § 763.85(a) has determined that, based on sampling records and inspection records, no ACBM is present in the homogeneous or sampling area and the records show that the area was sampled before December 14, 1987, in substantial compliance with § 763.85(a). Such determination shall be included in the management plan for that school.

(5) An accredited inspector has determined that, based on records of an inspection conducted before December 14, 1987, suspected ACBM identified in that homogeneous or sampling area is assumed to be ACM. The inspector shall sign and date a statement to that effect, with his or her State of accreditation and if applicable, accreditation number and, within 30 days of such determination, submit a copy of the statement to the person designated under § 763.84 for inclusion in the management plan. However, an accredited inspector shall identify whether material that was nonfriable suspected ACBM assumed to be ACM has become friable since the previous inspection and shall assess the newly friable material and previously identified friable suspected ACBM assumed to be ACM under § 763.88.

(6) Based on inspection records and contractor and clearance records, an accredited inspector has determined that no ACBM is present in the homogeneous or sampling area where asbestos removal operations have been conducted before December 14, 1987, and shall sign and date a statement to that effect and include his or her State of accreditation and, if applicable, accreditation number. The local education agency shall submit a copy of the statement to the EPA Regional Office and shall include the statement in the management plan for that school.

(7) An architect or project engineer responsible for the construction of a new school building built after October 2, 1988, or an accredited inspector signs a statement that no ACBM was specified as a building material in any construction document for the building, or, to the best of his or her knowledge, no ACBM was used as a building material in the building. The local education agency shall submit a copy of the signed statement of the architect, project engineer, or accredited inspector to the EPA Regional Office and shall include the statement in the management plan for that school.

(b) The exclusion, under paragraphs (a) (1) through (4) of this section, from conducting the inspection under § 763.85(a) shall apply only to homogeneous or sampling areas of a school building that were inspected and sampled before October 17, 1987. The local education agency shall conduct an inspection under § 763.85(a) of all areas inspected before October 17, 1987, that were not sampled or were not assumed to be ACM.

(c) If ACBM is subsequently found in a homogeneous or sampling area of a local education agency that had been identified as receiving an exclusion by an accredited inspector under paragraphs (a) (3), (4), (5) of this section, or an architect, project engineer or accredited inspector under paragraph (a)(7) of this section, the local education agency shall have 180 days following the date of identification of ACBM to comply with this subpart E. (2007 EPA update) (rev.9/20/08 TAI)



CALIFORNIA LAW

California Code of Regulations
Title 8, Section 1529
Asbestos

(q) Certified Asbestos Consultants and Certified Site Surveillance Technicians.

(1) The following definitions are applicable to subsection (q) only:

"Asbestos consultant" means any person who contracts to provide professional health and safety services relating to asbestos-containing construction material as defined in this subsection, which comprises 100 square feet or more of surface area. The activities of an asbestos consultant include building inspection, abatement project design, contract administration, sample collection, preparation of asbestos management plans, clearance monitoring, and supervision of site surveillance technicians as defined in this subsection.

"Asbestos-containing construction material" means any manufactured construction material which contains more than one tenth of 1 percent asbestos by weight.

"Certified asbestos consultant" means any asbestos consultant certified by the Division pursuant to this section.

"Certified site surveillance technician" means any surveillance technician certified by the Division pursuant to the section.

"Division" means the Division of Occupational Safety and Health of the California Department of Industrial Relations.

"Site surveillance technician" means any person who acts as an independent on-site representative of an asbestos consultant. The site surveillance technician monitors the asbestos abatement activities of others, provides asbestos air monitoring services for area and personal samples, and performs building surveys and contract administration at the direction of an asbestos consultant.

"State-of-the-art" means all asbestos abatement and control work procedures currently in use which have been demonstrated to be the most effective, reliable, and protective of workers health. As new procedures are developed which demonstrate greater effectiveness, reliability, and worker protection and thereby come into use, they become state-of-the-art.

(2) Certified Asbestos Consultant Criteria.

To obtain certification, an asbestos consultant must apply to the Division and complete all application requirements specified in Section 341.15. In order to qualify as an asbestos consultant, the applicant must meet all of the following requirements:

(A) Achievement of a passing score as determined by the Division on an examination approved or administered by the Division including, but not limited to, the following subjects:

1. The physical characteristics of asbestos;
2. The health effects of asbestos;
3. The regulatory requirements of the Division, the Federal Occupational Safety and Health Administration, the U.S. Environmental Protection Agency, air quality management districts, and the Department of Health Services, including protective clothing, respiratory protection, exposure limits, personal hygiene, medical monitoring, disposal, and general industry safety hazards;
4. State-of-the-art asbestos abatement and control work procedures;
5. Federal Asbestos Hazard Emergency Response Act training information and procedures for inspectors, management planners, and supervisors, as provided for under Subchapter II (commencing with Section 2641) of Chapter 53 of Title 15 of the United States Code, or the equivalent, as determined by the Division; and
6. Information concerning industrial hygiene sampling methodology, including asbestos sampling and analysis techniques and recordkeeping.

(B) Providing such documentation and other information as the Division shall require to substantiate:

1. The possession of a valid and appropriate federal Asbestos Hazard Emergency Response Act [Subchapter II (commencing with Section 2641) of Chapter 53 of Title 15 of the United States Code] certificate, or its equivalent, as determined by the Division; and
2. Any one of the following combinations of education and experience:
 - A. One year of asbestos-related experience and a bachelor of science degree in engineering, architecture, industrial hygiene, construction management, or a related biological or physical science;
 - B. Two years of asbestos-related experience and a bachelor's degree;
 - C. Three years of asbestos-related experience and an associate of arts degree in engineering, architecture, industrial hygiene, construction management, or a related biological or physical science; or
 - D. Four years of asbestos-related experience and a high school diploma or its equivalent.

(3) Certified Site Surveillance Technician Criteria.

To obtain certification, a site surveillance technician must apply to the Division and complete all application requirements specified in Section 341.15. In order to qualify as a site surveillance technician, the applicant must meet all of the following requirements:

(A) Achievement of a passing score as determined by the Division on an examination approved or administered by the Division including, but not limited to, the following subjects:

1. The physical characteristics of asbestos;
2. The health effects of asbestos;
3. The regulatory requirements of the Division, the Federal Occupational Safety and Health Administration, the U.S. Environmental Protection Agency, air quality management districts, and the Department of Health Services, including protective clothing, respiratory protection, exposure limits, personal hygiene, medical monitoring, disposal, and general industry safety hazards;
4. State-of-the-art asbestos abatement and control work procedures.
5. Information concerning industrial hygiene sampling methodology, including sampling techniques and recordkeeping.

(B) Providing such documentation and other information as the Division shall require to substantiate all of the following:

1. Possession of a valid federal Asbestos Hazard Emergency Response Act [Subchapter II (commencing with Section 2641) of Chapter 53 of Title 15 of the United States Code] certificate for the type of work being performed, or its equivalent, as determined by the Division.
2. Six (6) months of asbestos-related experience under the supervision of an asbestos consultant.
3. Possession of a high school diploma or equivalent.

(4) No employer shall engage the services of an asbestos consultant or site surveillance technician unless that person provides proof of certification by the Division.

Questions on the number of bulk samples

1. For non-friable surfacing, how many samples of each material must be collected to meet NESHAP and OSHA inspections and sampling requirements?

The AHERA protocol would require a minimum of 3 samples. In reference to the sampling section of AHERA, 40 CFR 763.86, paragraph (a) applies to friable surfacing material, (b) applies to TSI, (c) applies to friable miscellaneous material, and (d) applies to non-friable surfacing and non-friable miscellaneous material. In paragraph .86(d), the “manner of sampling” required is “sufficient to determine”, which means, “random is not required”, and the number of samples is plural (by the letter of the law, at least 2). However, the basis of 763.86 is the EPA Pink Book / White Book, which is intended to give us a protocol capable of achieving a 95% confidence level of accuracy. With that in mind, to take less than 3 samples would be negligent in trying to achieve what is intended by the rule. When we see the plural word “samples” in AHERA, we should interpret that as at least 3.

Also, since 2004, we have an ASTM standard for conducting asbestos inspections (E2356-04). According to ASTM protocol, a minimum of 3 samples must be collected and analyzed to prove that a homogeneous area of suspect material is not ACM.

NESHAP, in 40 CFR 61.145(a), merely requires that “all” asbestos be identified, categorized and quantified. By EPA interpretive letter, if all ACM has not been identified, then a “thorough inspection” has not been conducted.

OSHA, in 29 CFR 1926.1101(k)(1), requires that “due diligence” be addressed in identifying any ACM that could cause employee exposure. If asbestos exposure occurs to any employee, then “due diligence” has not been accomplished, and the owner (primarily) is responsible. This is actually more stringent than (k)(5)(ii), which references AHERA. What we would call non-friable surfacing is not surfacing to OSHA, therefore not PACM. Because of that, we could not say that OSHA requires AHERA protocol in sampling the materials asked about.

In light of all this, the AHERA protocol, as described above, is the only regulatory protocol that would give defense to the NESHAP and OSHA requirements. As far as the “3-5-7” rule for bulk sampling, that only applies to friable surfacing, not to non-friable. It is not “wrong” to take more than the AHERA minimum samples for non-friable surfacing, it is simply not required by the regulation.

2. A typical interior wall – drywall with an applied texture, would that be friable or non-friable?

I assume you are asking the question in light of AHERA, and the sampling protocol in .86. The drywall texture would be typically non-friable. The AHERA regulation is not about demolition or

renovation, but about safely using an occupied building in the presence of identified ACBM. Therefore, the word “friable” in AHERA has to do with the current condition of suspect material in an occupied building, not the condition that it might be rendered into because of demolition or renovation. Even if you had the situation of damage to the drywall texture in a functional space, the homogeneous area of drywall texture would be non-friable, and would be sampled under .86(d). We would not sample it more because of the damage. The damage would not increase or decrease the asbestos content.

3. Exterior plaster/stucco walls, friable or non-friable?

They are typically non-friable (cementitious). NESHAP does not address bulk sampling. NESHAP merely requires that all ACM be identified. Again, the demolition activity that may cause the stucco to become friable has nothing to do with the AHERA sampling protocol. The material is either ACM, or it is not. If you were going to apply the AHERA sampling protocol to cementitious stucco, then the application would be to .86(d).



Building Owner sues IH Consultant over PLM Floor Tile Analysis

If you think a floor tile analysis by PLM is always adequate, you had better check your liability insurance!!

By Michael E. Beard, Consultant, Raleigh, NC

Recently, I had a call from an industrial hygiene consultant who is facing a lawsuit over the analysis of floor tiles by polarized light microscopy (PLM). He specializes in asbestos inspections and operations and maintenance (O&M) plan development. In 1990 he conducted a building survey for a client in which he collected samples of suspected asbestos-containing material (AC). His samples included floor tiles which he sent to a National Voluntary Laboratory Accreditation Program (NVLAP) accredited lab for PLM analysis. The results came back negative. The building owner developed a management plan based on these results. The consultant collected a fee of \$1000 for his services.

Prior to renovations in 1999, a renovation contractor for the building owner collected additional samples of floor tiles from this building and had them analyzed by transmission electron microscopy (TEM). The TEM results showed the floor tiles to contain about 15% asbestos and thus, to be ACM. The original PLM analysis failed to detect asbestos in the floor tiles. The building owner is now suing the consultant for the cost of abatement of the floor tiles which is estimated to be between \$85,000 and \$90,000. The consultant followed all EPA requirements in conducting his survey. He is an accredited inspector who used an accredited lab and followed all the EPA regulations. Yet, he may now be liable for damages amounting to \$85-\$90K.

Why did the original analysis of the floor tiles by PLM fail to detect the asbestos found by the later TEM analysis? Many floor tiles have finely ground asbestos fibers which may not be visible by PLM. Also, these flooring materials have a matrix which makes the fibers difficult to see even when they are large enough to be visible by PLM. These floor coverings contain an organic vinyl or asphaltic binder, an inorganic carbonate filler and pigments containing fine titanium dioxide particles. These matrix materials make the detection of the asbestos literally like finding a needle in a haystack.

There are procedures available for removing the matrix materials, thus making the asbestos easier to detect. Some investigators have used organic solvents to remove the vinyl and asphaltic materials from the tile. However, this process leaves behind the inorganic phase of the matrix. A more widely used procedure for matrix removal is that of ashing and acid washing to remove the organic and inorganic phases of the matrix, respectively. A portion of the sample is selected, weighed and the ashing and acid washing treatments are performed. The final residue is dried and weighed to determine the weight loss. Eighty percent or more of the flooring material is often removed following this process. The ashing is conducted at a temperature slightly below 500 degrees Celsius to prevent damage to the asbestos fibers. The acid washing removes the carbonate filler but, unfortunately, does not remove the titanium dioxide particles.

In some samples, the asbestos fibers are large enough to be detected by PLM following these matrix reduction procedures. This matrix reduction concentrates the asbestos into a residue and makes detection and quantification of asbestos an easier task for the analyst. When the titanium dioxide is present, however, these fine particles coat the asbestos fibers and make them nearly impossible to identify by PLM. The preparation procedure for the TEM analysis

helps to separate the titanium dioxide from the fibers so that the fibers can more easily be detected. Also, fine fibers which are not detectable by PLM can be easily detected by the TEM.

These matrix reduction steps are not new to the analysis of asbestos in floor coverings. The 1982 EPA "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (as found in 40 CFR Part 763 Appendix E to Subpart E) was developed primarily for the analysis of insulation materials, as the title specifies. The Interim Method briefly mentions the use of ashing and acid washing for matrix removal. The method also reminds analysts to correct the analytical result for any weight loss during this procedure. However, a detailed description of these procedures is lacking. In 1988 Dr. Eric Chatfield provided to American Society for Testing and Materials (ASTM) Committee D 22 a procedure which provided the detailed procedures for accomplishing these steps. The procedure is commonly known as "The Chatfield Method," although it has never been formally published. This procedure was incorporated into a section titled "Gravimetry" in the 1993 EPA "Method for Determination of Asbestos in Bulk Building Materials," EPA/600/R-93/116. EPA has recommended that the 1993 method be used as "...a preferred substitute..." to the Interim Method (Federal Register, Volume 59, Number 146, August 1, 1994, page 38970).

The State of New York Environmental Laboratory Approval Program (ELAP) currently requires the following disclaimer on all analyses of non-friable organically bound materials (NOBs) analyzed by PLM:

"Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing."

The State of New York program also states in its TEM method that:

"...NOBs must be analyzed by one of the gravimetric matrix reduction methods, either the PLM method (ELAP Item 198.1) or the TEM method described herein. This TEM method is the ONLY method that can be used to report true negative results from NOB samples to clients."

The State of New York reported at EIA '99 that NOB proficiency testing materials were successfully analyzed by all participants in its quality assurance (QA) program who used TEM. Test results were also reported at EIA '99 from the NVLAP program, which supports the EPA asbestos programs. NVLAP found error rates as high as 40% for floor tiles in its program. These results may be optimum because the labs are believed to take more care in analyzing proficiency test materials than for routine samples. Some labs may also resort to TEM to confirm the analysis by the PLM method.

Why doesn't everyone request the use of the improved methods for analysis of floor coverings? These matrix reduction steps take time for the laboratory to conduct. Additionally, the cost of the TEM analysis is significantly more than the cost of analysis by PLM. An informal survey by EPA in 1996 showed the average cost for the TEM analysis to be about \$100. In the competitive world of asbestos management, most clients are reluctant to spend the additional cost for the TEM analysis. However, making a decision based on inadequate data can be more expensive than the cost of additional analyses. Consultants should consider the overall cost of the abatement or management of asbestos programs when justifying the cost of the analysis.

The consultant who is now being sued by the building owner is painfully aware of the ultimate cost of cheaper but inadequate data.

Then why doesn't EPA require the use of the 1993 method for floor covering analysis? EPA has recommended, but has not required, the use of the 1993 method for floor tiles. The current climate in the Congress has made EPA reluctant to require any new regulations which would add to the cost of asbestos management. This policy has made our regulators begin to look like an HMO for the environment.

Building owners should be aware of the shortcomings of the cheaper PLM analysis for floor tiles. Consultants should convince their clients that the cost of the TEM analysis is well spent and will prevent future problems. If they cannot convince the building owner to use the proper analytical method, they should for their own protection attach a disclaimer to their recommendations citing the shortcomings of the analysis of floor coverings by PLM.

**ANALYTICAL CONSIDERATIONS FOR DETERMINATION OF
LOW ASBESTOS CONCENTRATIONS IN BULK SAMPLES,
INCLUDING VERMICULITE-CONTAINING PRODUCTS**

Presented by

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ABSTRACT

When the concentration of asbestos in bulk samples is below approximately 10%, the reported asbestos concentration obtained by routine polarized light microscopy (PLM) examinations is frequently significantly in error. This is particularly the case when asbestos concentrations are close to or below 1%, a range in which routine PLM estimates of concentration have been demonstrated to be little better than guesswork. The primary purpose of analyses of bulk samples is to determine whether the asbestos concentration is higher than or lower than legislated control limits of 1%, or 0.1%, depending on the expenditures, such as abatement, for determining the precautions that must be taken during abatement, or for consideration in industrial use of a product. In reality, the PLM method alone is known to be incapable of quantifying asbestos in this concentration range. Gravimetric methods, combined with optical and electron microscopy, allow low concentrations of asbestos to be accurately quantified when present in difficult matrices such as plasters or products containing vermiculite. Consistent results are produced which allow confident decisions to be made about abatement requirements, waste disposal, and industrial use of mineral products. These quantitative methods have also found application in disputing or supporting product identification in personal injury litigation.

OSHA explains why they do not require an inspection for asbestos

OSHA Interpretive Letter

Asbestos inspections

June 12, 2009

Mr. F. Stephen Masek
Masek Consulting Services, Inc.
23478 Sandstone St.
Mission Viejo, CA 92692

Dear Mr. Masek:

Thank you for your letter, May 4, 2009, to the Occupational Safety and Health Administration (OSHA). Your letter was referred to OSHA's Directorate of Enforcement Programs for a reply to your questions on OSHA's Asbestos Standards. This reply letter constitutes OSHA's interpretation only of the requirements discussed and may not be applicable to any question not detailed in your original correspondence. Your paraphrased question and our reply are below.

Question: You asked why doesn't the U.S. Environmental Protection Agency (EPA) and OSHA (for worker protection) require that new comprehensive asbestos building surveys, including sampling of exterior building materials and more thorough sampling of non-friable materials, be performed on all of the K-12 schools covered by the Asbestos Hazard Emergency Response Act of 1986 (AHERA)?

Reply: Please note that the Occupational Safety and Health Act of 1970 (the OSH Act) deals with the protection of **employees**, not the general public, so we cannot address your suggested changes to AHERA, or changes to the EPA's AHERA regulations at 40 CFR Part 763. However, the OSHA Asbestos Standards, 29 CFR 1910.1001, 29 CFR 1926.1101, and 29 CFR 1915.1001, do **not** require a comprehensive building survey for asbestos. OSHA's Final Rule for Occupational Exposure to Asbestos, 59 *FR* 40964-41162, August 10, 1994, addressed the question of comprehensive building/facility/vessel surveys for asbestos, such as those required by the AHERA regulations, and OSHA stated the following:

Another option OSHA considered was requiring a comprehensive AHERA-type (EPA's schools rule) building/facility inspection. AHERA (Asbestos Hazard Emergency Response Act, 40 CFR 735) requires that all school buildings be visually inspected for asbestos-containing building materials (ACBM) by an EPA-accredited inspector and that inventory of the locations of these materials be maintained...

Although there was substantial support for a comprehensive inspection requirement, OSHA believes that the regulatory approach in these [OSHA's] final standards will achieve equivalent or superior protection to exposed workers at much reduced cost. The reasons are as follows. A comprehensive wall-to-wall inspection requirement is found to be unnecessary to protect employees against risks of exposure from asbestos-containing building material of which they are unaware. Such an inspection requirement would be very costly, may be overly broad, the results may not be correct or timely, would not necessarily focus on potential sources of asbestos exposure which present significant risks to employees, and its great expense may divert resources from active protection of workers who actually disturb asbestos. [59 *FR* 41015]

As you also pointed out in your letter, such "comprehensive" surveys are often incomplete and inaccurate. Instead of requiring building owners and/or employers to perform a comprehensive building survey for installed asbestos, OSHA designed its Asbestos Standards with a simpler approach, called the "presumptive rule." Under this rule, the standards require building owners and employers to presumptively identify certain widely prevalent and more risky building materials. These are thermal system insulation and sprayed-on and troweled-on surfacing materials installed in buildings built no later than 1980. Such materials may be easily recognized without any technical training. These materials are termed "presumed asbestos containing materials" (PACM) and are to be treated as asbestos-containing for all purposes of the standards. Additionally, the OSHA standards allow building/facility/vessel owners and employers to rebut these presumptions through bulk sampling, such as may be performed during an AHERA survey. For a complete discussion of this issue, please review the Final Rule, which we cited above.

Thank you for your interest in occupational safety and health. We hope you find this information helpful. OSHA requirements are set by statute, standards, and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>. If you have any further questions, please feel free to contact the Office of Health Enforcement at 202-693-2190.

Sincerely,

Richard E. Fairfax, Director
Directorate of Enforcement Programs

OSHA explains due diligence and the 1980 date

August 20, 1997

Mr. William H. George
Industrial Hygiene Manager
Target Environmental Department
33 South Sixth Street
Minneapolis, Minnesota 55402

Dear Mr. George:

This is in response to your letter of May 1, as well as to similar letters you have written to several Regional Offices of the Occupational Safety and Health Administration (OSHA), concerning asbestos surveying and sampling associated with the remodeling, renovation, and demolition of buildings.

You requested OSHA's point on the presence of asbestos in buildings constructed after 1980. OSHA has concluded that asbestos-containing thermal system insulation (TSI) and asbestos-containing surfacing material (SM) are not prevalent enough in buildings constructed after 1980 to require building owners to presume that the materials are asbestos-containing. However, asbestos may still be present in some of these buildings. Accordingly, building owners must exercise due diligence in regard to identifying the presence of asbestos in thermal system insulation, surfacing material, vinyl flooring material, ceiling tile, joint compound, and other materials installed in buildings constructed after 1980.

You stated that you would like assurance that your company can rely on records, not sampling, for evaluating the buildings constructed after 1980 for the presence of installed asbestos containing material prior to renovation or demolition. OSHA cannot offer you reassurance that you can always rely on records for evaluating the buildings constructed after 1980 for the presence of asbestos. On some occasions, the records may be accurate and complete and you may rely on them, while in other occasions, the records may be inaccurate and incomplete and you may not rely on them. As indicated above, your company must exercise due diligence in regard to identifying asbestos-containing material installed in buildings. If the records are not reliable and there is good cause to believe that a given material may contain asbestos, your company must treat the material as if it contains asbestos, or show by laboratory analysis, that asbestos is not present.

We appreciate the opportunity to clarify this matter for you. If you have further questions, please contact the [O]ffice of Health Compliance Assistance in this Directorate at (202) 219-8036.

Sincerely,

John B. Miles, Jr., Director
Directorate of Compliance Programs

EPA NESHAP requires inspection of new buildings before demolition or renovation

U.S. EPA
Asbestos NESHAP Program

Subject : Need for property inspections in newer buildings

December 18, 2006

To: State and Local Asbestos NESHAP coordinators

It has come to my attention that many sources are claiming newer properties, (often properties built after 1980), are exempt from the inspection and notification requirements of the Asbestos NESHAP. The Asbestos NESHAP requires all regulated facilities to be inspected prior to the start of demolition or renovation. The requirement to inspect must be met regardless of the age of the building. The Asbestos NESHAP also requires inspection for all friable and non-friable materials.

Since non-friable materials may still be used in new construction, they may be present in structures built after 1980. In demolitions, all non-friable materials must be listed on the notification form to be in compliance with the Asbestos NESHAP. In addition, many mechanical removal techniques will render the non-friable materials regulated. It is certainly possible to violate both notification and work practice requirements of the Asbestos NESHAP in structures built after 1980.

In conclusion, there have been no changes to EPA determinations on the applicability of the Asbestos NESHAP to newer structures. Earlier determinations have stated that inspections, notifications, and when applicable, removal of RACM must be conducted to be in compliance with the Asbestos NESHAP regardless of the age of the structure. These requirements are still in effect.

Robert Trotter, US EPA, Region 9
Asbestos NESHAP Coordinator

EPA NESHAP requires inspection of every (each) building to be demolished or renovated

November 15, 2007

Glenn W. Montague
Director of Operations
H. M. Pitt Labs, Inc.
2434 Southport Way, Suite L
National City, CA 95812

Dear Mr. Montague:

Your letter of October 22, 2007 to A.J. Najjar of the California Air Resources Board regarding sampling and survey requirements of the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) has been referred to EPA for a determination.

Your proposed sampling method for the privatization of 1202 housing units at Beale Air Force Base is to perform representative sampling of 20-25% of the units. EPA Region 9 has addressed this issue in a 2006 clarification to state and local Asbestos NESHAP coordinators. I have enclosed this clarification for your information. The clarification states, "the Asbestos NESHAP requires that 'prior to the commencement of the demolition or renovation thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos'. AHERA protocols require the inspection of every structure. It has been our experience at large military housing areas that there is no standard construction used in the homes and that most homes are unique separate facilities with different building materials. Add ons and repairs have often resulted in some houses having regulated asbestos containing materials while others have none or different asbestos containing material. In order to thoroughly inspect the facility it is recommended that each structure should be surveyed and sampled to insure all asbestos containing material is found." The sampling of 20-25% of the Beale housing units would not meet Asbestos NESHAP requirements to thoroughly inspect prior to renovation or demolition.

In response to your plan to use gravimetric point counting to verify asbestos contents under 1%, EPA has determined the 1000 point count method of analysis will comply with the Asbestos NESHAP. EPA had also determined that all samples with trace or above asbestos content must be point counted to be considered non-regulated.

EPA and our delegated agencies have inspected military housing at Beale, as well as other military bases undergoing base housing conversion, and have found improper characterization of asbestos containing material. We have found materials such as wallboard skimcoats (surfacing), and stucco improperly analyzed utilizing composite sampling; materials classified as non friable and non regulated when actually regulated under the NESHAP, such as linoleum backing, stucco, and wallboard skimcoats; and improper mathematical averaging of multiple samples. Violations of the Asbestos NESHAP can result in fines of up to \$32,500 per day per violation and/or criminal prosecution.

I appreciate the opportunity to work with you, the Beale Environmental staff, and CARB to meet compliance of the Asbestos NESHAP during the privatization of the housing units. If you have any questions on the Asbestos NESHAP, please feel to contact me at (415)972-3989

Sincerely,

Robert S. Trotter
Enforcement Officer
Asbestos NESHAP Coordinator

Sampling of burned building debris under NESHAP

Control Number: A930019

Category: Asbestos
EPA Office: SSCD
Date: 01/14/1993
Title: **Questions Concerning Building Demolition**
Recipient: Dufour, James T.
Author: Rasnic, John B.
Comments:

Abstract:

CONTROL #A930019

Ten specific questions pertaining to the Asbestos NESHAP and building demolition are answered. Questions nine and ten deal with **burning** a structure that contained nonfriable ACM and any testing procedures to determine whether burned debris contained hazardous ACM.

Question 9: "Would burning of a structure that contained non-friable ACM (transite, window putty, and joint compound) result in all of the debris being considered as friable asbestos hazardous waste, under current or 8/89-10/11/90 policy?"

Response 9: Under current policy or the policy for the period of 8/89-10/11/90, if any of the non-friable ACM was not removed prior to the burning, then the debris is/was considered ACWM and therefore, regulated by the rule. If a facility containing asbestos greater than or equal to the threshold was demolished by intentional burning without removing all RACM including Category I and Category II non-friable ACM, then that is a violation of 40 CFR 61.145(c)(10).

Question 10: "Would the Agency accept any testing procedures to determine whether burned debris contains hazardous ACM?"

Response 10: If the structure is known to contain ACM prior to the burning, then the burned debris will be contaminated with RACM. Therefore, an alternative testing procedure will not be accepted by EPA. The rule clearly states that all RACM including Category I and II be removed before burning. In cases where that was not possible, it is also clear that the debris must be removed in accordance with 61.150(a)(3). The rule does not provide for any alternatives.

This determination has been coordinated with EPA's Office of Enforcement and the Emission Standards Division of the Office of Air Quality Planning and Standards. If you have any questions, please contact Chris Oh of my staff at (703) 308-8732.

Sincerely,

John B. Rasnic, Director

Stationary Source Compliance Division Office of Air Quality Planning and Standards



Rounding of the quantitative result of analysis between 1% and 2 %
U.S. Environmental Protection Agency
Applicability Determination Index

Control Number: A070006

Category:	Asbestos
EPA Office:	CAMPD
Date:	01/31/2007
Title:	Rounding Reported Values
Recipient:	Zlatic, Michael
Author:	Alushin, Michael
Comments:	

Abstract:

Q: Could EPA clarify to the Saint Louis County Health Department in Missouri how best to interpret the following phrase in 40 CFR part 63, subpart E: "the value reported should be rounded to the nearest percent", in connection with point counting results to determine the percentage of asbestos as between 1.0 percent and 1.5 percent and defining Category I and Category II nonfriable asbestos-containing material (ACM)?

A: EPA explains that when a bulk sample is analyzed using Polarized Light Microscopy, and further quantified using the point counting method/formula in 40 CFR Part 763, Subpart E, Appendix E, Section 1.7.2.4, sample results are allowed to be rounded to the nearest percent. EPA interprets the rounding of results using the formula in Section 1.7.2.4 as, if the sample result yields $a=4$, "a" being the number of asbestos counts, the result is 1 percent, which does not meet the regulatory threshold of greater than 1 percent. If the sample result yields $a=5$, the result is 1.25 percent asbestos, which may be rounded down to 1 percent, which is not greater than 1 percent and

therefore not regulated. If the sample result yields a=6, the result is 1.5 percent asbestos, which would be rounded to 2 percent and therefore regulated.

Letter:

January 31, 2007

Mr. Michael A. Zlatic, P.E. Chief Environmental Engineer
Saint Louis County Health Department Division of Environmental Protection
111 South Meramec Avenue
St. Louis, MO 63105

Dear Mr. Zlatic:

This responds to your letter of May 22, 2006 in which you request an EPA determination that addresses how the following sentence found in 40 CFR Part 763, Subpart E, Appendix E, section 1.7.2.4 should be implemented: "The value reported should be rounded to the nearest percent." You specifically ask how this sentence should be interpreted in connection with point counting results placing the percentage of asbestos as between 1.0% and 1.5% because the asbestos NESHAP specifically defines Category I and Category II nonfriable asbestos-containing material (ACM), in relevant part, as "containing more than 1 percent asbestos as determined using the methods specified in Appendix E, Subpart E, 40 CFR Part 763, section 1, Polarized Light Microscopy,:

The sentence at issue first appeared in EPA's regulations in 1982. On May 27th of that year, EPA promulgated a Final Rule entitled Friable Asbestos-Containing Materials in Schools; Proposed Identification and Notification (47 FR 23360). In that final rule, EPA took a document originally entitled Interim Method for the Determination of Asbestiform Minerals in Bulk Insulation Samples, which had been referenced in EPA's proposed rule, and made it an appendix (specifically, Appendix A - Interim Method of the Determination of Asbestos in Bulk Insulation Samples) to the final regulatory text.

Subsequently, when these regulations were amended in 1987, becoming EPA's current Asbestos-Containing Materials in Schools regulations (40 CFR Part 763, Subpart E), what was formerly Appendix A became, with some modification, Appendix E. The sentence at issue previously was found in Appendix A and is included in the current Appendix E, Subpart E.

In responding to your inquiry, my staff researched previous Federal Register Notices, Agency guidance documents, and files from Docket # OPTS 61004B; TSH-FRL 2064-3 (the docket for the Agency's 1982 Final Rule promulgating the Friable Asbestos-Containing Materials in Schools regulations). They did not locate any specific reference in these materials discussing the sentence in Section 1.7.2.4. However, there are discussions in several documents in this docket regarding the variability of sample results analyzed by different laboratories. Based on results of sampling analysis by commercial and non-commercial laboratories, the Agency determined that the technical capability of the microscopist was crucial for proper sample analysis. In order to improve the sample analysis results by the microscopist, the Agency developed the previously mentioned document entitled Interim Method for the Determination of Asbestiform Minerals in Bulk Insulation Samples. In addition, the Agency worked with the Department of Commerce to develop a laboratory accreditation program to ensure accurate sample analysis.

Based on our research, it is EPA's position that when a bulk sample is analyzed using Polarized Light Microscopy, and further quantified using the point counting method, 40 CFR Part 763, Subpart E, Appendix E, section 1.7.2.4 (specifically, the sentence for which you are seeking clarification) allows for the rounding of such results to the nearest percent. For example, if the percent asbestos is calculated for a sample using the formula set forth in Section 1.7.2.4 - i.e., $\% \text{ asbestos} = (a/n) 100\%$, where a =number of asbestos counts and n =number of nonempty points counted (400) -- and the sample result yields $a=4$, the result is 1% asbestos, which does not meet the greater than 1% asbestos regulatory threshold for ACM. If a sample result yields $a=5$, the result is 1.25% asbestos. In this case, section 1.7.2.4 of Appendix E allows rounding of the result to 1%. Accordingly, if rounded, this result does not meet the greater than 1% regulatory threshold for ACM. If the sample result yields $a=6$, the result is 1.5% asbestos. In rounding this sample result to the nearest percent, the result is 2% asbestos. This sample result is greater than 1% and therefore the tested material qualifies as ACM.

The Office of Civil Enforcement, the Office of Air Quality Planning and Standards, the Office of Prevention, Pesticides and Toxic Substances and the Office of General Counsel have reviewed this determination.

Very truly yours,

Michael S. Alushin
Compliance Assessment and Media Programs Division Office of Compliance

Airport Taxiways are facility components and must be inspected before removal

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

APR 06 2016

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

Kyra L. Moore
Director
Division of Environmental Quality
Missouri Department of Natural
Resources
P.O. Box 176
Jefferson City, MO

65102 Dear Ms. Moore:

I am responding to your September 2, 2015, letter where the Missouri Department of Natural Resources requests the United States Environmental Protection Agency (EPA) to reconsider a Region V June 20, 1997 applicability determination (A970006). Clean Air Act applicability determinations can be found at cfpub.epa.gov/adj. The determination stated that airport taxiways are not subject to the applicability standard of the asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 C.F.R. Part 61, Subpart M. The Region V determination was based upon a finding that a taxiway is not considered a "facility" or "facility component", and is not a "structure, installation or building." In reconsideration of the June 20, 1997 determination, we have concluded that Region V did not correctly apply the asbestos NESHAP regulation. Our rationale for why we conclude that taxiways are potentially subject to the asbestos NESHAP regulation is provided below.

Facility components are broadly defined as "any part of a facility including equipment." An airport is included within the definition of a "facility." In addition, taxiways are an integral part of an airport as they are critical to the functioning of an airport. As such, taxiways would be considered a facility component. See definitions of "facility" and "facility component" at 40 C.F.R. §61.141.

¹ " Facility means any institutional, commercial, public , industrial, or residential structure , installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative , but excluding residential buildings having four or fewer dwelling units) ; any ship; and any active or inactive waste disposal site. For purposes of this definition, any building , structure , or installation that contains a loft used as a dwelling is not considered a residential structure , installation, or building. Any structure, installation or building that was previously subject to this subpart is not excluded , regardless of its current use or function." 40 C.F.R. §61.141.

The Background Information Document² to the 1990 Asbestos NESHAP amendments highlights EPA's position at the time about excluding certain structures from the definition of "facility." (See Section 4.8 -Facility).

Comment 1. Commenter 4 requests that the definition of "facility" include the accidental accumulation of asbestos debris resulting from weathering or other deterioration, and exclude certain structures known to contain no asbestos, e.g., bridges , dams, foundations, and motors .

Response: 1. Facilities containing asbestos that has fallen off facility components or accumulated otherwise are covered by the standard. The owners/operators of such facilities are subject to the NESHAP any time that they remove any friable asbestos, in amounts above the threshold, from the facility. **Regarding the commenter's recommendation to exclude certain structures known to contain no asbestos, it is not clear that in some instances such structures, or associated structures, would not contain asbestos. The EPA believes that it is prudent not to exclude such structures.** (Emphasis added.)

Since EPA has no definitive list of what structures did or did not contain asbestos, as the 1990 Background Information Document states, it is prudent not to exclude such structures, including taxiways.³

Section 61.145 of the asbestos NESHAP regulates demolition and renovation operations. Demolition is defined by section 61.141 as:

the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

Renovation is defined by section 61.141 as:

altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.

While the definitions of demolition and renovation provide that all operations in which load- supporting structural members are taken out would qualify as demolitions, a renovation operation does not require the presence or removal of load-supporting structural members.

EPA has previously identified other structures that undergo alterations (e.g., maintenance or

² EPA Publication - National Emission Standards for Asbestos Background Information for Promulgated Asbestos NESHAP Revisions. EPA-450 /3-90-01 7, October, 199 0.

³ The June 20, 1997 applicability determination that is now being reconsidered (A970006) acknowledged that the airport taxiway at issue was known to contain around four percent chrysotile asbestos.

removal of facility components) without necessitating the wrecking of a load-bearing structure, such that the operations have been considered renovations rather than demolitions under the asbestos NESHAP regulations. Pipelines are an example. When a pipeline is being removed or undergoing maintenance, it is important to note that EPA has previously considered the operation as a renovation under the asbestos NESHAP regulation.⁴ In our experience, a pipeline does not contain a load-supporting structural member.

We reviewed the Federal Aviation Administration's Airport Construction Standards (AC 150/5370-10). An airport runway /taxiway is constructed of various layers of aggregate, sand, and clay, covered with a final surface that can be concrete, Portland cement, asphalt or a bituminous coat. While load-bearing structures could conceivably be incorporated into a runway/taxiway as part of its design or function, the FAA Airport Construction Standards show no requirements for load-bearing structures to be incorporated into the runway/taxiway.

Based upon the above, repair operations on a runway /taxiway could be considered a renovation operation, depending on the fact-specific circumstances. If regulated as a renovation operation, the airport and/or its contractor must complete a thorough inspection of that portion of the runway/taxiway where repair work is to take place. If more than the threshold amount of regulated asbestos-containing material⁵ is to be disturbed during the renovation operation, then the owner and/or operator must comply with the notification requirements in section 61.141(b), work-practice standards in section 61.141(c), the management and transport standards in section 61.150, and the disposal requirements of section 61.154 of the asbestos NESHAP.

This response has been drafted in consultation with the EPA Office of General Counsel, Office of Air Quality Planning and Standards, and the Office of Civil Enforcement. EPA does not consider this response to be a final Agency action in request to a source's request for rule applicability.

Sincerely,



Edward J. Messina, Director
Monitoring, Assistance, and Media Programs Division
Office of Compliance

Sampling Concrete Structures

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, DC 20460

MAR 10 2016

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

Mr. Mike Fletcher
Kansas Department of Transportation
Environmental Services Section
Dwight D. Eisenhower State Office Building
700 S.W. Harrison Street
Topeka, KS 66603-3745

Dear Mr. Fletcher:

I am responding to your September 11, 2015, email in which the Kansas Department of Transportation (KDOT) requests the U.S. Environmental Protection Agency (US EPA) grant a waiver from asbestos testing requirements for bare concrete deck bridges that do not involve an asphaltic bridge deck weathering surface or waterproof membrane. As discussed below, the US EPA denies the waiver request.

The waiver KDOT seeks would be from the Asbestos NESHAP regulations regarding the thorough inspection requirement outlined in 40 C.F.R. Section 61.145(a) of the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP).

The US EPA classifies asbestos as a known human carcinogen. There is no level of asbestos exposure that is known to be safe. Asbestos causes a number of health effects including mesothelioma, lung cancer, asbestosis, and pulmonary abnormalities such as pleural thickening and reduced lung function. These health effects may not be seen for 15 or more years due to the latency of disease development. Due to its toxicity and prevalence in commercial products, US EPA has regulated asbestos since 1973 under the Asbestos NESHAP, which was last amended in 1990.

Under section 61.145 of the Asbestos NESHAP, the owner and/or operator of a facility is required to conduct a thorough inspection prior to any demolition or renovation operation.¹ The thorough inspection applies to either the whole building/structure or is limited to that part of the building/structure undergoing the renovation or demolition. The KDOT inquiry raises the issue of whether bridges are a facility under the asbestos NESHAP.

¹ Note that there is a distinct standard for construction or maintenance of roadways under section 61.143 of the Asbestos NESHAP.

Section 61.141 defines a facility as:

any institutional, commercial, public, industrial, or residential structure, installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative, but excluding residential buildings having four or fewer dwelling units); any ship; and any active or inactive waste disposal site. For purposes of this definition, any building, structure, or installation that contains a loft used as a dwelling is not considered a residential structure, installation, or building. Any structure, installation or building that was previously subject to this subpart is not excluded, regardless of its current use or function.

The Background Information Document² to the 1990 Asbestos NESHAP amendments highlights US EPA's position at that time about excluding certain structures from the definition of facility. (See Section 4.8 - Facility).

Comment 1. Commenter 4 requests that the definition of "facility" include the accidental accumulation of asbestos debris resulting from weathering or other deterioration, and exclude certain structures known to contain no asbestos, e.g., **bridges**, dams, foundations, and motors.

Response: 1. Facilities containing asbestos that has fallen off facility components or accumulated otherwise are covered by the standard. The owners/operators of such facilities are subject to the NESHAP any time that they remove any friable asbestos, in amounts above the threshold, from the facility.

Regarding the commenter's recommendation to exclude certain structures known to contain no asbestos, it is not clear that in some instances such structures, or associated structures, would not contain asbestos. The EPA believes that it is prudent not to exclude such structures. (Emphasis added.)

As indicated above in the 1990 Background Document, The US EPA considers bridges to be structures that may fit within the definition of "facility". Since US EPA has no definitive list of what structures never contained asbestos, as the Document states, it is prudent not to exclude such structures.

A thorough inspection would include all suspect materials that are part of the structure. As identified in your September 11, 2015 email, the inspection would include such items as

² EPA Publication - National Emission Standards for Asbestos Background Information for Promulgated Asbestos NESHAP Revisions. EPA-450 /3-90-017, October, 1990.

concrete, the asphaltic bridge deck weathering surface, waterproofing membrane, bearing pads or other suspect asbestos containing material. Since concrete is a suspect material, it would be prudent for the KDOT to take a sufficient number of samples to determine whether the concrete is asbestos-containing material, as part of a thorough inspection of the bridge.

Therefore, the US EPA denies the request to grant a waiver from the inspection requirement of the Asbestos NESHAP (40 C.F.R 61.145). There are no regulatory provisions allowing the US EPA Administrator to waive the thorough inspection requirement under any circumstance.

However, there are provisions that allow an owner/operator to petition the Administrator to consider giving prior written approval of an alternative work practice or alternative management of asbestos waste.

This response has been drafted in consultation with the EPA Office of General Counsel, Office of Air Quality Planning and Standards, and the Office of Civil Enforcement. EPA does not consider this response to be a final Agency action in request to a source's request for rule applicability.

Sincerely,



Edward J. Messina, Director
Monitoring, Assistance, and Media Programs
Division Office of Compliance

cc: Steve Anderson,
OGC Susan
Fairchild, OAQPS
Gregory Fried,
OCE

ACM duct tape is RACM. It must be quantified in square feet.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

June 22, 1998

Thomas Ripp
Chemical Engineer
USEPA
401 M. Street, SW/2223A
Washington, D.C. 20460

Dear Mr. Ripp:

As you know, EPA has been asked to clarify the Agency's position on regulating asbestos containing duct tape and wrap under the Asbestos NESHAP. Our current positions require the measurement of duct tape as linear feet under some circumstances and square feet under others.

Since many duct systems are square and attached to large exchangers and registers, these systems must be measured in square feet. In order to be consistent throughout the nation, protect public health and to ease reporting requirements, EPA will require all duct tape and wrap to be measured in square feet, regardless of the type of air handling system.

As with other regulated materials, the thickness of the duct tape/wrap will not be considered in determining the amount of regulated material. The duct tape/wrap will always be determined by area in square feet.

Of course this determination in no ways changes earlier determinations that duct tape/wrap is considered friable regulated asbestos-containing material under the Asbestos NESHAP.

In addition, this determination does not supersede any other Federal, state or local rule which may require more stringent conditions.

Sincerely,

Robert S. Trotter
Asbestos NESHAP Coordinator

AHERA Building Inspector

Annual Refresher Quiz

AHERA Regulatory Issues:

1. To what material does AHERA require the 3-5-7 sampling rule be applied?
2. What suspect materials require a “random” manner of sampling?
3. What is the primary purpose of the Reinspection?

OSHA Regulatory issues:

4. PPE (respirator / protective clothing) is always required when sampling what materials?
5. Under what circumstance does OSHA require an AHERA certified inspector?
6. Does OSHA accept point count results to prove that a material is not ACM?

NESHAP Regulatory Issues:

7. Does NESHAP allow the averaging of the analysis of the layers of a multi-layered drywall sample to prove that it is not ACM?
8. A NESHAP facility has 100 houses to demolish. All were built in the same project by the same contractor. Must every house be inspected?

9. What must be accomplished in the NESHAP thorough inspection?

10. How does the inspection report prove that a suspect material in one of the houses in question 8 is not ACM?

MAP Regulatory Issues:

11. The Model Accreditation Plan requires certification as an AHERA inspector for asbestos inspections in what buildings?

12. Multiple single family houses are to be demolished as part of a highway project. Does the MAP require inspection by a certified inspector?

Cal-OSHA Regulatory Issues

13. What does CA require of a certified inspector in order to do inspections in that state?

14. What is Asbestos Containing Construction Material (ACCM)?

15. What is "Asbestos Related Work"?

EPA Issues:

16. Considering "rounding" of analytical results in Appendix E of AHERA, is a quantitative result of 1.25% ACM?

17. Federal EPA has dropped the Fibers Program (AHERA, NESHAP, MAP, the asbestos ban).

Must you still inspect and notify for demolitions?

Must schools still have asbestos management plans?

Must you still be certified to perform inspections of commercial buildings?

The Asbestos Institute

Building Inspector Online Refresher Test

1. The term "suspect material", as used by AHERA, is all material except:
 - a. Floor tile, drywall and suspended ceiling panels
 - b. Concrete, transite pipe, Spanish tile, wood
 - c. Glass, steel, wood, concrete and cinder blocks
 - d. Fire doors, carpet, glass, steel

2. A currently certified AHERA Building Inspector is required when conducting an asbestos inspection in which of the following?
 - a. School buildings
 - b. Commercial buildings
 - c. Industrial facilities
 - d. All of the above

3. AHERA requires that the Building Inspector conduct a written assessment of all friable ACBM and TSI ACM. This consists of:
 - a. Collecting bulk samples
 - b. Quantifying areas of suspect material
 - c. Random sampling
 - d. Describing the degree of damage and the potential for future disturbance

4. Where is "random sampling" required by regulation?
 - a. Drywall
 - b. Floor tile
 - c. Friable surfacing and TSI
 - d. All sampling areas

5. According to the Asbestos NESHAP, in order to call a suspect ACM negative, a Point Count must be performed if friable material is found by Polarized Light Microscopy (PLM) to be:
 - a. Non-detect
 - b. 20-30% Chrysotile
 - c. Amosite
 - d. Less than 10% asbestos

6. A half-mask air purifying respirator will maintain "clean air" of .01 f/cc at what maximum exposure level? (MUC)
 - a. 1 f/cc
 - b. 10 f/cc
 - c. 100 f/cc
 - d. 0.1 f/cc

7. Which of the following ACBM are considered TSI?
 - a. Pipe gaskets
 - b. Duct insulation
 - c. Vibration dampening cloth in duct systems
 - d. All of the above

8. Because of the synergistic effect of smoking to asbestos exposure, the occupationally exposed smoker is at least ____ times more likely to develop lung cancer than the non-smoking general public:
 - a. 10
 - b. 20
 - c. 90
 - d. 200

9. What is the current OSHA "permissible exposure limit" or PEL, as a TWA?
 - a. 0.2 f/cc TWA
 - b. 0.01 f/cc TWA
 - c. 0.1 f/cc TWA
 - d. 3f/cc TWA

10. Numbers 1 through 4 of the Physical Assessment are reserved for materials that are:
 - a. Non-friable materials
 - b. ACBM that is damaged
 - c. ACBM in good condition
 - d. TSI only

11. An inspector is never exempt from the requirement to wear a respirator when sampling which of the following materials?
 - a. TSI and surfacing ACM
 - b. Miscellaneous ACM
 - c. Friable ACM
 - d. Respirators may always be exempt with a Negative Exposure Assessment

12. Assessment is required for which of the following ACBM?
 - a. Typical textured drywall
 - b. Vinyl asbestos tile (VAT)
 - c. Transite
 - d. Friable surfacing and TSI

13. A "popcorn ceiling" in a functional space is 900 square feet. It has localized damage over about 20% of the surface. What is the correct assessment category?
- 3
 - 2
 - 5
 - 6
14. A site contains six buildings, all built at the same time, by the same contractor, with the same materials. Which of the following is correct?
- One building inspection is done because of homogeneous materials
 - It doesn't matter
 - Six separate building inspections must be documented
 - There are six homogeneous areas of ACBM
15. When collecting samples of suspect ACBM assemblies consisting of multiple layers, the sampling inspector must:
- Use a coring tool
 - Separate the layers and sample each layer separately
 - Collect "intact" layered samples
 - Collect 7 samples
16. Which of the following are addressed in the written assessment?
- Amount of damage in square or linear feet
 - The potential for future disturbance
 - Accessibility
 - All of the above
17. According to AHERA, the minimum number of friable surfacing material samples which must be taken in an area from 1,000 square feet to 5,000 square feet is:
- 3
 - 5
 - 7
 - 9
18. "Areas which are uniform in color, texture, construction/application date and general appearance", is a description of:
- Separate room
 - Functional area
 - Utility area
 - Homogeneous area

19. According to AHERA, if a homogeneous area of friable surfacing material is less than 1,000 square feet, how many samples must be taken as a minimum?
- 9
 - 7
 - 5
 - 3
20. Vinyl floor tile should be reanalyzed by gravimetric reduction and Transmission Electron Microscopy (TEM) if found by Polarized Light Microscopy (PLM) to be:
- Non-detect (no asbestos detected)
 - 20-30% Chrysotile
 - Made in China
 - Made in Canada
21. What does the phrase "manner of sampling" refer to in AHERA?
- How the sample location is determined
 - The number of samples to be collected
 - The equipment used to collect the samples
 - All of the above
22. An inspector collecting bulk samples is regulated by OSHA under what class of work?
- Class I work
 - Class II work
 - Class III work
 - Bulk sampling is not regulated by OSHA

The following is a summary of inspection results on an AHERA asbestos inspection of a building. Use this information to answer questions 23, 24 and 25.

Sample #	Material	Amount	Friability	Lab Results
1.1	Ceiling texture A	580 sf	Yes	Negative
1.2	Ceiling texture A	580 sf	Yes	Negative
2.1	Pipe Insulation A	260 lf	No	Negative
2.2	Pipe Insulation A	260 lf	No	Negative
3	Vinyl Floor Tile A	400 sf	No	Positive
4	Vinyl Floor Tile B	160 sf	No	Negative
5	Drywall	2000 sf	No	Negative
6	Ceiling panel A	3500 sf	Yes	Positive
7	Ceiling panel B	200 sf	Yes	Negative
8.1	Fireproofing typ.	2000 sf	Yes	Negative
8.2	Fireproofing typ.	2000 sf	Yes	Negative
8.3	Fireproofing typ.	2000 sf	Yes	Negative

23. By AHERA standards, which materials may be considered **not** to contain asbestos?

- a. Only the fireproofing
- b. Fireproofing, vinyl floor tile B and drywall
- c. None of the material
- d. All except vinyl floor tile A and ceiling panel A

24. By AHERA standards, which of the following **is** ACBM?

- a. Only the vinyl floor tile A
- b. Only the vinyl floor tile A and the ceiling panel A
- c. None of the material
- d. All of the material

25. By AHERA standards, which materials were sampled sufficiently to prove negative?

- a. Only the fireproofing
- b. The fireproofing, vinyl floor tile and drywall
- c. All of the material
- d. None of the material